PAPER NAME

Teachers' Language Competence Segmentation using K-means Algorithm.pdf

AUTHOR

Heny Hartono

WORD COUNT

99474 Words

CHARACTER COUNT

563916 Characters

PAGE COUNT

260 Pages

FILE SIZE

9.4MB

SUBMISSION DATE

Feb 13, 2024 11:56 AM GMT+7

REPORT DATE

Feb 13, 2024 12:00 PM GMT+7

7% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

- 6% Internet database
- 1% Publications database
- Crossref database
- Crossref Posted Content database
- 0% Submitted Works database

Excluded from Similarity Report

- Bibliographic material
- Quoted material
- Cited material
- Small Matches (Less then 10 words)
- Manually excluded sources

Unika SOEGIJAPRANATA
Talenta pro patria et humanitate

Proceeding
eLearning Forum Asia 2021

Augmenting the Virtual Environment: Technology | Innovation | Humanity

Semarang, 30 November - 1 December 2021

PeLS Philippine eLearning Society
SYMPLICITY
UNITED BOARD
eLearning Forum Asia

Editor:
Dr. Heny Hartono, SS, M.Pd
Cecilia Titiek Murniati, PhD

Website:
https://www.elfasia.org/2021/

Soegijapranata Catholic University

Proceeding
2 eLearning Forum Asia 2021

Augmenting the Virtual Environment: Technology – Innovation – Humanity

Editor

Dr. Heny Hartono, SS, M.Pd
Cecilia Titiek Murniati, PhD

Semarang, 30 November - 1 December 2021

Website
https://www.elfasia.org/2021/

Soegijapranata Catholic University

Proceeding
eLearning Forum Asia 2021

Augmenting the Virtual Environment: Technology – Innovation – Humanity

Editor:

Dr. Heny Hartono, SS, M.Pd
Cecilia Titiek Murniati, PhD

Reviewer

Agus Cahyo Nugroho	Heny Hartono
Alb. Dwiyoga Widiantoro	Kai Pan Mark
An Chi Liu	Kevin Chan
Angelika Riyandari	Laura Zhou
Cecilia Murniati	Lenny Setyowati
Darren Harbutt	Paul Lam
Eva Wong	Theresia Dwi Hastuti
Gerardus Adhyanggono	YB Dwi Setianto

All rights reserved. Reproduction or transfer of part or all of the contents in this book in any form, electronically or mechanically, is not permitted, including photocopying, recording or with other storage systems, without written permission from the Author and Publisher.
©Soegijapranata Catholic University 2022

ISBN 978-623-5997-14-8 (PDF)

Cover Design	: Manggar
Layout	: Ernanto
Book size	: 21,5 x 30,35 cm
Font	: Goudy Old Style 12
Website	: https://www.elfasia.org/2021/
Presentation Guidelines	: ZOOM - https://www.elfasia.org/2021/?page_id=2773

Publisher:
Universitas Katolik Soegijapranata
Anggota APPTI No. 003.072.1.1.2019
Anggota IKAPI No 209/ALB/JTE/2021
Jl. Pawiyatan Luhur IV/1 Bendan Duwur Semarang 50234
Telpon (024)8441555 ext. 1409
Website: www.unika.ac.id
Email Penerbit: ebook@unika.ac.id

https://www.elfasia.org/2021/

Steering Committee

Dr. Cecilia MURNIATI	Soegijapranata Catholic University (SCU)
Prof. Ridwan SANJAYA	Soegijapranata Catholic University (SCU)
Dr. Heny HARTONO	Soegijapranata Catholic University (SCU)
President Ruay-Shiung CHANG	National Taipei University of Business (NTUB)
Mr. Darren HARBUTT	Hong Kong Polytechnic University (HKPU)
Mr. Kevin HENDERSON	United Board
Ms. Taeko SUGA	United Board
Dr. Patrachart KOMOLKITI	Chulalongkorn University (CHULA)
Prof Paul LAM	The Chinese University of Hong Kong (CUHK)
Mr. Chye Seng LEE	Singapore University of Social Sciences (SUSS)
Prof. An Chi LIU	Feng Chia University (FCU)
Dr. Daniel TAN	eLearning Forum Asia (eLFA)
Dr. Eva WONG	Hong Kong Baptist University (HKBU)

Organizing Committee

Dr. Heny HARTONO, S.S. M.Pd.	Chairperson
Albertus Dwiyoga WIDIANTORO, S.Kom., M.Kom.	Vice Chairperson
G. M. Adhyanggono, S.S., M.A., PhD	Secretary
Yuliana Indra HAKSARI, AMd	Secretary
Dr. Theresia Dwi HASTUTI, S.E., M.Si.	Treasurer
Dra. Susana JAW! N., M.S.I.	Treasurer
Y.B. Dwi SETIANTO	IT Division Coordinator
Agus Cahyo NUGROHO, S.Kom., M.T.	IT Division
Antonius Padua Rezky TRENGGONO, S.T.	IT Division
Angelika RIYANDARI, S.S., M.A.,Ph.D	Program Coordinator
Christya PUTRANTI, S.H., M.H	Program Division
Eny TRIMEININGRUM, S.E., M.S.I.	Reviewer Division
Rikarda Ratih SAPTAASTUTI, S.S., M.I.Kom	Reviewer Division
Lenny SETYOWATI, SS., M.I.Kom	Sponsorship Division
Fransiskus Juwono AGUS S, S.H.	Public Relation Division
Theresia Putril Manggar SARI, S.Ds.	Design & Publication
Ignatius Eko Budi SETIONO, S.Pd., M.M.	Design & Publication
F. Henry ERNANTO	Design & Publication

Program Schedule

https://www.elfasia.org/2021/?page_id=2716

Day One – 30 November 2021	
Jakarta Time (UTC+7)	Details
09:00-09:25	Opening Ceremony Welcoming Speeches by Rector Soegijapranata Catholic University Greetings from Dr. Patrachart KOMOLKITI Director of Learning Innovation Center Chulalongkorn University, Thailand Chair of eLFAsia Dr. Heny HARTONO Chair of eLFA2021 Organizing Committee - Keynote, Plenary Speakers, Panel Speakers, and Invited Guests-Photo Session
09:25-09:30	*Break*
09:30-10:00	Keynote Session I Title: Digital Ethics: Navigating Disruption in Higher Education Kevin HENDERSON Director of Digital Content and Programming United Board
10:00-10:05	Video Presentation by Symplicity
10:05-10:10	Break

<table>
<tr><td>10:10-10:40</td><td>Plenary Session I

Title: Ethical Considerations towards Technology Contribution in an Era of a Rapidly Changing Society: the Responsibilities of Higher Education

Dr. Aaron LOH
Director for Universities Collaboration
Assumption University of Thailand</td></tr>
<tr><td>10:40-10:45</td><td>Break</td></tr>
<tr><td>10:45-11:15</td><td>Sponsor Session

Platinum Sponsor – SYMPLICITY

Title: Connecting Students And Industry
Presenter: Mark Pink, Sales Direction APAC, Symplicity</td></tr>
<tr><td>11:10-11:15</td><td>Break</td></tr>
<tr><td>11:15-12:15</td><td>Parallel Sessions-1
(Oral Presentations)
<table><tr><td>Room 1</td><td>Room 2</td><td>Room 3</td><td>Room 4</td><td>Room 5</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Room 6</td><td>Room 7</td><td>Room 8</td><td>Room 9</td><td>Room 10</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>12:15-12:20</td><td>Break</td></tr>
<tr><td>12:20-13:20</td><td>Parallel Sessions-2
(Oral Presentations)
<table><tr><td>Room 1</td><td>Room 2</td><td>Room 3</td><td>Room 4</td><td>Room 5</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr><tr><td>Room 6</td><td>Room 7</td><td>Room 8</td><td>Room 9</td><td>Room 10</td></tr><tr><td></td><td></td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>13:20-13:25</td><td>Break</td></tr>
<tr><td>13:25-13:55</td><td>Plenary Session II

Title: HE Crossroads: Threats and Opportunities

Dr. Patrachart KOMOLKITI
Director of Learning Innovation Center
Chulalongkorn University, Thailand</td></tr>
<tr><td>13:55-14:00</td><td>Break</td></tr>
</table>

14:00-15:00	Panel Discussion I Topic: Leadership in Technology Adoption --Panel Members— Aning AYUCITRA, ST., M.Sc., Ph.D. Widya Mandala University, Indonesia Sushardjanti FELASARI, ST., M.Sc.CAED., Ph.D. Atmajaya University, Indonesia Angelia Melani ADRIAN, Ph.D De La Salle Catholic University, Indonesia Cecilia T. MURNIATI, Ph.D Soegijapranata Catholic University, Indonesia

Day Two – 1 December 2021

Jakarta Time (UTC+7)	Details
08:30-09:00	Keynote Session II Title: Digital Transformation in Learning and Teaching: Opportunities and Challenges Professor Albert CHAU Vice-President (Teaching and Learning) of Hong Kong Baptist University Hong Kong Baptist University
09:00-09:05	*Break*
09:05-10:05	Parallel Sessions-3 (Oral Presentations) Room 1 | Room 2 | Room 3 | Room 4 | Room 5 Room 6 | Room 7 | Room 8 | Room 9 | Room 10
10:05-10:10	*Break*
10:10-11:10	Parallel Sessions-4 (Oral Presentations) Room 1 | Room 2 | Room 3 | Room 4 | Room 5 Room 1 | Room 2 | Room 3 | Room 4 | Room 5
11:10-11:15	*Break*
11:15-12:15	Panel Discussion II Topic: Hybrid Learning: Challenges and Support --Panel Members— Dr. Dave E. MARCIAL Silliman University, Philippines Dr. Yudha THIANTO Trinity Christian College, U.S.A Tri Basuki JOEWONO, Ph.D Parahyangan University Dr. Heny HARTONO Soegijapranata Catholic University, Indonesia Dr. Min-Yu LI Dean of Global Engagement, Associate Prof of International Business Chang Jung Christian University, Taiwan
12:15-12:20	*Break*

<table>
<tr><td>12:20-13:20</td><td colspan="5">Parallel Sessions-5

(Oral Presentations)</td></tr>
<tr><td rowspan="4"></td><td>Room 1</td><td>Room 2</td><td>Room 3</td><td>Room 4</td><td>Room 5</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Room 6</td><td>Room 7</td><td>Room 8</td><td>Room 9</td><td>Room 10</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>13:20-13:50</td><td colspan="5">Plenary Session III

Title: Modest Augmented Reality Technology for Education

Professor Ridwan SANJAYA
Professor of Information System
Faculty of Computer Science
Soegijapranata Catholic University</td></tr>
<tr><td>13:50-13:55</td><td colspan="5">Break</td></tr>
<tr><td>13:55-14:25</td><td colspan="5">Keynote Session III

Title: Preserving “The Teacher Within” in Virtual Learning Environment

Professor Budi WIDIANARKO
Professor of Environmental Toxicology
Faculty of Agricultural Technology
Soegijapranata Catholic University</td></tr>
<tr><td>14:25-14:30</td><td colspan="5">Break</td></tr>
<tr><td>14:30-15:00</td><td colspan="5">eLFA2021 Award Presentation</td></tr>
<tr><td>15:00-15:30</td><td colspan="5">Announcement of 2022 eLFA Host

&

Closing Ceremony</td></tr>
<tr><td colspan="6">End of Conference Day Two</td></tr>
</table>

https://www.elfasia.org/2021/?page_id=2727

Day One-30 November 2021 (Jakarta Time, UTC+7)

Parallel Session 1

Room 1 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
11:15-12:15	30 November 2021 (Day 1)			
11:15-11:35		1	Michael Adarkwah	Title: A Strategic Approach to Onsite learning in the Era of SARS-Cov-2 Author(s): Michael Adarkwah
11:35-11:55		2	YB Dwi Setianto	Title: Student Engagement Trends in Online Learning using Moodle During First Year Covid-19 Pandemic in Soegijapranata Catholic University Author(s): YB Dwi Setianto
11:55-12:15		11	Ved Pal Singh	Title: An Experience of Online Teaching in Legal Education: Glimpses from India Author(s): Ved Pal Singh

Room 2 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
11:15-12:15	30 November 2021 (Day 1)			
11:15-11:35		12	Christine Cunningham Michelle Striepe Wei Zhang	Title: Zooming into a Chinese University to Teach about Education Leadership from Australia: What could possibly go wrong? Author(s): Christine Cunningham, Michelle Striepe, and Wei Zhang
11:35-11:55		18	Kit Ying Rebecca Lee	Title: How Can We Engage and Motivate Students in Learning Biochemical Pathways? Author(s): Kit Ying Rebecca Lee, Yuen-King Ng, Hang Mee Yeung, Yat Nam Bernard Ng, and Minghui Chen

11:55-12:15		22	Sujitra Sockanathan	Title: Effective VARK Model Among Academician and Student Classroom Engagement: A case study in American Degree Transfer Program, Sunway University Author(s): Sujitra Sockanathan and Devandran Apparasamy

Room 3 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
11:15-12:15	30 November 2021 (Day 1)			
11:15-11:35		24	Yin Ni Annie Ng	Title: Students' Perception of Different Learning Activities in Online Synchronize Lesson Author(s): Yin Ni Annie Ng
11:35-11:55		32	Ernesto Jr. Collo	Title: Towards Creating a Conducive Remote Learning Milieu: A Case Study of Development Communication Graduate Students' Reflective Accounts in the Time of Pandemic Author(s): Ernesto Jr. Collo
11:55-12:15				

Room 4 | Session Theme: Adaptive e-Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
11:15-12:15	30 November 2021 (Day 1)			
11:15-11:35		10	Thanh Thuy Pham	Title: Utilizing Textbooks in Online Language Classrooms: A Combination of Synchronous and Asynchronous Learning Author(s): Thanh Thuy Pham
11:35-11:55		14	John Christian Espinola Phill Andrew De Leon	Title: Learning Foreign Language Using Mobile Applications in Enhancing Communication Fluency Among Young Professionals Author(s): John Christian Espinola and Phill Andrew De Leon
11:55-12:15		20	Emma H Zhang	Title: Globalizing the Classroom through Virtual Exchange Author(s): Emma H Zhang

Room 5 | Session Theme: Adaptive e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
11:15-12:15	30 November 2021 (Day 1)			
11:15-11:35		23	Kathleen Ashley Pantollano Arnee Dengal Ma. Kareysha Claire Mancera	Title: Experiences of Aged Teachers in New Normal Learning Author(s): Kathleen Ashley Pantollano, Arnee Dengal, Ma. Kareysha, Claire Mancera, Areen Joy Estera, and Jeovanny Martıcion
11:35-11:55		26	John Clemence Pinlac Noel Cruz Caryn Paredes-Santillan	Title: Resiliency of the Architects in the Academe: A Qualitative Focus on the Virtual Architectural Design Studio in the Philippines Author(s): John Clemence Pinlac, Noel Cruz, and Caryn Paredes-Santillan
11:55-12:15		137	Shafreen Banu Mohamed Aslam Antony Julian	Title: Adaptive E-Learning -A Comparative Study Author(s): Shafreen Banu, Mohamed Aslam, and Antony Julian

Room 6 | Session Theme: Assessment of e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
11:15-12:15	30 November 2021 (Day 1)			
11:15-11:35		6	Ben Chester Cheong	Title: Teaching Law Online to Adult Learners in a Pandemic-A Singapore Experience Author(s): Ben Chester Cheong
11:35-11:55		77	Dave Gatrell	Title: Using Video-based Formative Assessment to Facilitate Skill-based Learning in the Time of COVID Author(s): Dave Gatrell, Kai Pan Mark, Kevin Chan, Cypher Au-Yeung, and Ka Yee Leung
11:55-12:15		25	Heny Hartono	Title: Students' Voices in Online Learning Assessment Author(s): Heny Hartono

Room 7 | Session Theme: Assessment of e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
11:15-12:15	30 November 2021 (Day 1)			
11:15-11:35		27	Dr. Varbi Roy Dr. Aniruddha Chatterjee	Title: Educator's Perspective on Teaching-Learning Process during COVID-19 Pandemic in Higher Education Institutes of West Bengal Author(s): Dr. Varbi Roy and Dr. Aniruddha Chatterjee
11:35-11:55		31	John Blake Gordon Bubou Ibebietei Offor	Title: Assessment of Students' E-Learning Readiness at Yenagoa Study Centre, National Open University of Nigeria Author(s): Gordon Bubou, Ibebietei Offor, and Job Gabriel
11:55-12:15		42	Jorim Joel Gregorio	Title: Effective of Online Teaching Approach to the Learning Domains of Nursing Students Author(s): Jorim Joel Gregorio, Ma. Lou Ester Gutierrez, Alyssa Nicole Jainga, Marielle Jover, Jouraine Aine Marie Jamelo, Lharyza Jimenez, Jelma Crystel Implica, Salex Alibogha, and Rossini Gayerex-Jovero

Room 8 | Session Theme: Learning oriented devices and networks

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
11:15-12:15	30 November 2021 (Day 1)			
11:15-11:35		9	Albertus Satriyo Bayuaji Zefanya Devendra P.N. Vittalis Ayu	Title: A Prototype of Wireless Portable Learning Management System to Support E-learning in Remote Area Author(s): Albertus Satriyo Bayuaji, Zefanya Devendra P.N., and Vittalis Ayu
11:35-11:55		29	Manilyn Templo	Title: Facebook Classroom as Alternative Learning Management System for Remote Learning Author(s): Manilyn Templo, and Jeovanny Martición

11:55-12:15		38	Desideria Cempaka Wijaya Murti	Title: Digitalizing Rural Village: Adopting Deep Learning Technology and Community Empowerment through Nature Tour Classes in Kulon Progo, Indonesia Author(s): Desideria Cempaka Wijaya Murti, Victoria Sundari Handoko, and Antonius Bima Murti Wijaya

Room 9 | Session Theme: Curriculum & Syllabus Design

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
11:15-12:15	30 November 2021 (Day 1)			
11:15-11:35		7	Hui-Kuei Alice Hsieh	Title: Will Vocabulary Breakthrough Games Help Learners with Lower English Proficiency? Author(s): Hui-Kuei Alice Hsieh
11:35-11:55		21	Leland Joseph Dela Cruz	Title: Organizing Canvas for Effective Online Learning Author(s): Leland Joseph Dela Cruz
11:55-12:15		64	Dawei Xu	Title: IMMEX-Ten years of Introduction and Digestion Author(s): Dawei Xu and Ren Henry

Room 10 | Session Theme: (Augmented) Virtual Reality

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
11:15-12:15	30 November 2021 (Day 1)			
11:15-11:35		13	Ramesh Chander Sharma	Title: Designing Virtual Reality Experiences in Education Author(s): Ramesh Chander Sharma
11:35-11:55		46	Ting-En Wu	Title: Trends of Technique Training with VR Technology: Investigating from Public Information of Government Author(s): You-Bin Ke, Ting-En Wu, Chia-Hung Lai, and Su-Hsien Huang
11:55-12:15		50	Jayden Ang	Title: Using Augmented Reality to Enhance Learning Experience in a Chemistry Laboratory Author(s): Jayden Ang, Shao Shi, and Wai Ming Kong

Parallel Session 2

Room 1 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	30 November 2021 (Day 1)			
12:20-12:40		33	Tippawan Siritientong	Title: Students' Reflection on Sandwich-like Online Teaching Methods in the Nutrition Class Author(s): Tippawan Siritientong
12:40-13:00		34	Xuzhe Wang	Title: Applying Design Thinking to Build an Engaging Online Course Author(s): Xuzhe Wang
13:00-13:20		52	Dave Gatrell	Title: Using Learning Analytics to Measure Student Engagement and Learning Outcomes in 'Virtual Tutorials' Author(s): Dave Gatrell , Chun Sang Chan, and Albert Chan

Room 2 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	30 November 2021 (Day 1)			
12:20-12:40		55	Voltaire Mistades	Title: Social and Emotional Learning in STEM Author(s): Voltaire Mistades
12:40-13:00		56	Agnes Ng	Title: e-escape Rooms-Do Students Really Find Them Engaging and Effective? Author(s): Agnes Ng
13:00-13:20		60	John Paul Sumanting	Title: Predictors of Academic Performance in Online Medical-Surgical Nursing Class among Student Nurses in a Private University Author(s): John Paul Sumanting, Emira Janelle Siva, Therese Marie Taton, Jann Messiahs Trabasas, Chrisxanne Velez, Jerard Yabut, and Melba Sale

Room 3 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	30 November 2021 (Day 1)			
12:20-12:40		61	Christel Dawn Limsiaco Jade Alexandra Leong Jaehazle Magbanua Colleen Kate Licera Bruce Raymond Juele Kryst Ian Macuja Andrea Jean Magallon	Title: Barriers and Levels of Motivation in Online Learning of Student Nurses in a Private University Author(s): Christel DawnLimsiaco, Jade Alexandra Leong, Jaehazle Magbanua, Colleen Kate Licera, Bruce Raymond Juele, Kryst Ian Macuja, Andrea Jean Magallon, and Rosana Grace Belo-Delariarte
12:40-13:00		111	Chee Leung Mak	Title: Borderless Lab 365: A student-centered learning science platform to enhance STEM education Author(s): Wang Fai Cheng, Ka Lai Wong, Ming Tak Sze, Siu Hong Choy, Kwok Lung Jim, Chi Wah Leung and Chee Leung Mak
13:00-13:20		86	Pear Ferreira	Title: The Acceptance of Online Inverted Classroom Model and Peer-assisted Learning among Ophthalmology Graduate Students Author(s): Pear Pongsachareonnont Ferreira , Disorn Suwajanakorn, Parima Hirunwiwatkul, Wijak Kongwattananon, Anita Manassakorn, Kittisak Kulvichit, and Wasee Tulvatana

Room 4 | Session Theme: Adaptive e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	30 November 2021 (Day 1)			
12:20-12:40		35	Grace Tagapan Trisha Angelica Cabrera	Title: Lived Experiences of Subanen Learners in Remote Learning Author(s): Grace Tagapan, Argea Joy Galleposo, and Trisha Angelica Cabrera
12:40-13:00		45	Siby Samuel	Title: Integrating Adaptive and Intelligent Practices for an Active e-Learning Environment Author(s): Siby Samuel and Mary Raymer

13:00-13:20		48	Dr. Stella Mary R. Jayalakshmi Kaviya J. Nijaritha	Title: Progressing towards an Effective Online Learning Environment Building Positive Attitude among Students of Higher Education Author(s): Stella Mary Fmm, Jayalakshmi, and Kaviya Nijaritha

Room 5 | Session Theme: Adaptive e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	30 November 2021 (Day 1)			
12:20-12:40		152	Arne Barcelo	Title: Designing a Back-to-School Hybrid-Flexible mode of learning in the Philippines: A Systems Thinking Approach Author(s): Arne Barcelo, Mille Andrei De Leon, and Jan Noffe Rollon
12:40-13:00		54	Vincent Leung	Title: Incentivize students in hybrid class mode by flipped classroom approach Author(s): Vincent Leung
13:00-13:20		58	Amy Lee	Title: From the Body Offline to the Learning Online: Exploring Ways to Employ eLearning for Drama in Education Author(s): Amy Lee

Room 6 | Session Theme: Assessment of e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	30 November 2021 (Day 1)			
12:20-12:40		49	Tasya Errufana Ruben Carmelo Yustian Elsa Mutiara Heny Hartono	Title: Teachers' Perspectives towards E-learning Assessment: A Study at Public and Private Schools in Semarang Author(s): Tasya Errufana, Ruben Carmelo Yustian, Elsa Mutiara, and Heny Hartono
12:40-13:00		40	Hao Wei Hsu Cecilia Banag-Moran Alyssa Marie Lola	Title: Students' Perception on Remote Laboratory Instruction in Evolutionary Biology: A Qualitative-method Approach Author(s): Hao Wei Hsu, Cecilia Banag-Moran, Sam Dominic Binag, Niño Andree Louis Caguimbal, Nikki Heherson Dagamac, Yñigo Luis Del Prado, Alyssa Marie Lola, Crissa Ann Lilagan, Russel Evan Venturina, and Maria Isabella Escobar

Room 7 | Session Theme: Assessment of e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	30 November 2021 (Day 1)			
12:20-12:40		8	Elisabeth Rukmini	Title: The Validity and Reliability of the Online Cooperative Learning Attitude Scales in the Indonesian Language Author(s): Elisabeth Rukmini, Arya Nugraha, Hanna Angelina, and Dara Christianty
12:40-13:00		57	Huma Akram	Title: E-Learning Platforms and Students' Online Learning Satisfaction: The Moderation Role of Computer Self-Efficacy Author(s): Huma Akram
13:00-13:20		69	Fedor Duzhin	Title: Integration of AI- and human-generated feedback to improve short essay writing Author(s): Fedor Duzhin and Konstantin Pervushin

Room 8 | Session Theme: Learning oriented devices and networks

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	30 November 2021 (Day 1)			
12:20-12:40		79	Pio Angelo Yoro	Title: Use of Electronic Health Records: Knowledge and Competency Skills among Staff Nurses in a Private Hospital in Iloilo City Author(s): Pio Angelo Yoro, Joanna Trizzea Socobos, Joyce Anne Teo, Ericka Tubongbanua, Laureen Villalobos, Nathaniel Tacluyan, and Betty Polido
12:40-13:00		125	Inti Englishtina	Title: Using Social Media to Improve Speaking Skill in Public Speaking Class Author(s): Inti Englishtina
13:00-13:20				

Room 9 | Session Theme: Curriculum & Syllabus Design

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors

12:20-13:20	30 November 2021 (Day 1)			
12:20-12:40		65	Min Chen	Title: Use IMMEX assistance to realize student-centered teaching practice Author(s): Min Chen and Ren Henry
12:40-13:00		164	Dr. Rameesha Kalra Dr. Kiran Vazirani	Title: Curriculum Design for Hybrid Learning mode in Higher Education with reference to the Indian National Education Policy- 2020 Author(s): Dr. Rameesha Kalra and Dr. Kiran Vazirani
13:00-13:20		116	Donald Manlapaz	Title: Evaluation of Physical Therapy bridging program during Covid-19: from online to limited face-to-face learning Author(s): Donald Manlapaz, Anne Marie Aseron and Fe Therese Chavez

Room 10 | Session Theme: (Augmented) Virtual Reality

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	30 November 2021 (Day 1)			
12:20-12:40		92	Dave Marcial Dave Montemayor Joy Dy	Title: Gamifying Whole Person Education: The Development of a Mobile Application with Augmented Reality Author(s): Dave Marcial, Dave Montemayor, and Joy Dy
12:40-13:00		94	Florence Mei Kuen Tang	Title: Collaboration with Secondary Schools for A Virtual Reality Gamification: Students' Perceptions in Learning Biology for STEM Education Author(s): Florence M.K. Tang, Christine K.Y. Yu, Olivia M.Y. Ngan, Roy K.L. Chan, Peter H.F. Ng, Daniel K.T. Fung, and T.C. Chan
13:00-13:20				

Day Two-1 December 2021 (Jakarta Time, UTC+7)

Parallel Session 3

Room 1 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
09:05-10:05	1 December 2021 (Day 2)			
09:05-09:25		87	Novita Al Ihyak Dieni	Title: Online Learning: Students' Perception and Students' Learning Success Author(s): Novita Al Ihyak Dieni
09:25-09-45		98	Bao Zhen Tan Yee Zher Sheng	Title: Transition to Fully Online Learning Due to COVID-19: The Adult Learners' Perspectives Author(s): Bao Zhen Tan and Yee Zher Sheng
09-45-10:05		105	Rika Saraswati	Title: Roots Program in Indonesia: Transferring the Module of Knowledge and Activities from Offline to Online during Pandemic Covid-19 Author(s): Rika Saraswati

Room 2 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
09:05-10:05	1 December 2021 (Day 2)			
09:05-09:25		106	Jackson Kong	Title: Learning Creative Design online with a flipped classroom approach Author(s): Jackson Kong, Ka Lai Wong, Ming Tak Sze, Siu Hong Choy, Kwok Lung Jim, Chi Wah Leung, and Chee Leung Mak
09:25-09-45		115	Edmond W.M. Lam Daniel W.M. Chan	Title: Effects of Instructional Strategies on Enhancing Student Learning Author(s): Edmond W.M. Lam and Daniel W.M. Chan
09-45-10:05		165	Victoria Kristina Ananingsih	Title: Online Laboratory Work for Herbal Processing Author(s): Victoria Kristina Ananingsih

Room 3 | Session Theme: Adaptive e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
09:05-10:05	1 December 2021 (Day 2)			
09:05-09:25		89	T. Durga Devi	Title: Projecting the Impact of Integrated Service-Learning Projects on History Graduates of Lady Doak College through Online Learning Approach Author(s): T. Durga Devi, B. Aashika, and N. Kavipriya
09:25-09-45		103	Wasee Tulvatana	Title: Tele-EyePathology: Lessons learned and Survey of the learners' experiences Author(s): Wasee Tulvatana and VannakornPruksakorn
09-45-10:05		51	Lenny Setyowati	Title: Diffusion Innovation in Online Learning and Practical Studies in Event Organizer Management Course during the Covid-19 Pandemic Author(s): Lenny Setyowati

Room 4 | Session Theme: Adaptive e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
09:05-10:05	1 December 2021 (Day 2)			
09:05-09:25		122	Sok Mui Lim	Title: Use of Gamified Platform to Improve Freshmen's Unreflective Approach to Learning Author(s): Sok Mui Lim, Oran Devilly, Xiao Feng, Kenan Kok, and Chek Tien Tan
09:25-09-45		127	Gregorius Pramudita Witaradya	Title: Using Discord as a Platform for Team-based Work in Online Learning Author(s): Gregorius Pramudita Witaradya
09-45-10:05		129	Toong Tjiek Liauw	Title: Mendadak Daring: Challenges and Opportunities in Transitioning Teaching and Learning into Online Environment Author(s): Toong Tjiek Liauw

Room 5 | Session Theme: Assessment of e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
09:05-10:05	1 December 2021 (Day 2)			
09:05-09:25		70	Vincent Leung Kai Pan Mark Hazel Lee	Title: How to Reduce the Dilemma in Students' Peer Appraisal Author(s): Vincent Leung, Kai Pan Mark, and Hazel Lee
09:25-09-45		91	Rosita Herawati	Title: Teachers' Language Competence Segmentation using K-means Algorithm Author(s): Rosita Herawati, Heny Hartono, and Cecilia Titiek Murniati
09-45-10:05		53	Dave Gatrell	Title: A second pair of eyes: Remediating formative assessment in a clinical optometry module using a video annotation tool Author(s): Dave Gatrell

Room 6 | Session Theme: Learning-oriented Technologies

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
09:05-10:05	1 December 2021 (Day 2)			
09:05-09:25		68	Fedor Duzhin	Title: Text Analytics on WhatsApp Chats Author(s): Fedor Duzhin and Joo-Seng Tan
09:25-09-45		112	Georgina Kusano	Title: Cooperative Learning in Physical Education through the Use of Fitness Apps Author(s): Georgina Kusano
09-45-10:05		140	Kamolrat Intaratat	Title: "STOU-ODL to Serve the Demanding SDG's Cross Cutting Issues in Thailand under the Digital Technology & COVID-19 Pandemic Disruption" Author(s): Kamolrat Intaratat

Room 7 | Session Theme: Learning-oriented Technologies

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
09:05-10:05	1 December 2021 (Day 2)			
09:05-09:25		17	Tracy Jose	Title: Obsidian: The Future of Note-making Author(s): Tracy Jose
09:25-09-45		109	Kai Lai Wong Siu Hong Choy	Title: Laboratory-in-your-pocket: A Real-time Hand-on Experimental Platform based on Arduino-smartphone Author(s): Kai Lai Wong, Wang Fai Cheng, Kwok Lung Jim, Chi Wah Leung, Chee Leung Mak, and Siu Hong Choy
09-45-10:05		88	Dongkun Han	Title: An Intelligent Cloud Teacher for Unmanned Robotic Online Laboratory Author(s): Dongkun Han and Martin Yun-Yee Leung

Room 8 | Session Theme: Curriculum & Syllabus Design

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
09:05-10:05	1 December 2021 (Day 2)			
09:05-09:25		66	Haisheng Wang	Title: Use The IMMEX Information Environment to Develop the Cultivation and Exploration of the Mathematical Problem-solving Ability in Middle School Author(s): Haisheng Wang and Ren Henry
09:25-09-45		121	Archimedes David Guerra	Title: International Case Studies for Promoting Intercultural Competence and Social Responsibility in University Students Author(s): Archimedes David Guerra
09-45-10:05				

Room 9 | Session Theme: (Augmented) Virtual Reality

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
09:05-10:05	1 December 2021 (Day 2)			
09:05-09:25		95	Adam Fingrut	Title: Virtual Reality (VR) for Immersive 3-D eLearning, Making, and Communications in Architecture Author(s): Adam Fingrut and Hillary Ng
09:25-09-45		143	Mohd Faeiz Pauzi	Title: An Application of Immersive Augmented Reality Technology for Clinical Skill Training in Medical Education Author(s): Mohd Faeiz Pauzi and Siti Norazlina Juhari
09-45-10:05		145	Rudi Santoso Chow Ervi Liusman	Title: Implementing Crisis Resilience Pedagogy (CRP) in Mortgage and Real Estate Education: Case Study of Online Video Library and Virtual Reality (VR) based Education in Hong Kong and Indonesia Author(s): Rudi Santoso Chow, Ervi Liusman, and Oktovianus Pudjianto

Room 10 | Session Theme: Tools and Platforms

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
09:05-10:05	1 December 2021 (Day 2)			
09:05-09:25		28	Supakarn Chamni	Title: Online Office for the Graduate Studies Author(s): Supakarn Chamni and Duangjai Taweepa
09:25-09-45		36	Rikarda Ratih Saptaastuti	Title: The Effectiveness of Using E-learning for Information Literacy Author(s): Rikarda Ratih Saptaastuti
09-45-10:05		67	Heru Astikasari Setya Murti	Title: Using the ADDIE model to Develop Critical Thinking Serious Game for Reducing Misconceptions in Psychology Author(s): Heru Astikasari Setya Murti, Thomas Dicky Hastjarjo and Ridi Ferdiana

Parallel Session 4

Room 1 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
10:10-11:10	1 December 2021 (Day 2)			
10:10-10:30		117	Yuli Christiana Yoedo Mustofa Ali	Title: A Case Study: The COVID-19 Pandemic Challenge for Motivating Teacher Candidates to Improve their English Knowledge and Skills Author(s): Yuli Christiana Yoedo
10:30-10:50		128	Steffie Mega Mahardhika	Title: Students' Response Toward Teaching Online in English Reading Class Author(s): Steffie Mega Mahardhika
10:50-11:10		134	Maheswaran Muniandy	Title: A Qualitative Analysis on Students' Perspectives Towards Online Learning Author(s): Maheswaran Muniandy

Room 2 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
10:10-11:10	1 December 2021 (Day 2)			
10:10-10:30		138	Paulus Widiatmoko Ignatius Endarto	Title: Pre-Service English Teachers' Readiness for Online Instruction and Anxiety amidst Covid-19 Pandemic Author(s): Paulus Widiatmoko and Ignatius Endarto
10:30-10:50		142	Shafreen Banu Mohamed Aslam Antony Julian	Title: Online Learning -An Education in Covid-19 Author(s): Shafreen Banu, Mohamed Aslam, and Antony Julian
10:50-11:10		144	Emilia Aydawati	Title: Peer Review in Online Academic Writing Class from the Students 'Perspective Author(s): Emilia Aydawati

Room 3 | Session Theme: Adaptive e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
10:10-11:10	1 December 2021 (Day 2)			
10:10-10:30		131	Grace Gayathri Ramakarsinin	Title: Online Learning: The Impact of Listicle Writing Guide on Low Proficient Students' Ability In Writing Corresponding Essays Author(s): Grace Gayathri Ramakarsinin and Grace Vishalini Ramakarsinin
10:30-10:50		132	Ridhotama Shanti Darsih Ottemoesoe	Title: The effects of teaching skills on teaching performance in Petra Christian University (PCU): Did the Covid-19 pandemic make a difference? Author(s): Ridhotama Shanti Darsih Ottemoesoe, Yohanes Sondang Kunto, and Liauw Toong Tjiek
10:50-11:10		136	Angelika Riyandari	Title: Students' Evaluation on the Use of Google Jamboard in the Online Learning Author(s): Angelika Riyandari

Room 4 | Session Theme: Adaptive e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
10:10-11:10	1 December 2021 (Day 2)			
10:10-10:30		30	Wong Gary	Title: Low-fidelity Buyer Seller Housing Simulations Can Encourage Authentic Learning Experiences Author(s): Wong Gary, Wong Paulina, and Daniel Shen
10:30-10:50		139	Kenny Sely Heny Hartono	Title: A Study on Students' Perception of Social Media to Learn English as a Foreign Language Author(s): Kenny Sely, Cecilia Murniati, Heny Hartono
10:50-11:10				

Room 5 | Session Theme: Assessment of e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
10:10-11:10	1 December 2021 (Day 2)			
10:10-10:30		101	Agus Cahyo Nugroho	Title: Evaluation of Acceptance of Block Programming Technology for Multidisciplinary New Students at Unika Soegijapranata Author(s): Agus Cahyo Nugroho
10:30-10:50		102	Pauli Lai Julia Chen Vicky Man	Title: Development of an AI-assisted Platform to address Learning and Assessment Needs of Virtual Presentations in English for Chinese students Author(s): Pauli Lai, Julia Chen, and Vicky Man
10:50-11:10				

Room 6 | Session Theme: Learning-oriented Technologies

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
10:10-11:10	1 December 2021 (Day 2)			
10:10-10:30		97	Jianwu Wang	Title: - Author(s): Jianwu Wang, See Yew Lim, Kok On Lin, Chee Keong Tan, Hwee Juan Tan, Yuan Sheng Tan, and Sairin Bin Sani
10:30-10:50		147	Bernadus Rukiyanto	Title: Developing eLearning Resources in Religious Education Department, Sanata Dharma University, Indonesia Author(s): Bernadus Rukiyanto
10:50-11:10		120	Kai Pan Mark Rodney Wai-Chu Karmen Zheng Charles W.H. Woo	Title: Face to Face or Online? Student-led Approach in Driving Acceptance and Sustainability of Hybrid Teaching Author(s): Kai Pan Mark, Rodney Wai-Chu, Karmen Zheng, and Charles W.H. Woo

Room 7 | Session Theme: Curriculum & Syllabus Design

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
10:10-11:10	1 December 2021 (Day 2)			
10:10-10:30		126	Louie Dasas	Title: Commonplace of Curriculum Design in the Next Normal: Insights from Philippine Pandemic Classrooms Author(s): Louie Dasas
10:30-10:50		135	Cherine Tan	Title: Project Based Learning and Transdisciplinary Approach as Pedagogies for Innovative and Enterprise Education to Develop 21st Century Skills Author(s): Cherine Tan and Foon Yee Lee
10:50-11:10		73	Martin Lau Theresa Kwong	Title: Promoting Flipped Learning in Hong Kong's Secondary Schools through a Joint-institutional Project Author(s): Martin Lau and Theresa Kwong

Room 8 | Session Theme: Tools and Platforms

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
10:10-11:10	1 December 2021 (Day 2)			
10:10-10:30		76	Hazelene Grace De Asis	Title: Lived Experiences of Doctors Utilizing Telemedicine for Patient Care in a Private Hospital in Iloilo City Author(s): Hazelene Grace De Asis, Christienne Gabrielle Capague, Veronica Blancaflor, Celyn Capate, Jan Gabriel Delos Santos, Carl John Degala, and Betty Polido
10:30-10:50		114	Arman Santos Maria Ana Quimbo	Title: Development and Validation of Scouts' MATHventures: A Mobile Application Screening Tool for Dyscalculic Tendencies Author(s): Arman Santos and Maria Ana Quimbo
10:50-11:10		47	Elfrida Oktaviani	Title: Teachers' Challenges and Strategies of Teaching Speaking in Virtual Classrooms Author(s): Elfrida Oktaviani, Cecilia Titiek Murniati and Heny Hartono

Room 9 | Session Theme: Digital Ethics

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
10:10-11:10	1 December 2021 (Day 2)			
10:10-10:30		37	Mita Yesyca	Title: The Construction of Virtual Public Space in the Gamespace Author(s): Mita Yesyca
10:30-10:50		59	Jacqueline Kareem Arathi Venkatesh Abhaya Gurumurthy	Title: Transition from offline to digital learning: Negotiating attitudes and challenges among higher education students Author(s): Jacqueline Kareem, Arathi Venkatesh, and Abhaya N.B.
10:50-11:10		123	Cecilia Murniati	Title: A study of college students' perception and practice of digital citizenship Author(s): Cecilia Murniati, Heny Hartono, Angelika Riyandari, Rikarda Ratih Saptaastuti and Andre Kurniawan

Room 10 | Session Theme: Digital Ethics

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
10:10-11:10	1 December 2021 (Day 2)			
10:10-10:30		153	Dave Marcial Jan Cynth Palama	Title: Why Should Students Take Screen Breaks? Lessons Learned in Shifting from Face-to-face to Fully Online Distance Learning Author(s): Dave Marcial, Jan Cynth Palama, and Aurielle Lisa Maypa
10:30-10:50		163	Mary Jayanthi Michael	Title: Being and Becoming a Digital Mentor- An Explorative Study towards Building Digital Citizenship Author(s): Mary Jayanthi Michael and Merlin Depsy Nithiya
10:50-11:10				

Parallel Session 5

Room 1 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	1 December 2021 (Day 2)			
13:20-13:40		148	R. Annie Karunya Bagyam	Title: Peer-Teaching as a Strategy to Augment Synergic Learning Author(s): R. Annie Karunya Bagyam
13:40-13:00		157	Yuliana Tacoh	Title: Developing "deep listening" Spiritual Pedagogy in Online Learning Author(s): Yuliana Tacoh
13:00-13:20				

Room 2 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	1 December 2021 (Day 2)			
13:20-13:40		156	Alfie Q. Arcelo	Title: Online Communication Synchrony: Preference among First Timers in Online Distance Learning Author(s): Dave E. Marcial, Alfie Q. Arcelo, and Fredlie P. Bucog
13:40-13:00		158	Augustina Sulastri	Title: Successful factors of online learning during pandemic Covid-19: Lessons' learned from Indonesia students' experiences Author(s): Augustina Sulastri
13:00-13:20		160	Joko S. Prayudha	Title: Students' Attitudes towards the Use of Animated Video in Online Learning Author(s): Joko S. Prayudha

Room 3 | Session Theme: Online Learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	1 December 2021 (Day 2)			
13:20-13:40		78	Qiu Ping Lim Sylvia Chong Jizhi Li	Title: Online learning, the new teaching and learning norm Author(s): Qiu Ping Lim, Sylvia Chong and Jizhi Li
13:40-13:00		166	Vincentia Ananda Arum Permatasari	Title: Utilization of Video as a Communication Tool in School Reputation Management Activities during the Covid-19 Pandemic Period in Semarang Author(s): Vincentia Ananda Arum Permatasari and Rotumiar Pasaribu
13:00-13:20		99	Bao Zhen Tan Zan Chen	Title: Moving Adult Learning and Higher Education Online Due to COVID-19: Challenges and Opportunities Author(s): Bao Zhen Tan and Zan Chen

Room 4 | Session Theme: Adaptive e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	1 December 2021 (Day 2)			
13:20-13:40		146	Theresia Dwi Hastuti	Title: Adaptive Learning Environments Model for Innovative Educational Author(s): Theresia Dwi Hastuti
13:40-13:00		119	Ng Li Shan	Title: Using Chatbots to Support Asynchronous Online Learning Author(s): Ng Li Shan and Grace Pheang
13:00-13:20		161	Anita Angelina Wibawa	Title: A Qualitative Study on Self-Directed Learning among Adult English Learners Author(s): Anita Angelina Wibawa and Cecilia Titiek Murniati

Room 5 | Session Theme: Assessment of e-learning

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	1 December 2021 (Day 2)			
13:20-13:40		110	Chonilo Saldon	Title: Validating Students' Learning in Pre-Calculus through Virtual Oral Assessment Author(s): Chonilo Saldon
13:40-13:00		133	Shane Alexander Laong	Title: (Re)Designing Meaningful Online Learning Opportunities Author(s): Shane Alexander Laong
13:00-13:20		155	Ronnie Shroff	Title: Measuring Intrinsic and Extrinsic Motivation in a Digital Game-based Learning Context Author(s): Fridolin Ting and Ronnie Shroff

Room 6 | Session Theme: Learning-oriented Technologies

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	1 December 2021 (Day 2)			
13:20-13:40		108	Kwok Lung Jim	Title: AP Sensor: A Physics Experimental App for Flipped Classroom Author(s): Ka Lai Wong, Wang Fai Cheng, Siu Hong Choy, Chi Wah Leung, Chee Leung Mak, and Kwok Lung Jim
13:40-13:00		96	Florence Mei Kuen Tang	Title: Studio-based Learning Approach for Dissection in Anatomy Education to Medical Training: Student Perspectives Author(s): Mei Kuen Tang, Kevin Tl Ho, Sam Hk Poon, Josephine Ws Lau, Y Leung, Austin Lh Chau, Tk So, Yc Fung, Cy Lee and L Yung
13:00-13:20		162	Muhammad Alif R Abdullah Sanimah Hussin	Title: Utilizing Karaoke Videos in Learning Japanese Vocabulary Among Malaysian University Students Author(s): Muhammad Alif R Abdullah and Sanimah Hussin

Room 7 | Session Theme: Tools and Platforms

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	1 December 2021 (Day 2)			
13:20-13:40		141	Arman Santos Maria Ana Quimbo	Title: Assessing Dyscalculic Tendencies Among Children through a Mobile Application Screening Tool Author(s): Arman Santos and Maria Ana Quimbo
13:40-13:00		154	Arne Barcelo	Title: The Application of IT Infrastructure Library (ITIL) Framework in the Academe-Industry Partnership Model in Developing the Immersion and Engagements System of University of Santo Tomas (UST) College of Information and Computing Sciences (CICS) Author(s): Arne Barcelo, Juan Miguel C. Burayag, Mary Joy M. Polinada, Djorge Kristin R. Salgado, and Ivan Joseph U. Salgado
13:00-13:20		124	Vincent Ng	Title: Diversity at Schools Project - Student Learning Analytics Author(s): Vincent Ng, Boris Chan, and Daniel Lai

Room 8 | Session Theme: Social Games

Presentation Time (Jakarta Time, UTC+7)	Day	Paper ID	Presenter(s)	Presentation Title & Authors
12:20-13:20	1 December 2021 (Day 2)			
13:20-13:40		44	Yin Ni, Annie Ng Liang Lin Gia Wen Sim Qian Qian Tng Zi Xuan Tay Pei Pei Tng	Title: Using a Career Card Game to learn about technical and soft skills required for occupations related to the Diploma in Food Science & Nutrition Author(s): Liang Lin, Pei Pei Tng, Qian Qian Tng, Zi Xuan Tay, Gia Wen Sim, Rou Shen Liew, Jayden Ang and Annie Ng
13:40-13:00		100	Chin Yin Hue	Title: The Development of Music-Based Working Memory Mobile Application Author(s): Chin Yin Hue, Aini Marina Ma'Rof, Lip Meng Soo, and Hillary Ng
13:00-13:20		72	Martin Lau Theresa Kwong	Title: A Gamified Approach to Improving Students' Online Collaborative Skills and Broadening their Awareness of Sustainable Development Author(s): Martin Lau and Theresa Kwong

FOREWORD

The 16th eLearning Forum Asia 2021 was a collaborative event organized by Soegijapranata Catholic University, E-learning Forum Asia, and the United Board. The conference is usually held in different institutions within Asia regions. In 2021, eLearning Forum Asia took place in Soegijapranata Catholic University, Semarang, Indonesia. The conference theme, Augmenting the Virtual Environment: Technology – Innovation – Humanity, was to invite researchers, technologists, educators, and students to share virtual experiences, showcase teaching innovations, share insights and ideas on balancing teacher and students' needs and teaching goals.

The COVID-19 pandemic, and the resulting lockdowns in Indonesia and throughout the world, has affected the mobility of students in unprecedented ways. During the pandemic, students have been largely lack of personal experience to visit campuses in-person, to interact with their classmates and lecturers, or to receive academic, technical, and support services on campus. Technological advancement, which have allowed educators to quickly modify and transfer in-person courses to online course designs, have been less successful in facilitating meaningful engagement with students. Parallel to these challenges, many colleges and universities have moved to quickly adopt institution-wide educational continuity plans to streamline the educational delivery process. These plans often include the acquisition and integration of commercially available large-scale learner management platforms, the adopt of which has spurred a series of ethical questions as to the benefit of such systems to institutions and students versus the benefit to technology corporations. This conference serves as a reflection, an opportunity to take stock of the rapid technological and educational movements of the past year and to consider the long-term benefits and challenges to students and institutions of learning.

In this year eLearning Forum Asia, we received 166 conference proposals on related topics and 149 parallel presentations were delivered online. This proceeding is a compilation of 13 selected papers from the concurrent discussion sessions. The committee hopes that this conference will serve as an excellent reference book for technologists or educational technologies enthusiasts. We believe that the insights, best practices, and experiences shared in the papers will be an impetus to stimulate further study and research in this line of inquiry.

We offer our sincere gratitude for the authors who submitted their work. We also thank the E-learning Forum Asia board members, and the United Board, and all the committee members in Soegijapranata Catholic University, and everyone else who dedicated their time and invaluable ideas to make the conference successful.

TABLE OF CONTENTS

Steering Committee	iii
Organizing Committee	iv
Program Schedule	v
List of Parallel Session	x
Forword	xxxiv
Table of contents	xxxv

Adaptive e-Learning

Learning Foreign Language Using Mobile Applications In Enhancing Communication Fluency Among Young Professionals *De Leon, Phill Andrew J. Sy, Maria Christina N. Jimenez, Princess Khayle Pelayo, Mikhaela Cassandra Nacario, Princess Nica Carino, Kendrel May Reyes, Princess Nadine Gamuac, Cyniza Jane, Espinola, John Christian*	2
3 Low-fidelity Buyer Seller Housing Simulations can Encourage Authentic Learning Experiences *WONG Wai Chung Gary, WONG Pui Yun Paulina, SHEN Jiandong, Daniel*	30
Diffusion Innovation in Online Learning and Practical Studies in Event Organizer Management Course During the Covid-19 Pandemic *Lenny Setyowati*	38
8 Projecting the Impact of Integrated Service-Learning Projects on History Graduates of Lady Doak College through Online Learning Approach *T. Durga Devi, B. Aashika, N. Kavipriya*	48
Adaptive E-Learning – A Comparative Study *Dr. A.K. Shafreen Banu, S. Mohamed Aslam, X. Antony Julian*	62

Assessment of e-learning

Teachers' Language Competence Segmentation using K-means Algorithm *Rosita Herawati, Heny Hartono, Cecilia Titiek Murniati*	72

Learning oriented devices and networks

5 A Prototype of Wireless Portable Learning Management System to Support E-learning in Remote Area *Vittalis Ayu, Zefanya Devendra Putri Ngganggus, Albertus Satrio Bayuaji*	78

Learning-oriented Technologies

Cooperative Learning in Physical Education through the Use of Fitness Apps 86

Georgina V. Kusano

Utilizing Karaoke Videos in Learning Japanese Vocabulary Among Malaysian University Students 99

Muhammad Alif Redzuan Abdullah, Sanimah Hussin

360-Degree Panoramic Virtual Site Visit for Construction Technology Education 108

Junyu CHEN, Wai Kei KONG, Minkoo KIM, JoonOh SEO, Hung-Lin CHI, Michael C.H. YAM

Online Learning

Barriers and Levels of Motivation in Online Learning of Student Nurses in a Private University 122

Limsiaco, Christel Dawn C., Juele, Bruce Raymond L, Leong, Jade Alexandra G. Licera, Colleen Kate D., Macuja, Kryst Ian O., Magallon, Andrea Jean B., Magbanua, Jaehazle C., Delariarte, Rosana Grace B.

The Acceptance of Online Inverted Classroom Model and Peer Assisted Learning Among Ophthalmology Graduate Students 165

Pear F. Pongsachareonnont, Disorn Suwajanakorn, Parima Hirunwiwatkul, Wijak Kongwattananon, Anita Manassakorn, Kittisak Kulvichit, Wasee Tulvatana

Roots Program in Indonesia: Transferring the Module of Knowledge and Activities from Offline to Online during Pandemic Covid-19 172

Rika Saraswati

Effects of Instructional Strategies on Enhancing Student Learning 185

Edmond WM LAM, Daniel WM CHAN, Jessie KC HO

A Qualitative Analysis on Students' Perspectives towards Online Learning 197

Maheswaran A, L Muniandy

Online Laboratory Work for Herbal Processing 208

Victoria Kristina Ananingsih

Utilization of Video as a Communication Tool in School Reputation Management Activities during the Covid-19 Pandemic Period in Semarang 212

Vincentia Ananda Arum Permatasari Rotumiar Pasaribu

Unika SOEGIJAPRANATA
Talenta pro patria et humanitate

Proceeding
eLearning Forum Asia 2021

Augmenting the Virtual Environment: Technology | Innovation | Humanity

Semarang, 30 November - 1 December 2021

PeLS Philippine eLearning Society · SYMPLICITY · UNITED BOARD · eLearning Forum Asia

Adaptive e-Learning

Editor:
Dr. Heny Hartono, SS, M.Pd
Cecilia Titiek Murniati, PhD

Website:
https://www.elfasia.org/2021/

Soegijapranata Catholic University

"LEARNING FOREIGN LANGUAGE USING MOBILE APPLICATION IN ENHACING COMMUNCIATION FLUENCY AMONG YOUNG PROFESSIONALS"

[1]De Leon, [1]Phill Andrew J. Sy, [1]Maria Christina N. Jimenez, [1]Princess Khayle Pelayo, [1]Mikhaela Cassandra Nacario, [1]Princess Nica Carino, [1]Kendrel May Reyes, [1]Princess Nadine Gamuac, [1]Cyniza Jane [2]Espinola, John Christian

[1]*Student Researchers,* Lyceum of the Philippines University

[2]Faculty Researcher/ Adviser, Lyceum of the Philippines University

Abstract: The acquisition of learning different foreign languages plays a vital role in people's lives, as it is not only for entertainment and leisure purposes, but also it has become one of the main important edge in one's education and professions. This study aimed to measure how effective these mobile applications in terms of its Gamification, Ease of Use, and Learning Enhancing factors in learning foreign languages and its correlation to enhance one's communication fluency, specifically with their Pronunciation and Vocabulary factors. 400 Filipino Young Professional users with the ages of 20 to 35 years old were chosen to be the respondents of the said study. The instrumentation used was adapted from Schroeder (2016) and Gafni, et al. (2017) to gather the desired data. With the applications stated in this study, "Google Translate App" was that most used application with 56.75% of responses followed by Duolingo App with 42.5%, "HelloTalk App" of 41.25%, "Others" with 21.5%, "Memrise App" of 6%, and lastly, the "Busuu App" of 3.75%. A significant relationship between the Use of Mobile Application and Communication Fluency was found ($p<.000$) using Chi- Square. The Pronunciation and Vocabulary under Communication Fluency resulted to have a significant relationship with the Gamification, Ease of Use, and Learning Enhancing under Mobile Application variable ($p<.000$). Furthermore, Communication Fluency and Mobile Application resulted to have a Significant Positive Moderate High Correlation with each other (r-value=.617). These prove that the use of mobile application can effectively enhance the learners' communication fluency in learning foreign language.

Keywords: Mobile Applications, Communication Fluency, Young Professionals, Foreign Language

INTRODUCTION

Learning foreign language has become a must nowadays, as it plays an

important role in opening new doors, especially in the corporate world. It has also became a vital skill one must have in applying for job opportunities around the world (Alicia, 2017), as it gives you an edge over other applicants. Language also became the identification of one's nationality and the bridge to connect with other people because it has a crucial part in completing one's identity and personal development as part of a society (Zalmay, 2017).

This research, on the other hand, will modernize the process of having Quality Education, globally, under one of the Sustainable Development Goals of the United Nations in the aspect of enhancing one's communication fluency. This study also aims to maximize the use of technological advancements provided which associates with the mission of Ambisyon Natin 2040, particularly in the "Advance Technological Adaption". Furthermore, this study would also incorporate *Republic Act No. 10844*, otherwise known as the "*Department of Information And Communications Technology Act of 2015*" with its aim on giving importance and promoting Information and Communication Technology (ICT) in the Philippines, since the researchers' main goal on conducting this paper is to mobilize the quality education for the language learners. This is also to ensure the enhancement of the level of Education, Cultures and Tradition, and the National Identity of each country with the evolving age of ICT.

In addition, the usage of mobile applications has increased in this time of a pandemic and gave an impact to all that saved the series of lockdowns (Zymr, 2020). Due to the sudden outbreak, virtual classes became their solution in continuing education as the new normal which associates in this study that mobilizes language learning through the use of mobile applications.

Issues have also been published on the internet regarding the reasons that affect one's interest in learning foreign languages, and one of these is the lack of opportunity (Mckenzie, 2017). It was reported that there are a high number of Filipinos who are incapable of enrolling themselves in formal foreign language classes and accessing the internet. Some reports also stated that Filipinos have a low reading comprehension rating that might affect one's capability of learning different languages (ABS-CBN News, 2015). Some learners even experience embarrassment and impartiality because of the opinions of other people that contributes to the reason to lose their interest in such acquisition (Ancheta, 2016).

In local areas in the Philippines, providing the learners' knowledge in learning foreign language, be it with Filipinos or other nationalities, became one of their priorities. Universities now offer various foreign languages courses such as Nippongo, French, Bahasa, Portuguese, Italian, German, and even Tagalog/Filipino courses for foreign students like in the Lyceum of the Philippines University, Ateneo De Manila and other more. With the effort and aim that these universities set for language learners, this study will be significant to language learners for them to have a chance to learn foreign language, as part of their learning styles, in the use of mobile applications and enhancing their communication fluency.

Theoretical Framework

The following theories were published by different researchers, theorists, and philosophers on acquiring learning adaptability of oneself. These theories have a potential to be part of this study because these showcased different opinions and ideas about various learning styles of a specific learner. The way of learning foreign language that was considered difficult for most learners (LUCA, 2020) was also tackled in these chosen theories.

Burrhus Frederic Skinner's Theory of Behaviorism was about the response behaviors in learning which were acquired through a process called "Operant Conditioning" or the interaction with one's environment. It refers to the response behavior of learners toward the consequences while learning, that the researchers can relate to the language learners (McLeod, 2020). For learners, a reinforcement and punishment while learning might result to decrease or increase in their behavior. The outcome depended

on the positive and negative approach of operant conditioning toward learners.

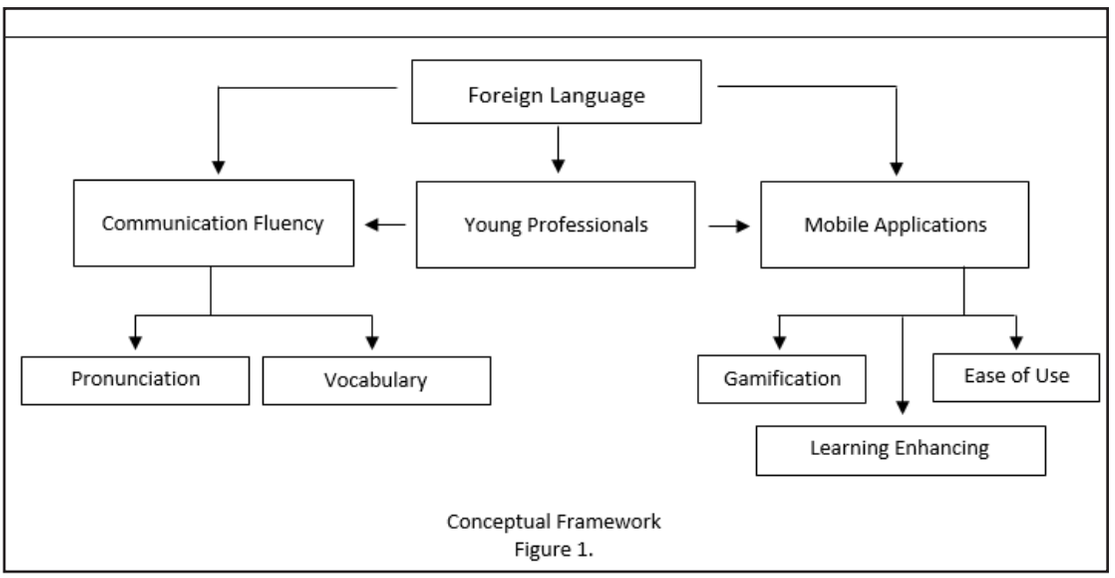
Stephen D. Krashen also proposed a theory entitled "Krashen's Monitor Model" (Ansari 2015). According to him, second language acquisition comprised of five hypotheses: *Acquisition- Learning, Monitor, Input, Affective Filter,* and *Natural Order*. In acquisition-learning, Krashen stated that learning foreign language could be a system of 'acquire' wherein it is similar on how learners learned their mother tongue which required interaction of natural communication and in the system of 'learning'. The monitor hypothesis is limited in the second language performance since it only aims to correct deviations to have a more polished pronunciation and vocabulary. The input and natural order hypotheses, on the other hand, focuses more on the "acquisition". According to this hypothesis, learning a second language progress with the "natural order" in which learners will "input" what they had learned and improve it through the use of interaction and continuous practice. Lastly, affective filter refers to the attitude and approach of learners toward learning a second language.

Tabula Rasa, on the other hand, was proposed by John Locke which stated that individuals are born without any knowledge like a blank sheet paper. Through experience and interaction, the knowledge will slowly develop. According to this theory, knowledge can be gained through internal experience which refers to the function of our minds and external experience which refers to the interaction in the real world.

Based to Noam Chomsky's theory entitled "Theory of Language Development (Universal Grammar)," individuals were born with the ability to adopt a new language. He stated that the brain contains set of rules in organizing a language and it is called "Universal Grammar". This theory suggested that language learners develop their skills similar to a child. They start to form sounds to syllables and words to sentences just like how they learned their first language when they were a child (Theodore, 2020).

The said theories will serve as a guide in contextualizing language learners' learning styles and behaviors. It associates to the existing knowledge and provides insight regarding learning strategies that will help the researchers' approach on this study. Through this, they will be able to assess how they would effectively advocate this study based on the learners' perspectives. Thus, it accentuates necessity that needs to be examined thoroughly that might differ the results of the data such as the attitude of learners toward learning depending on their technique and process.

37 Conceptual Framework



Conceptual Framework
Figure 1.

The Conceptual Framework above showcases the relationships of the variables that influence the collection of data. It was also described as the simplest way of asserting remedies to the problem that this study has defined (Akintoye, 2015).

As shown above, Foreign Language is the main variable that covers all other sub-factors related to the study. Moreover, the said Likert Scale survey would consist of three parts: the first part is designed to identify the Demographic Profile of the researchers' chosen respondents, the Young Professionals. The second part is used to measure the "Communication Fluency" of the target respondents which includes the Vocabulary and Pronunciation factors that emphasize the needed skills on achieving language proficiency. The third part focuses on the "Use of Mobile Applications" for the researchers to identify and see its effectiveness. This part would involve the Gamification, Ease of Use, and Learning Enhancing of the respondents that would cover the views, opinions, and experiences on how they navigate and acquire new skills with their chosen language applications. These are also vital for this study as these measure how important mobile application, or the technology is for the improvement of one's education (Siriram, 2015).

With the use of the said Conceptual Framework, the researchers would be able to gather data as the foundation of this study. With that, it would help for the researchers to have the basis of the results and conclusions of the study.

Statement of the Problem

As the world becoming more interconnected to each countries, people are now getting interested in learning foreign language (Sodhi, 2020). However, the researchers of this study noticed that several learners are having a hard time learning it. With that, the primary purpose of this study is to promote the effective use of mobile applications in learning foreign language while enhancing communication fluency. Specifically, this study aims to answer the following questions:

1. What is the Demographic Profile of the respondents based on their:
   a. Age
   b. Sex
   c. Mobile Applications used to learn Foreign Language
   d. Length of Time using the Application
   e. Foreign Language learning using Application
   f. Enrolled in a Formal Foreign Language Class
   g. Family/ Relative who can speak the foreign language being learned
   h. Reasons for learning Foreign Language
2. What is the level of Communication Fluency of the young professional who uses mobile applications in learning foreign language?
3. What is the assessment on the level of effectiveness on the use of mobile applications of the young professional in learning foreign language?
4. What is the relationship between the level of communication fluency of the young professionals and the use of mobile applications in learning foreign language?

Hypothesis

There is no significant relationship between the level of communication fluency of the young professionals and the use of mobile applications in learning foreign language.

Significance of the Study

This study is significant for it aims to widen the learners' knowledge on learning foreign language in maximizing the use of mobile applications in enhancing their communication fluency. This study is also significant to the following:

Young Professionals. Those with the ages of 20 up to 35 years old are considered to be beneficiaries of this study not only because they are the chosen respondents to conduct this research but also they are the one that mostly have the opportunity to have an access to language courses/classes.

Educational Institutions. The researchers will provide information about how mobilizing resources and innovative projects would help the learners have a proper education regarding on learning foreign languages with communication fluency.

Mobile Application Owners. The usage of different mobile applications is what this study is promoting, with that, the mobile application owners would benefit to this. As the researchers will conduct this study, potential mobile applications that provide assistance on learning foreign language and enhancing communication fluency would be mentioned in this study.

Future Language Experts. They will have a chance to learn foreign language using mobile applications in enhancing their communication fluency and they would also be enlightened with the views as well as opinions of the previous young professionals in using mobile applications.

Future Researchers. This study can be used as their references if they will be conducting researches related to this topic.

Scope and Delimitation

The general intent of this study is to identify and assess the effectiveness of modernizing language learning style with the use of mobile applications to the Young Professionals. The researchers will only measure the usage of mobile applications and its efficiency in enhancing one's communication fluency in learning foreign language. The study will also cover how the use of these applications affect the factors of enhancing one's communication fluency. Laslty, only those Filipino Young Professionals with the ages of 20-35 years old and are currently using such apps will only be the respondents this study will focus on.

However, the researchers will not focus on the mixed-blooded young professionals who only want to enhance their second language fluency. The challenges such as technical difficulties and the situations of the chosen respondents encountered while using mobile applications will also not be covered in the said study. Additionally, this study will not be focusing on the specific foreign languages because these languages have its own different difficulty and intensity to learn, thus may affect the results of the study.

Definition of Terms

This part gives the definition of the words as conceptually and operationally used in the study.

- Young Professionals
  - People whose age ranges between 20-35 years old. A recent graduate person who has a clear future in mind and the one who has a goal to have a good career that can help them be financially stable.
  - In this research, these respondents are going to be part on gathering the data needed to finish the study.
- Communication Fluency
  - The way of our speaking should come naturally without pausing, repeating, and stopping for extended periods to think of what to say. It is a skill that we can learn from reading and listening to movies or foreign people.
  - Communication fluency refers, on this research, will be based on the sub-factors of "Pronunciation" and "Vocabulary" only.
- Mobile Applications
  - It is an app or online app that can be installed in phones, tablets, and laptops.
  - Mobile Applications that provide foreign language learning are the only applications that will be covered in this research with sub-factors of "Gamification," "Ease of Use," and "Learning Enhancing".
- Foreign Language
  - It is a language that is different or is not considered as a person's mother tongue. This are
  - languages that a person does not commonly hear from his or her country.
  - This will be used in our research by identifying different languages that our respondents are learning with their usage of mobile applications.
- Language Proficiency
  - It is the ability of a person to speak a certain language in which the message is clear and profound.
  - This will be used under the communication fluency as it showcases the level of proficiency, fluency and accuracy of a young professional in learning different language.

40

METHODOLOGY

Research Design

The Descriptive Research Design was used in the study that defines a phenomenon and its physical characteristics through observation and survey tools in gathering data. This would identify the answer to the "what" question of the subject that is why it will help the researchers clearly recognize the view of respondents (Akintoye, 2018). It would be an effective way for the respondents to describe their experiences in using Mobile Applications and will perceived the finest to accomplish the purposes of this study.

Moreover, a Nonexperimental Correlational Approach was also used in this study as it aims to identify the relationships of two variable found in a research subject (Kowalczyk, 2013). This would be used to correlate the study's two main variable namely "Communication Fluency" and "Mobile Application" to know how the respondents would response to this alternative learning style.

Research Locale

The researchers have decided to have a study about the use of mobile application as an effective way to aid the learners' struggles in studying of foreign languages. This study was conducted in a virtual or online setting because of the restrictions brought by the COVID-19 pandemic that started last January, 2020. They will be distributing a set of survey questionnaires to the selected respondents through Microsoft Forms.

In data collection, the researchers joined different application groups that provide foreign language learning to interact with their respondents. They decided to include some applications in this paper, especially in the questionnaire, to have a basis on the medium their respondents are utilizing. First is the most common translation app Google Translate App, together with the Duolingo App, HelloTalk App, Memrise App, and Busuu App which were reported as part of the TOP 8 most popular and used mobile applications in learning foreign language (Sandy Writtenhouse, 2019). However, the respondents are not required to only choose one app from the said five applications and added the "Others (Pls. Specify)" item in one of the choices since they have the freedom to use any learning applications that would be useful in language learning. The table below showcases the said mobile language learning applications.

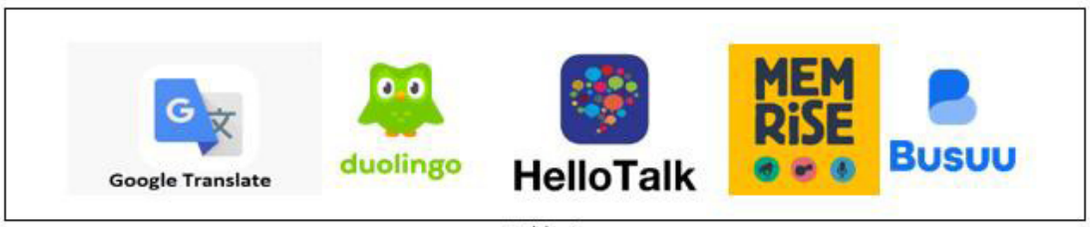
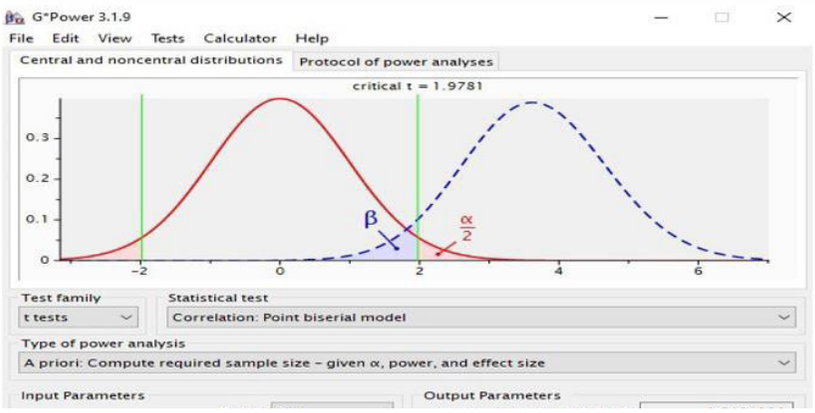


Table 1.

Sampling Technique

In this study, Purposive Sampling was used in relation with the number of populations since the researchers selected a particular target to gather data. 400 Young Professionals were targeted and chosen to be part of this study as they have the experience of engaging with foreign language courses and some are in need of foreign language learning as part of their professions.

The researchers also used SPSS Treatment to interpret the respondents' answers and will be organized in a systematic table to present the results. The G-Power, an analysis software, was also utilized in reaching with the number of respondents needed for this research. The Image 1 below showcases the computations requiring the researchers to gather at least 150 respondents to have the expected results for the aim of the study.



Instrumentation

To obtain the data needed for the study, the instrumentation that will be used is a Survey Questionnaire Form, with the Likert Scale response, which divided into three parts: The Demographic Profile, Communication Fluency, and Use of Mobile Applications. To elaborate more, the first part was made to collect some information regarding the population's profile and to identify the respondent's background on learning foreign languages.

The second part focuses on the Communication Fluency which includes the Vocabulary and Pronunciation sub-factors of the respondents that was adapted from existing research entitled "The Development and Validation of the Academic Spoken English Survey (ASESS) for Non-native English Graduate Students" by Rui M. Schroeder (2016) that aims to assess the skills of non-native English graduate students - the researchers modified some words on the statements to link it to this study.

Conversely, the last part solely focuses on the Use of Mobile Applications of the respondents. Gamification, Ease of Use, and Learning Enhancing factors were covered in this part, which were also adapted from an existing research written by Ruti Gafni, et al., (2017), which talks about the influences of the mobile application to attitude and behavior of oneself on learning foreign language. However, the statements found on each sub-factors were still constructed by the researchers themselves because of the need of having accurate and definite statements that their respondents can acquire with.

The researchers will be having a Validation Process in which they will be asking their chosen Expert Subject Teachers to examine and study the grammatical structures and content appropriateness of the said instrumentation. They have also used the instrumentation for the Pilot Testing of the survey to the Young Professionals for the initial survey distribution to validate the effectiveness of the questionnaire. After administering it, the researchers have decided to undergo Reliability Test for them to make sure that the responses to instrumentation are valid. Using Cronbach Alpha, the computed valued of .914 shows that the survey instrumentation used for the data gathering is Excellent that can be of help on achieving viable data.

Data Gathering Procedure

After series of meetings and brainstorming, the topic entitled "Learning Foreign Language Using Mobile Application in Enhancing Communication Fluency among Young Professional" was finally formulated. Designating of different parts on identifying the Background of the Study in Chapter 1, Review Related Literature for Chapter 2, and the Methodology in Chapter 3, were the next steps the researchers did. Each member of the team was assigned with different tasks to be able to have an equal contribution in finishing the study. After numerous revisions, and consultations, the researchers then now started planning for the collection of data. This is where the making of survey questionnaire begins.

In designing the questionnaire for the respondents, the survey was made using relevant statements constructed and adopted from similar researches concerning the said topic. Since the current situation will not allow the researchers to gather data face-to-face, the survey was instead made through an online platform called Microsoft Form. The Likert-Scale was used to find out whether the respondents will agree or disagree to the given statements. The researchers have also joined different mobile foreign language applications and social media groups to find 30 Young Professionals only for their pilot testing. Before administering the questionnaire, the researchers made sure that all information provided by the respondent would be kept confidential. After that, Microsoft Forms Survey were then distributed to the respondents. The data gathered from them would then be analyzed and interpreted. Upon finishing several tasks, the researchers were able to finish their pilot testing and now can proceed to the next step.

Statistical Treatment

The researchers used some statistical tools to get the accurate results for the data gathered from their respondents. The following statistical tools that the researchers used were:

- Frequency

  This treatment will be used on gathering the data on the first part of the questionnaire - Demographic Profile, to have a more comprehensible data after organizing each responses to get the needed results, and will be viewed with their quantity and percentage forms.

- Mean

  The researchers would be using this treatment to recognize and interpret the average scores of every answers of the respondents on each of the research's variables. For their reference, they will be using the tables below:

Verbal Description: Mean	
Poor	1 – 1.8
Fair	1.81 – 2.6
Good	2.61 – 3.4
Very Good	3.41 – 4.2
Excellent	4.2 - 5

Verbal Description: Communication Fluency	
Poor	1 – 1.8
Fair	1.81 – 2.6
Good	2.61 – 3.4
Very Good	3.41 – 4.2
Excellent	4.2 - 5

Verbal Description: Use of Mobile Application	
Not at all Effective	1 – 1.8
Slightly Effective	1.81 – 2.6
Moderately Effective	2.61 – 3.4
Very Effective	3.41 – 4.2
Extremely Effective	4.2 - 5

- Pearson Moment Correlation

  The researchers used this to correlate the answers of the respondents to their two main variables namely the "Communication Fluency" and "Mobile Application," as well as the other sub-factors found on the study. The table below contains the interpretation of each results:

Value of r	Interpretation
Between ±0.80 to ±0.99	High Correlation
Between ±0.60 to ±0.79	Moderate High Correlation
Between ±0.40 to ±0.59	Moderate Correlation
Between ±0.20 to ±0.39	Low Correlation
Between ±0.01 to ±0.19	Negligible Correlation

- Chi-Square Test

  This test was used by the researchers to correlate the categorized variables given after using the Pearson Moment Correlation. With the use of the test "Goodness of fit," to compare and interpret data from the population, the researchers will be able to interpret how the responses of their chosen respondent relate with the research variables together with the "Communication Fluency" and "Mobile Application." The table below showcases the interpretation of the p-value that researchers would be getting after using the Pearson Moment Correlation:

P-Value	Interpretation
p-value > .05	No Significance Relationship
p-value < .05	Significance Relationship

RESULTS AND DISCUSSION

SOP#1: *Demographic Profile*

The researchers have successfully gathered four hundred (400) responses from the Young Professionals who use different mobile applications on enhancing their communication fluencies in learning foreign languages. 307 (76.8%) from the total number of respondents with the ages of 20- 25 years old ranked first followed by the ages of 26-30 years old of 62 (15.5%) and 31 (7.8%) of 31- 35 years old. There is also a total of 285 (71.3%) Female and 115 (28.7%) Male respondents that participated. In terms of the mobile applications, "Google Translate App" (56.75%) was the most used application of the respondents which then followed by the "Doulingo App" (42.5%), "HelloTalk App" (41.25%), "Others" (21.5%), "Memrise App" (6%) and the "Busuu App" (3.75%). The "Below 1-hour" choice garnered 210 (52.5%) responses based on the number of hours consumed on using applications. The results also showed that with the several foreign languages that the respondents can learn with the use of mobile applications, Korean/Hangul topped first in the survey – followed by English, Japanese/Nihongo, Spanish, and Chinese/Mandarin. Moreover, there are 314 (78.5%) "No" responses resulted regarding the question "Are you enrolled in a formal foreign language class?" Most of the Young Professionals also responded a "Yes" response with a total of 233 (58.3%) about the question "Do you have family/ relative who can speak any foreign language?" Lastly, with the reason given by the researchers based with why the respondents chose to learn foreign languages, "Education" of 54.75% got the major response – "Entertainment" (55.25%), "Profession" (37.5%), and "Others" (12.75%) followed it.

SOP#2: *Level of Communication Fluency*

This part showcases the "Level of the Young Professionals' Communication Fluency" in learning foreign language in which resulted to the overall results of 49.0% that interpreted as "Very Good." This means that the respondents' usage of mobile applications gave them effective results. Additionally, the Pronunciation have resulted to have 44.0% that was also interpreted as "Very Good" which confirms that the respondents are determined to pronounce the word as clear as possible to have an effective conversation with others. The Vocabulary sub-factor got the highest frequency rate of 57.0% which indicated as "Excellent," wherein they explore learning more new vocabularies and terminologies of their chosen language. With this, the researchers have interpreted that these results are vital on finishing this research like what F Rosell-Aguilar (2018) confirmed – and to show that mobile applications are effective to improve one's communication fluency. Moreover, it was also said that utilizing mobile application in studying English language help the students improve their skills on grammatical and pronunciation aspects (Krivoruchko, 2015). In such thought, using mobile applications plays an effective huge role in enhancing one's communication fluency, specifically with their pronunciations and vocabularies.

Meanwhile, the item "I pay attention to my pronunciation and try to sound as clear as possible" highest weighted mean results of 4.33. It shows that the respondents are trying their best to pronounce the word they are learning, since it supports Nurul Ain Chua (2020)'s study in which there are some oral activities that can improve the one's pronunciation to sound clear. With this, mobile applications could really be an alternative tool to improve the respondents' pronunciation ability (Wongsuriya, 2020).

The second item "Before I speak in different language, I make sure that the message I want to convey is clear and precise" resulted a weighted mean of 4.28, which interprets as that the chosen respondents are

careful in making their message clear in having conversation. This also explains that mobile applications can give an extensive assistance on enhancing one's language skills, specifically with vocabulary and pronunciation, with also the help of interaction with other language learners (Costa & Han, 2017) (Palalas, 2011).

"After communicating using a different language, I reflect on my vocabulary and think about how to improve it" ensued the weighted mean of 4.22. It proves that the learners search for ways to improve their vocabulary through memorizing and analyzing (Cho Min Sung et al., 2020). The research of Sariani et al., (2020) also concluded that mobile applications such as the "Vocabulary Size test" can be a helpful tool in familiarizing different words to learn language. In that sense, the Young Professionals can now fully grasp such vocabularies by using mobile applications in order to master their chosen foreign language.

The item "I try to unlock unfamiliar words from the language I want to learn so I can get used to it immediately" obtained a weighted mean of 4.19 in which the respondents expand more their knowledge to familiarize and understand every terms, phrases, and words of their desired languages. Moreover, the results clearly showcase that the learners are willing to explore more of their chosen languages and Jakopec (2016) and Chen, Xiaojun (2016) have both stated that mobile application do contribute on developing one's language skills, specifically with effective and entertaining activities.

Lastly, "I deliberately try to expand my vocabulary in different language" resulted a weighted mean of 4.18. Hence, the respondents are focused with their vocabulary aspects that widen their knowledge, with the use of mobile applications (Aziz, 2018). With the help of the step-by-step practices provided by these applications like Duolingo App, it will help the learners to master and expand their knowledge on the languages they chose (Nushi, Musa & Mohammad Eqbali, Hosein 2017).

SOP#3: *Use of Mobile Applications*

This covers the perspective of the learners in using mobile applications to enhance their communication fluency in learning foreign language. Researchers got a result of 52.0% "Very Effective" that indicate as Young Professionals who use technology-based learning approaches gain a competence resulting in a good outcome in the development of their educational skills. In Gamification that obtained 40.3% frequency, both "Very Effective" and "Extremely Effective" in which Young Professionals want to widen their horizon through entertainment which influences their learning. Ease of Use results of "Very Effective" (43.3%) clearly states that Young Professionals feel more at ease using various mobile applications to improve their communication fluency and educational opportunities. Learning Enhancing, with 48.3% "Very Effective", which Young Professionals find it more convenient to learn at their own speed, also to improve to their fluencies, when they use mobile applications. These conclude that using mobile applications to acquire foreign language learning is effective in terms of entertainment and ease of use. It relates to how Kuimova et al., (2018) stated that "Learning using method of technologies gives positive outcome that develops their responsibility, motivation, and time management as they acquire foreign language." Gangaiamaran and Pasuphati (2017) also said that Mobile-Assisted-Language-Learning gives easy approach for every learner without the limitations of both place and time, which in this study, enhance one's development of learning foreign language.

With the highest weighted mean 4.20 "I feel motivated to learn when it is entertaining", this result relates to Liu & Zhang's study (2012) about how interacting with other user has a great impact in learning environment. With that, entertainment and socializing with others while studying can motivate and help some learners bolstered their desire to learn foreign language more.

The researchers also got 4.15 results regarding to "Mobile applications enhance the flexibility to learners in learning at their own pace." This explains that mobile application encourage learners to

develop their language skills through a step-by-step process and instructional designs (Nushi & Eqbali, 2017) (Chen, 2016). This enables them to better experience learning languages with their own ways and strategies and be able to enhance their skills.

4.11 then resulted to "The use of mobile applications allows me to personalize my learning depending on how I will be able to understand the lessons and topics" item. With this, mobile application can potentially help the learners improve their personal skills in learning languages because of the academic disciplines these advancements provide (Kuimova et al., 2018) (Stockwell & Hubbard, 2013).

"The navigation of mobile application I used in learning is fast and easy to use" ensued a 4.04 weighted mean. This explains that such learning applications are being comfortably and flexibly utilized, and may also consider as teaching aids that give accurate information. This can also concludes that multimedia platform was viewed as teaching tools that could assist educators in disseminating knowledge (Sung et al., 2020) (Kukulska-hulme et al., 2011). Therefore, the learning styles from these applications can help the learners to fully master foreign languages and be able to fully understand its use and content.

The lowest weighted mean of 4.01 "I am more active and interested in learning which includes fun activities" showed that the respondents choose those with fun activities that encourage them to specialize and enjoy their foreign language learning. This also explains that learners choose to interact with other users and participate in groups through online learning that include variety of events and fun activities. (Liu & Zhang's, 2012) (Kyria et al., 2015).

SOP#4: *The relationship between the level of Communication Fluency and the Use of Mobile Application*

A. Chi-Square – Likelihood Ratio

The p<.000 manifests a "*Significant Relationship*" with the Communication fluency and Use of Mobile Application. For a more distinct explanation, it indicates that the ability of Young Professionals in enhancing their communication fluency reflects with how they engage more with mobile language learning applications. The said result also associates with the level of communication of the Young Professionals with their usage of mobile applications. The use of mobile applications in facilitating learning strategies enable learners to engage in experiential and situated learning that increases students' motivation in using this medium (Gomez et al., 2013). Mobile learning increases the interaction between students and lecturers due to its certain technological advancements for education that, in the case of this study, enhances the learners' language fluency (Cho et al, 2020).

The p<.000 shows that there is a "*Significant Relationship*" between the Pronunciation of the respondents and the Gamification of mobile applications. The results indicated that the Young Professionals were able to be attentive on their pronunciation factor with the entertaining activities that the mobile applications provide. Gamification stimulates motivation and performance that enable learners to enhance their learning experiences with enjoyment and pleasure (Simòes et al., 2012) (Treiblmaeir & Putz., 2020). Results also showed that with the great experiences that gamification provides, the respondents' attention and focus on enhancing their communication fluency were affected with the usage of mobile applications.

The p<.000 ensued that there is a "*Significant Relationship*" with the respondents' Pronunciations skills and the Ease of Use of these applications. The result conveys that the more these mobile applications are used smoothly by Young Professionals, the more they have the capability to enhance their pronunciation willingly. Learners have a higher perception in using mobile-assisted-language-learning-applications (MALL) since it provides a more collaborative and ubiquitous learning (Gafni et al., 2017). These provide a suitable learning environment that adjusts with how their personal learning styles work

and enables them to fully understand the navigation of these applications easily, especially based on their preferences and rhythm (Liu & Zhang, 2021).

The p<.000 appeared to have a "*Significant Relationship*" with the Pronunciation factor of the chosen respondents and the Learning Enhancing factor from these mobile applications. Results showed that the lessons being provided affects the enhancement of the respondents' pronunciation. Thus, the more they receive suitable implementations of activities, the more their skills are being enhance. Mobile applications encompass features that provided a wide-range and adjustable teaching methods and learning models that enhances one's learning processes (Wei et al., 2019). It also allows its users to implement an improved personalized learning and gain knowledge similar to traditional classes (Morales et al., 2015).

The p<.000 resulted that there is a "*Significant Relationship*" with the Vocabulary of the chosen respondents and the entertainment that Gamifications provide. The result conveys that with the entertaining activities these mobile applications provide, Young Professionals became more willing to practice their vocabulary in which enables them to have their own personal experiences that develop their skills through various activities. Gamification provides an emotional and social influence on learners that motivates them to enjoy and be active in utilizing these applications (Dominguez et al., 2013). It also builds the competitive characteristics of learners which empowers them to perform well and better improve their participation in activities (Zainuddin et al., 2020).

The p<.000 showed a "*Significant Relationship*" with the Vocabulary factor of Young Professionals and the Ease of Use factor with their navigation of the mobile language learning application. The result indicates that the more the learners are comfortable in using these applications, the more they enhance their fluency. Mobile-assisted-language-learning-applications allow learners to utilize learning tools to provide more comprehensible and convenient learning experiences that enable them to explore more (Azar & Nasiri., 2014) (Krivoruchko et al., 2015). The results also indicated that these applications allow learners to acquire suitable learning styles that empowers them to have more capabilities on navigating such applications easily and through that, their skills would also begin to enhance.

The p<.000 ensued a "*Significant Relationship*" with the Vocabulary of the respondents and the Learning Enhancing factor of the mobile applications. This result shows that the respondents' vocabulary factor was enhanced and made them found a strong and clear understanding of the topics these applications have provided. Learners' perception on learning with the use of various mobile applications supports their collaborative learning environments and provides opportunities to scrutinize ideas (Willemse et al., 2019). The result also manifests that with the features of these applications, learners are interested to explore more with different vocabularies and other points of learning. Hence, it empowers them to learn in a more enjoyable way (Agca & Özdemir, 2013).

B. Pearson Moment Correlation

The r-value .617 shows that there is "*Significant Positive Moderate High Correlation*" between Communication Fluency and Use of Mobile Application. It simply means that as the respondents engage more with the use of mobile application, the more they enhance their communication fluency. Learners' fluency of their chosen language reflects on how much they have learned from using mobile applications (Yungwei et al., 2018). Learning foreign language has become useful and essential nowadays. Through these technological advancements, the learners can study foreign language at the comfort of their homes (Liu & Zhang, 2012).

The r-value .475 manifests a "*Significant Positive Moderate Correlation*" between Pronunciation and Gamification. When the mobile application offers entertaining activities that can help to enhance their pronunciation, the more the respondents pay attention to it. With that, their pronunciation will be good as if it is their main language. Not only that, gamification helps to boost the respondents' interest

to improve their learning abilities, particularly in pronunciation. Duolingo is an example of mobile language learning application that includes variety of activities like practicing how to pronounce a particular word or phrase, which enhanced the learners' pronunciation of their chosen language (Kyria et al., 2015). Gamification is an entertaining way to help Learning English as a Second Language (LESL) and to bridge the void among students' learning and institutional practices (Dehghanzadeh et al., 2019).

The r-value .477 ensued a "*Significant Positive Moderate Correlation*" between Pronunciation and Ease of Use in which confirms that the easy accessibility of these applications affect the learners ability to enhance their pronunciation skills. The use of mobile application has shown a significant and optimistic impact on the way students' pronunciation and significantly changed their expectations and attitude (Chua et al., 2020) (González, 2020).

The r-value .511 showed a "*Significant Positive Moderate Correlation*" between Pronunciation and Learning Enhancing. Therefore, giving interesting activities and lessons can help to enhance one's knowledge and learning processes, especially their pronunciation. Learners' pronunciation skills, which is one of the most important aspect for effective conversation, depend on the given lessons and activities from mobile applications (Wongsuriya, 2020). These applications have directly impacted the learning process of both the students and teachers in exploring the feasibility of merging mobile learning into traditional classrooms (Gafni et al., 2017).

The r-value .561 resulted a "*Significant Positive Moderate Correlation*" between Vocabulary and Gamification. The respondents are more willing and motivated to expand their vocabulary if the entertaining activities are provided by the mobile application. Gamification of mobile applications serve as a motivation that boosts one's interest to learn foreign languages using entertaining activities on their learning development process (Flores, 2015) (Faisal, 2017).

The r-value .556 ensued a "*Significant Positive Moderate Correlation*" between Vocabulary and Ease of Use. The easier the respondents to navigate the application, the faster they expand their vocabulary skills. According to Nushi & Eqbali (2017), having an easy access to technology on learning can surely enhance one's abilities on utilizing various words appropriately. Additionally, students today learn and improve their skills more through the use of technology, be it in traditional or virtual classes (Aziz, 2018). With that, the role of technology, especially with an easy usage, is significant on enhancing the learners' vocabulary.

The r-value .585 showcased a "*Significant Positive Moderate Correlation*" between Vocabulary and Learning Enhancing. The lessons and topics that the mobile applications offer affect the vocabulary of the respondents. Sung et al., (2020) study relates to this as mobile applications or any multimedia platforms were regarded as learning tools that assist educators in providing learners accurate and definite information. Traditional methods of learning foreign language like memorizing and reviewing words or phrases are beneficial, and the mobile applications assist the learners on acquiring it. Moreover, through technology, learners were able to recognize language learning software suitable to study any language forms for specific contexts and meanings. Thus, this guides the learners to achieve their goals on learning foreign languages.

CONCLUSIONS AND RECOMMENDATION

Conclusions

SOP#1: *Demographic Profile*

Based on the interpretation done by the researchers with the data gathered on Chapter 4, the conclusions stated below are the summarized "Demographic Profile" results of the research:

1. Out of 400 Respondents, those chosen respondents with the ages of 20 to 25 years old were the most number of Young Professionals that participated with this research. This results have been used to identify the ages of the Young Professionals that spend most of their time engaging with their chosen Mobile Language Learning Application.

2. The data gathering procedure also showed that in terms of the usage of these Mobile Language Learning Applications, Female respondents use them more.

3. To identify if the respondents really are using mobile application in learning foreign languages, Duolingo App resulted as the most used application by the Young Professionals. This can also be used to state that the said application is the most popular application to be used in learning foreign language, which can be recommended by the researchers later.

4. The chosen respondents only engage in using mobile application in learning foreign language within below 1-hour which plays a vital role in the research as it affects how the young professionals are being affected with how long they use these mobile application and in learning foreign languages.

5. The researchers also concluded that learning foreign languages really has a vast area since there are countless languages to learn throughout the world. Though, with the multiple languages that can be learned with these mobile applications, Korean/Hangul interest the respondents more.

6. It concluded that no matter if the learner is enrolled in a formal language learning class or not, anyone can still learn foreign languages. It will not affect one's willingness and interests to learn different languages.

7. The data gathered also concluded that most of the respondents happened to have a family/relative speaking the languages they are currently learning. It can also be concluded that their interests in learning foreign languages can be affect with the person around them, relatives in particular.

8. Professions have also been the main reason why most of the chosen respondents are learning foreign languages. This can also be concluded as that their engagement in learning their chosen languages can also be affected with the things around them, specifically if they are required to learn or for their responsibilities in life.

SOP#2: *Level of Communication Fluency*

As interpreted in Chapter 4, the information below are the conclusions made by the researchers in terms of the "Communication Fluency" variable.

Communication Fluency

Upon the data gathered by the researchers, it is concluded that the level of communication fluency of Young Professionals are very good and suppose that its sub-factors which are the Pronunciation and Vocabulary are utilized as a substantial contribution in enhancing their communication fluency. These reflect how the learners focus on enhancing their communication fluency based on their vocabulary and pronunciation level.

- **Pronunciation**

  The pronunciation of the chosen respondents, contingent on data that has been accumulated by the researchers, are very good. It shows that learners' pronunciation skills are being enhanced as they learn foreign languages in which contributes with their overall level of communication fluency.

- **Vocabulary**

  The learners' vocabulary factor in learning foreign language resulted as excellent, based on the data collected. With that being said, it contemplates that the learners were able to practice and develop their vocabulary as they engage more in learning foreign language.

SOP#3: *Use of Mobile Applications*

As interpreted in Chapter 4, the information below are the conclusions made by the researchers in terms of the "Mobile Application" variable.

Mobile Application

The level of Mobile Application in the study resulted as very good which reflects the learners' usage of it in learning foreign language together with its sub-factors which are the gamification, ease of use, and learning enhancing. Thus, it measures the effectivity of mobile application in learning foreign language and on how it takes part in the development process of learners' communication fluency.

- **Gamification**

  In connection with the data from the study, the gamification ensued both very good and excellent interpretation which implies that learners are more motivated to learn if it includes entertaining aspects. This also indicates that gamification increases the participation and interest of learners with the help of fun activities which accords to the overall level of mobile application.

- **Ease of Use**

  The ease-of-use factor under the level of mobile application resulted as very good which can be concluded that the learners' navigation in using mobile application contributes with their motivation aspect in learning foreign language. It also shows that the navigation process takes part in the level of mobile application.

- **Learning Enhancing**

  Based on the data that the researchers had gathered, the Learning Enhancing factor of the learners in using mobile application are very good. It indicates that the use of mobile application in enhancing the learning aspect of learners is effective.

SOP#4: *The relationship between the level of Communication Fluency and the Use of Mobile Application*

The results down below are the conclusions of the "Correlational Aspects" of the main variables as part of the research.

Communication Fluency: Mobile Application

The two main variables resulted to have a "*Significant Relationship*" to each other that the researchers interpreted as that the usage of the respondents of mobile applications reflect on how they enhance their communication fluency. This can be concluded as the more the learners engage with mobile applications that offer foreign language learning, their communication fluency on these languages would also be enhanced.

- **Pronunciation : Gamification**

  With the various activities being provided in the mobile application, the researchers concluded that it is significantly related with how the learners enhance their pronunciation. With the learners continue to acquire these activities as the gamification factor, the more their pronunciation skills will be affected and enhanced.

- **Pronunciation : Ease of Use**

  As how the Pronunciation and Ease of Use resulted to have a Significant Relationship with each other, the researchers concluded that the reason why the learners' Pronunciation skills is being enhanced, is also because of the easy navigation of the mobile applications they use. It also gave them a chance to enhance such skills on learning foreign languages even more.

- **Pronunciation : Learning Enhancing**

  The researchers also concluded that the learners' Learning Enhancing factor plays a huge role in enhancing their pronunciation skills as how it was not only resulted to have Significant Relationship with each other, but also with how the lessons and way of learning through mobile applications can effectively affect one's skills in learning foreign languages.

- **Vocabulary : Gamification**

  In terms of enhancing their vocabulary aspect in learning foreign languages, the researchers concluded that the learners' vocabulary is being effectively enhanced with the engaging activities these applications have provided.

- **Vocabulary : Ease of Use**

  As how the these sub-topics showed a Significant Relationship with each other, the researchers concluded that the more these mobile applications are easy to navigate, the more the learners' vocabulary skill is being enhance. This also shows that the navigation of the mobile application relates to how the learners enhance their skills in learning foreign languages.

- **Vocabulary : Learning Enhancing**

  It was concluded that once these applications give the learners quality lessons with great ideas, understandable terms, and easy instructions, their vocabulary also enhances. This can also be concluded that with how it has resulted to have a Significant Relationship with each other, the vocabulary skills of the learners can be affected with the learning enhancing factor of the mobile applications.

Recommendations

The information stated below are the recommendations formulated by the researchers based from the conclusions they have gathered from discussing and analyzing the data:

1. Young Professionals

The researchers would like to recommend that Young Professionals should engage more on utilizing the acquisition of various mobile language learning application and to practice and explore more vocabularies and strategies that would help them be confident in using their desired languages. Additionally, they are encourage to explore and try different applications suited with their learning styles and environment for them to fully be aware of the services these applications can give and be able to completely master their chosen languages with perfect and enhanced communication fluency.

2. Educational Institutions

Educational Institutions should be encouraged to have sufficient technology-based learning tools and be adapted to the acquisition of Technological Advancements being provided. With this, these institutions should promote and provide adequate assistance in using mobile applications to more language learners as this can be one of the alternative ways to spread and offer numerous opportunities to help Young Professionals to learn different languages and be able to attain outstanding language skills that could be useful on their dream professions and future.

3. Mobile Application Owners

Mobile Application Owners, especially of the Busuu App and Memrise App should improve their applications more especially in terms of their services, and offer more game mechanics, different approaches, fun activities, and quality lessons that can capture the attention of the potential users and learners to use their mobile application. This is also for them to be adapted with the various mobile applications they can use in learning foreign languages that can eventually enhance the learner's language skills.

4. Future Language Experts

Future Language Experts should also be encouraged to have a collaboration with their co- language learners for them to receive different views and advisable ways on mastering their chosen language. With this, they will be able to be informed of how to deal with complicated ideas that could help them also navigating these applications and to fully understand their desired languages more. Also, with the proven effectivity of these mobile applications, they are encourage to explore and practice more in enhancing their language skills even outside their formal language courses.

5. Future Researchers

The future researchers are encouraged to have a study about the implications of language learners that they desire to have in a language application. Since other apps like Busuu App and Memrise App were the least applications used by the chosen respondents, it would be great for them to have a research about some factors to know why other mobile applications are not being recognized, unlike the Google Translate App, Duolingo App, and HelloTalk App. It will also be a great help for them to know what should be added or removed in an application for it to function comfortably and easily for the learners. Additionally, Future Researchers are also encouraged to have a research about the learners who study specific languages with the use of mobile applications to further enhance the results of related researches. They can also have a research related to the particular nature of these mobile applications that can also contribute on assessing its effectiveness on learning foreign languages.

BIBLIOGRAPHY

Abdullah, N. A. C., Tajuddin, A. J. A., & Soon, G. Y. (2019). Mandarin students' perceptions of smartphone applications in Mandarin learning. *Universal Journal of Educational Research*, 7(A9), 61–70. https://doi.org/10.13189/ujer.2019.071608

Agca, R. K., & Özdemir, S. (2013). Foreign Language Vocabulary Learning with Mobile Technologies. *Procedia - Social and Behavioral Sciences*, *83*, 781–785. https://doi.org/10.1016/j.sbspro.2013.06.147

Azar, A. S., & Nasiri, H. (2014). Learners' Attitudes toward the Effectiveness of Mobile Assisted Language Learning (MALL) in L2 Listening Comprehension. *Procedia - Social and Behavioral Sciences*, *98*, 1836–1843. https://doi.org/10.1016/j.sbspro.2014.03.613

Aziz, A. A., Hassan, M. U., Dzakiria, H., & Mahmood, Q. (2018). Growing Trends of Using Mobile in English Language Learning. *Mediterranean Journal of Social Sciences*, *9*(4), 235–239. https://doi.org/10.2478/mjss-2018-0132

Bachore, M. M. (2015). Language Learning through Mobile Technologies: An Opportunity for Language Learners and Teachers. *Journal of Education and Practice*, *6*(31), 50–53.

Bradac, V., & Walek, B. (2017). A comprehensive adaptive system for e-learning of foreign languages. *Expert Systems with Applications*, *90*, 414–426. https://doi.org/10.1016/j.eswa.2017.08.019

Burden, K., Kearney, M., Schuck, S., & Hall, T. (2019). Investigating the use of innovative mobile pedagogies for school-aged students: A systematic literature review. *Computers and Education*, *138*(December 2018), 83–100. https://doi.org/10.1016/j.compedu.2019.04.008

Chang, C., Chang, C. K., & Shih, J. L. (2016). Motivational strategies in a mobile inquiry-based language learning setting. *System*, *59*, 100–115. https://doi.org/10.1016/j.system.2016.04.013

Chen, X. (2016). Evaluating Language-learning Mobile Apps for Second-language Learners. *Journal of Educational Technology Development and Exchange*, *9*(2). https://doi.org/10.18785/jetde.0902.03

Chua, N. A., Tajuddin, A. J. B. A., Soon, G. Y., Rashid, R. A., Zakaria, R., Zaid, C. M., & Ahmad, M. (2020). Classroom research on Mandarin Foreign Language Learning Via Smartphone Applications. *Journal of Physics: Conference Series*, *1529*(4). https://doi.org/10.1088/1742-6596/1529/4/042040

Domínguez, A., Saenz-De-Navarrete, J., De-Marcos, L., Fernández-Sanz, L., Pagés, C., & Martínez- Herráiz, J. J. (2013). Gamifying learning experiences: Practical implications and outcomes. *Computers and Education*, *63*, 380–392. https://doi.org/10.1016/j.compedu.2012.12.020

Escobar Fandiño, F. G., Muñoz, L. D., & Silva Velandia, A. J. (2019). Motivation and E-Learning English as a foreign language: A qualitative study. *Heliyon*, *5*(9). https://doi.org/10.1016/j.heliyon.2019.e02394

Finardi, K. R., Leao, R. G., & Amorim, G. B. (2016). Mobile Assisted Language Learning: Affordances and Limitations of Duolingo. *Education and Linguistics Research*, *2*(2), 48. https://doi.org/10.5296/elr.v2i2.9842

Gafni, R., Achituv, D. B., & Rachmani, G. J. (2017). Learning foreign languages using mobile applications. *Journal of Information Technology Education: Research*, *16*(1), 301–317. https://doi.org/10.28945/3855

Gangaiamaran, R., & Pasupathi, M. (2017). Review on use of mobile apps for language learning. *International Journal of Applied Engineering Research*, *12*(21), 11242–11251.

Gómez, S., Zervas, P., Sampson, D. G., & Fabregat, R. (2014). Context-aware adaptive and personalized mobile learning delivery supported by UoLmP. *Journal of King Saud University - Computer and Information Sciences*, *26*(1), 47–61. https://doi.org/10.1016/j.jksuci.2013.10.008

Hakak, S., Noor, N. F. M., Ayub, M. N., Affal, H., Hussin, N., ahmed, E., & Imran, M. (2019). Cloud-assisted gamification for education and learning – Recent advances and challenges. *Computers and Electrical Engineering*, *74*, 22–34. https://doi.org/10.1016/j.compeleceng.2019.01.002

Hao, Y., Lee, K. S., Chen, S. T., & Sim, S. C. (2019). An evaluative study of a mobile application for

middle school students struggling with English vocabulary learning. *Computers in Human Behavior*, *95*(April 2018), 208–216. https://doi.org/10.1016/j.chb.2018.10.013

Ishaq, K., Zin, N. A. M., Rosdi, F., Abid, A., & Ali, Q. (2020). Usability of mobile assisted language learning app. *International Journal of Advanced Computer Science and Applications*, *11*(1), 354–363. https://doi.org/10.14569/ijacsa.2020.0110145

Ivić, V., & Jakopec, T. (2017). Using mobile application in foreign language learning: a case study. *Libellarium: Journal for the Research of Writing, Books, and Cultural Heritage Institutions*, *9*(2), 217–230. https://doi.org/10.15291/libellarium.v9i2.288

Kacetl, J., & Klímová, B. (2019). Use of smartphone applications in english language learning—A challenge for foreign language education. *Education Sciences*, *9*(3), 1–9. https://doi.org/10.3390/educsci9030179

Kim, H. J., Lee, J. M., & Rha, J. Y. (2017). Understanding the role of user resistance on mobile learning usage among university students. *Computers and Education*, *113*, 108–118. https://doi.org/10.1016/j.compedu.2017.05.015

Klimova, B. (2020). Benefits of the use of mobile applications for learning a foreign language by elderly population. *Procedia Computer Science*, *176*, 2184–2191. https://doi.org/10.1016/j.procs.2020.09.255

Krivoruchko, V. A., Raissova, A. B., Makarikhina, I. M., Yergazinova, G. D., & Kazhmuratova, B. R. (2015). Mobile-assisted learning as a condition for effective development of engineering students' foreign language competence. *International Education Studies*, *8*(7), 158–168. https://doi.org/10.5539/ies.v8n7p158

Kuimova, M., Burleigh, D., Uzunboylu, H., & Bazhenov, R. (2018). Positive effects of mobile learning on foreign language learning. *TEM Journal*, *7*(4), 837–841. https://doi.org/10.18421/TEM74-22

Liu, Q., & He, X. (2014). *Using Mobile Apps To Facilitate English Learning for College Students in China*. 68.

Liu, X., & Zhang, J. (2012). Foreign Language Learning through Virtual Communities. *Energy Procedia*, *17*, 737–740. https://doi.org/10.1016/j.egypro.2012.02.165

Mengorio, T. M., & Dumlao, R. (2019). The Effect of Integrating Mobile Application in Language Learning: An Experimental Study. *JET (Journal of English Teaching)*, *5*(1), 50. https://doi.org/10.33541/jet.v5i1.959

Morales, R., Igler, B., Böhm, S., & Chitchaipoka, P. (2015). Context-aware mobile language learning. *Procedia Computer Science*, *56*(1), 82–87. https://doi.org/10.1016/j.procs.2015.07.198

Muhammed, A. A. (2014). The Impact of Mobiles on Language Learning on the Part of English Foreign Language (EFL) University Students. *Procedia - Social and Behavioral Sciences*, *136*, 104– 108. https://doi.org/10.1016/j.sbspro.2014.05.297

Nushi, M., & Eqbali, M. H. (2017). Duolingo: A mobile application to assist second language learning. *Teaching English with Technology*, *17*(1), 89–98.

Oga-Baldwin, W. L. Q., Nakata, Y., Parker, P., & Ryan, R. M. (2017). Motivating young language learners: A longitudinal model of self-determined motivation in elementary school foreign language classes. *Contemporary Educational Psychology*, *49*, 140–150. https://doi.org/10.1016/j.cedpsych.2017.01.010

Ozer, O., & Kiliç, F. (2018). The effect of mobile-assisted language learning environment on EFL students' academic achievement, cognitive load and acceptance of mobile learning tools. *Eurasia Journal of Mathematics, Science and Technology Education*, *14*(7), 2915–2928. https://doi.org/10.29333/ejmste/90992

Palalas, A. (2011). Mobile-assisted language learning: designing for your students. *Second Language Teaching and Learning with Technology: Views of Emergent Researchers*, *2011*, 71–94. https://doi.org/10.14705/rpnet.2011.000007

Persson, V., & Nouri, J. (2018). A systematic review of second language learning with mobile technologies. *International Journal of Emerging Technologies in Learning*, *13*(2), 188–210. https://doi.org/10.3991/ijet.v13i02.8094

Pilar, R.-A., Jorge, A., & Cristina, C. (2013). The Use of Current Mobile Learning Applications in EFL. *Procedia - Social and Behavioral Sciences*, *103*, 1189–1196. https://doi.org/10.1016/j.sbspro.2013.10.446

Rahimi, M., & Miri, S. S. (2014). The Impact of Mobile Dictionary Use on Language Learning. *Procedia Social and Behavioral Sciences*, *98*, 1469–1474. https://doi.org/10.1016/j.sbspro.2014.03.567

Rosell-Aguilar, F. (2018). Autonomous language learning through a mobile application: a user evaluation of the busuu app. *Computer Assisted Language Learning*, *31*(8), 854–881. https://doi.org/10.1080/09588221.2018.1456465

Sariani, S., Yaningsih, Y., & El Khairat, M. (2020). Assessing the Effectiveness of Mobile-Application Technology: A Project-Based Learning. *JEES (Journal of English Educators Society)*, *5*(1), 67–73. https://doi.org/10.21070/jees.v5i1.376

Soler Costa, R., & Han, T. (2017). the Effect of Using a Mobile Application on Efl Learners' Beliefs About Language Learning (Ball). *International Journal of Developmental and Educational Psychology. Revista INFAD de Psicología.*, *2*(1), 229. https://doi.org/10.17060/ijodaep.2017.n1.v2.935

Sung, C. M., Ahmad, M., Mansor, N. R., Rashid, R. A., & Abdullah, N. A. C. (2020). The Effectiveness of Mobile Application in Learning Malay Foreign Language. *Journal of Physics: Conference Series*, *1529*(4). https://doi.org/10.1088/1742-6596/1529/4/042064

Sung, Y. T., Chang, K. E., & Yang, J. M. (2015). How effective are mobile devices for language learning? A meta-analysis. *Educational Research Review*, *16*, 68–84. https://doi.org/10.1016/j.edurev.2015.09.001

Treiblmaier, H., & Putz, L. M. (2020). Gamification as a moderator for the impact of intrinsic motivation: Findings from a multigroup field experiment. *Learning and Motivation*, *71*(July), 101655. https://doi.org/10.1016/j.lmot.2020.101655

Troussas, C., Krouska, A., & Sgouropoulou, C. (2020). Collaboration and fuzzy-modeled personalization for mobile game-based learning in higher education. *Computers and Education*, *144*(February 2019), 103698. https://doi.org/10.1016/j.compedu.2019.103698

Wei, W., Mejia, C., & Qi, R. (2020). A personal learning environment (PLE) approach to mobile teaching and learning on a short-term study abroad. *Journal of Hospitality, Leisure, Sport and Tourism Education*, *xxxx*, 100296. https://doi.org/10.1016/j.jhlste.2020.100296

Willemse, J. J., Jooste, K., & Bozalek, V. (2019). Experiences of undergraduate nursing students on an authentic mobile learning enactment at a higher education institution in South Africa. *Nurse Education Today*, *74*(November 2018), 69–75. https://doi.org/10.1016/j.nedt.2018.11.021

Wongsuriya, P. (2020). Improving the Thai Students' Ability in English Pronunciation through Mobile Application. *Educational Research and Reviews*, *15*(4), 175–185. https://doi.org/10.5897/ERR2020.3904

Yildirim, I. (2017). The effects of gamification-based teaching practices on student achievement and students' attitudes toward lessons. *Internet and Higher Education*, *33*, 86–92. https://doi.org/10.1016/j.iheduc.2017.02.002

Zou, B., & Li, J. (2015). *Exploring mobile apps for English language teaching and learning. 2015*, 564–568. https://doi.org/10.14705/rpnet.2015.000394

APPENDICES: INFORMED CONSENT

LYCEUM OF THE PHILIPPINES UNIVERSITY
Senior High School

INFORMED CONSENT

Research Title: "Learning Foreign Language Using Mobile Applications in Enhancing Communication Fluency Among Young Professionals"

Researchers: De Leon, Phill Andrew, Carino, Kendrel May, Gamuac, Cyniza Jane, Jimenez, Princess Khayle, Nacario, Princess Nica, Pelayo, Mikhaela Cassandra, Reyes, Nadine Erika, Sy, Maria Christina

Purpose of the Research: This study is part of the course requirement in Research in Daily Life 2: Quantitative Research of the Accountancy, Business and Management (ABM) Strand. The objective of the study is to determine the effectiveness of learning foreign language using mobile applications in enhancing communication fluency among young professionals.

Risk and Discomforts: We do not force any risk or discomforts from your participation in this survey.

Benefits of the Research to Society and to you:

This research will benefit the Young professionals, Educational Institutions, Mobile Application Owners, Future Language Experts, and Future Researchers by aiming to widen the learners' knowledge on learning foreign language in maximizing the use of mobile applications in enhancing their communication fluency.

Voluntary Participation: Your participation in this study is completely voluntary. The survey will last around 15-30 minutes. Should you decide to participate. Please answer the questions honestly, accurately and completely. You can withdraw from the study any time, for any reason, if you decide.

Confidentiality: All information you provide will be held confidential, and unless you specially indicate your consent, your name will not appear in any report or publication of the research. Confidentiality will be provided to the fullest extent possible in accordance with the Data Privacy Act.

Question about the research: If you have questions about the research in general or about your inclusion in the study, feel free to contact the researcher through email: phillandrewdeleon1017@gmail.com /cellphone no. 09758798764.

Student Researchers:

De Leon, Phill Andrew	Jimenez, Princess Khayle	Reyes, Nadine Erika
Carino, Kendrel May	Nacario, Princess Nica	Sy, Maria Christina
Gamuac, Cyniza Jane	Pelayo, Mikhaela Cassandra	

John Christian Espinola
Content Lead for Research

Clarence Ella D. Alipio
Principal

Conformed: I agree to take in the above study.

Name of Participant	Signature	Date

APPENDICES: SURVEY INSTRUMENT

"LEARNING FOREIGN LANGUAGE USING MOBILE APPLICATIONS IN ENHANCING COMMUNICATION FLUENCY AMONG YOUNG PROFESSIONALS"

Demographic Profile:

Age: _____ *20-25 years old* _____ *26-30 years old* _____*31-35 years old*

Sex: _____*Female* _____*Male*

Mobile Application/s used to learn foreign language (check as desired): _____*Duolingo App* _____*Google Translate* _____*HelloTalk App* _____*Memrise App* _____*Busuu App* *Others (Pls. Specify)*_____

No. of hours consumed in using mobile applications to learn foreign language in a day. _____*Below 1-hour* _____*2-3 hours* _____*4 hours above*

Foreign language/s that you are learning. _____

Are you enrolled in a formal foreign language class? _____*Yes* _____*No*

Do you have family/relative who can speak any foreign language? _____*Yes* _____*No*

Reasons of learning foreign language: (check as desired) _____*Education* _____*Profession* _____*Entertainment* *Others (Pls. Specify)*_____

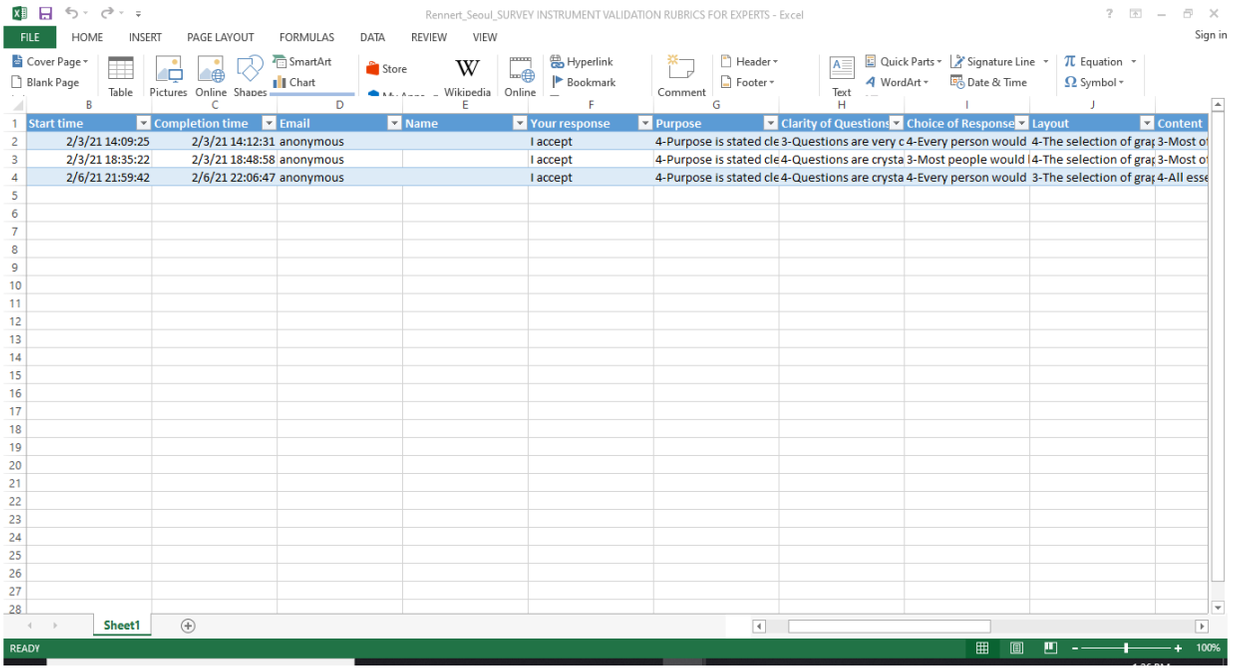
Directions: Read and reflect on each statement. Put a check (√) in the box that corresponds to your answer.

Part 1: Communication Fluency	*Strongly Disagree*	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*
Pronunciation					
1. I pay attention to my pronunciation and try to sound as clear as possible.					
2. I seek opportunities to interact with others who also speak in a different language same as mine.					
3. When I speak in a different language, I put emphasis on important words (speak them louder or for a longer time).					
4. I rehearse before presenting in classes or in conferences.					
5. I feel confident in speaking in different language during class/conference participation.					
Vocabulary					
1. I deliberately try to expand my vocabulary in different language.					
2. I pay attention on how people in our field explain complicated ideas in different language/s.					
3. I try to unlock unfamiliar words from the language I want to learn so I can get used to it immediately.					
4. Before I speak in different language, I make sure that the message I want to convey is clear and precise.					
5. After communicating using a different language, I reflect on my vocabulary and think about how to improve it.					

Part 2: Use of Mobile Applications	*Strongly Disagree*	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*
Gamification					
1. It is engaging to use mobile applications in learning if it includes game mechanics.					
2. I feel motivated to learn when it is entertaining.					
3. I see gamification as a new method of learning in mobile applications.					
4. I am more active and interested in learning which includes fun activities.					
Ease of Use					
1. I find mobile applications more convenient in learning foreign language.					
2. The navigation of mobile application that I use in learning is fast and easy to use.					
3. My experience in using mobile applications in learning foreign language/s is excellent.					
4. I highly encourage the use of mobile applications in learning foreign languages.					
Learning Enhancing					
1. Mobile applications enhance the flexibility of learners in learning at their own pace.					
2. The use of mobile applications allows me to personalize my learning depending on how I will be able to understand the lessons and topics.					
3. I am able to understand lessons with the use of mobile applications.					
4. I guarantee the effectiveness of mobile applications in learning foreign languages.					

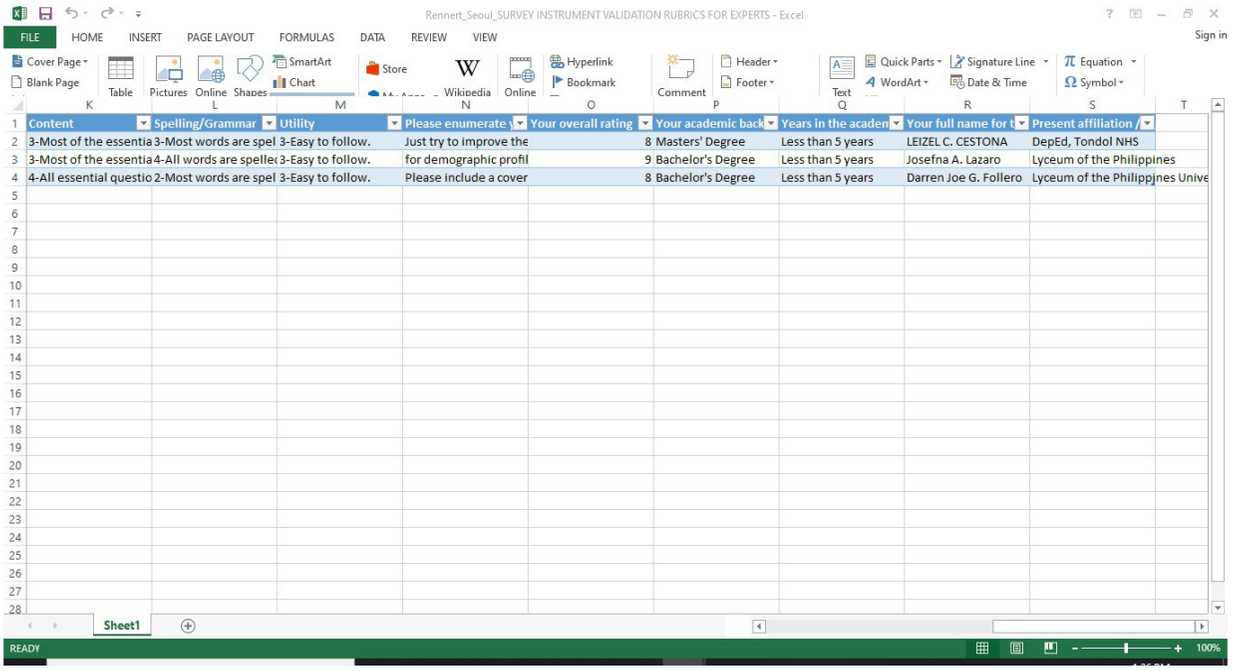
Retrieved from:
[illegible]
[illegible]

APPENDICES: EXCEL SCORING OF VALIDATORS



Rennert_Seoul_SURVEY INSTRUMENT VALIDATION RUBRICS FOR EXPERTS - Excel

Start time	Completion time	Email	Name	Your response	Purpose	Clarity of Questions	Choice of Response	Layout	Content
2/3/21 14:09:25	2/3/21 14:12:31	anonymous		I accept	4-Purpose is stated cle	3-Questions are very c	4-Every person would	4-The selection of gra	3-Most o
2/3/21 18:35:22	2/3/21 18:48:58	anonymous		I accept	4-Purpose is stated cle	4-Questions are crysta	3-Most people would	4-The selection of gra	3-Most o
2/6/21 21:59:42	2/6/21 22:06:47	anonymous		I accept	4-Purpose is stated cle	4-Questions are crysta	4-Every person would	3-The selection of gra	4-All esse



Rennert_Seoul_SURVEY INSTRUMENT VALIDATION RUBRICS FOR EXPERTS - Excel

Content	Spelling/Grammar	Utility	Please enumerate	Your overall rating	Your academic back	Years in the acaden	Your full name for t	Present affiliation /
3-Most of the essentia	3-Most words are spel	3-Easy to follow.	Just try to improve the	8	Masters' Degree	Less than 5 years	LEIZEL C. CESTONA	DepEd, Tondol NHS
3-Most of the essentia	4-All words are spelle	3-Easy to follow.	for demographic profil	9	Bachelor's Degree	Less than 5 years	Josefna A. Lazaro	Lyceum of the Philippines
4-All essential questio	2-Most words are spel	3-Easy to follow.	Please include a cover	8	Bachelor's Degree	Less than 5 years	Darren Joe G. Follero	Lyceum of the Philippines Unive

APPENDICES: TEST OF RELIABILITY

TEST OF RELIABILITY-INTERNAL CONSISTENCY: CRONBACH ALPHA VALUE

Section:	RENNERT
Team:	SEOUL
Title:	

Case Processing Summary

		N	%
Cases	Valid	25	100.0
	Excluded[a]	0	.0
	Total	25	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.914	22

Interpretation Guide:

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Source: https://a8h2w5y7.rocketcdn.me/wp-content/uploads/2014/12/CA2.png

Note:

- Attach this file as part of your appendices.
- Countercheck the number of items tested for reliability if matches your survey instrument.
- Interpret the Cronbach Alpha Value based on the table above.
- Construct your sentences which will be included in your Chapter 3: Methodology under Instrumentation section. Example:

  "*This survey instrument was pilot tested to ____ respondents and has undergone Reliability Test using Cronbach Alpha. With a computed value of _____, this shows that the survey instrument to be used is _____*".

APPENDICES: SPSS RESULTS IN MS WORD

Communication Fluency Category * Use of Mobile Application Category Crosstabulation

Count

		Use of Mobile Application Category				
		Not at all Effective	Slightly Effective	Moderately Effective	Very Effective	Extremely Effective
Communication Fluency Category	Poor	6	0	1	0	0
	Fair	1	0	2	0	1
	Good	0	1	9	9	5
	Very Good	0	1	23	131	41
	Excellent	0	2	13	68	86
Total		7	4	48	208	133

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	372.463[a]	16	.000
Likelihood Ratio	123.126	16	.000
Linear-by-Linear Association	101.677	1	.000
N of Valid Cases	400		

a. 17 cells (68.0%) have expected count less than 5. The minimum expected count is .04.

Correlations

		Communication Fluency Mean	Use of Mobile Application Mean
Communication Fluency Mean	Pearson Correlation	1	.617**
	Sig. (2-tailed)		.000
	N	400	400
Use of Mobile Application Mean	Pearson Correlation	.617**	1
	Sig. (2-tailed)	.000	
	N	400	400

**. Correlation is significant at the 0.01 level (2-tailed).

** *Moderate High Positive Correlation*

APPENDICES: GRAMMARIAN

CERTIFICATE OF LANGUAGE EDITING

May 3, 2021

This is to certify that I thoroughly read and edited the research paper entitled "**Learning Foreign Language Using Mobile Applications in Enhancing Communication Fluency Among Young Professionals**" written by **Carino, Kendrel May M., De Leon, Phill Andrew J., Gamuac, Cyniza Jane I., Jimenez, Princess Khayle M., Nacario, Princess Nica C., Pelayo, Mikhaela Cassandra D., Reyes, Nadine Erika M., and Sy, Maria Christina** who are all senior high school students of Lyceum of the Philippines University-Manila under the Academic Track – Accountancy, Business, and Management (ABM) Strand during the Academic Year 2020-2021.

MR. DARREN JOE G. FOLLERO, LPT

Bachelor of Secondary Education major in English

The National Teachers College, Quiapo, Manila

Low-fidelity Buyer Seller Housing Simulations Can Encourage Authentic Learning Experiences

[1]WONG Wai Chung Gary, [2]WONG Pui Yun Paulina
[3]SHEN Jiandong, Daniel

[1]wongwc@ln.edu.hk, [2]paulinawong@ln.edu.hk, [3]dan@soqqle.com

[1]Department of Economics, Lingnan University, Hong Kong
[2]Science Unit, Lingnan University, Hong Kong
[3]Soqqle Pte Ltd, Singapore

Abstract: The purpose of this pilot study is to evaluate the possibility of using low-fidelity simulations in a social network to achieve diverse learning goals. While popular simulations use modern technologies like virtual reality, the cost involved in acquiring such technologies, the student learning curve, and the scalability of the solution often create challenges in teacher-student adoption. Popular communication technologies like social networks may help as the multimedia format can still reflect realistic scenarios or events. The easy-to-use and familiar nature of social networks also may encourage adoption. However, besides being unclear how a game design can fit into a social network, students may not find the experience purposeful for learning. This is in light of studies that show that students do not prefer social networks in learning if not designed with purpose and learning goals. This gap in knowledge and evidence has motivated this pilot study for which 23 students taking part in a housing economics course in a Hong Kong university post pictures for properties on a private social media application, Soqqle. Soqqle is a code-protected mobile application where students can post multimedia and engage with each other using comments. In this context, participants posted properties on Soqqle and transacted with each other using comments through a bidding and purchase acceptance process over three rounds. Post-course reflective essays suggest that students find the process authentic as conditions for reflective thinking, knowledge transfer, and optimal challenge were met. The authors invite other researchers interested in low-fidelity game-based learning to develop other use cases that may use a multimodal approach.

Keywords: game-based learning, gamification, economics education, social media learning.

INTRODUCTION

During COVID-19, due to disruptions to contemporary classroom teaching, teachers have had to adopt new online learning methods. Despite the availability of online learning tools like Zoom, it remains a challenge to sustain student engagement and motivation. This study aims to integrate two types of pedagogy that aim to increase classroom engagement. They are i) asynchronous learning methods specifically in the use of social networks, and ii) game-based learning. While the use of social networks has been reported to increase engagement, some studies report negative results and low participation.

According to Akcaoglu & Lee (2018), social networks not done purposefully for learning, or more notably assessments, can lead to low student interest. It is important to ensure that the adoption of such tools meets a learning need. The popularity of social networks as a communication tool may lead to impressions that the platforms are meant for informal and non-academic purposes. Some students may not find such activity meaningful. In one study, students reported that they did not prefer the use of social networks in education as they did not fit academic purposes (Lima et al., 2020). The use of gamification in education has been shown to create learning motivation (van Roy & Zaman, 2018; Rahimi et al., 2021). Many such games adopt gamification techniques like badges and rewards as an incentive for students to complete class activities. However, it is not always successful as some students may find such rewards superficial and lack purpose (Kyewski & Krämer, 2018). The use of game-like environments to simulate a realistic representation of the real-life activity may help to provide better student adoption.

For example, Chen & Hsu (2020) adopted a game-based virtual reality learning environment for English learning, which can provide immersion and flow to influence self-regulation and self-efficacy. Another game-based example that has been used for simulations is Landlord-Go (https://landlord-go.com) where users could roleplay as property buyers and execute transactions. However, evidence that combines social networks and gamification is lesser-known. The purpose for doing so is also not immediately clear. In this study, we look into a few potential reasons that may enhance teacher-student engagement and adoption. The level of fidelity (realism) that a game-based learning tool can offer will also affect the availability of the tool to the class. For example, incorporating virtual reality-based solutions require specific equipment and software which may not be available to some institutions. An alternative solution is required considering the need to enhance education diversity so that technology can be easily available to all (OECD, 2016). High-fidelity solutions also often require high technological customization and therefore may not meet diverse learning goals. Besides being a challenge to reach diverse learners, it may be difficult to react to curriculum changes in the longer run. Finally, educators also need to consider the time and complexity that students may face in learning a new technology. This might be even more so for students who may not play similar games and are unfamiliar with the game design.

Adopting the features of social networks into a game-based solution may help to encourage more regular adoption over the longer run. One way communication for games can be conducted in a social network is the use of multimedia. According to Alemdag & Cagiltay (2018), such a multimodal format can provide a realistic experience and can capture the attention of students. Game scenarios could be created by introducing role-playing scenarios for students using videos. One approach is the use of digital storytelling videos to provide opportunities for students to co-create ideas and solutions (Schmoelz, 2018). However, it is not immediately clear how a roleplaying simulation can be embedded into a social network to achieve learning outcomes. It is also unclear if students will react positively to the process. One recent simulation game that used a board-game simulation blended with social activity (Mochizuki et al, 2021) reported self-regulation and achieved learning outcomes.

However, the authors were unable to find empirical evidence of similar game-based learning conducted in a social network.

The use of simulations has been previously linked to authentic learning, helping students to associate classroom concepts with real-life scenarios (García-Magariño & Lacuesta, 2017). Authentic learning has also been mentioned to be necessary for 21st-century learning (OECD, 2019). Using a social network for simulations is low fidelity, in which the images or videos can simulate content in a real-life scenario and comments could be used to replicate person-to-person exchanges. It will be crucial to determine if such a low-fidelity method could still invoke authentic learning. Further, it is also essential to ensure that the learning outcomes for the courses are met. Therefore, this pilot study aims to incorporate a low fidelity simulation and evaluate:

- If students perceive a low-fidelity simulation conducted using a social network, to be authentic for learning real-life scenarios
- If students achieve learning outcomes while using a low-fidelity simulation conducted through a social network

A. Participants

23 student participants were recruited for this pilot study. The participants were doing a module on housing economics in a Hong Kong university and were 17-19 years old. The participants resided in Hong Kong, and the study was conducted in an online learning manner due to COVID-19..

B. Assessments and Measures

The topic for this study was housing in Hong Kong. The housing market in Hong Kong can be described as complex, as the island's limited geographic area has created an imbalance between supply and demand (Zheng et al., 2018), leading to unaffordability (Ho et al., 2019; Leung et al., 2020). The purchase of a house requires financial calculations (eg. premiums, upfront payment) as well as consideration of housing purchase preferences and can suit authentic learning purposes. Various properties have also been advertised on social networking sites like Facebook in private groups by posting sample images of the properties.

This low-fidelity simulation game was facilitated in a purpose-built social learning mobile application, Soqqle (https://soqqle.com), used in multiple institutions in Asia, where users can "post" images or videos as well as add personal comments on these submissions. The platform was chosen over other social media applications as some students had previously reported that they did not prefer mainstream social media applications for academic purposes (Akcaoglu & Lee, 2018, Lima et al., 2020). Soqqle is also a private application in which the administrator needs to create a private code for participants to key in before content can be accessed.

The simulation game was overall designed with principles from the sustainability social game, Water Nexus Game (Mochizuki et al, 2021). The key components of the game design are i) game roles, ii) pre-defined expected role behavior and goals, iii) resources, iv) problems and challenges, v) collaboration. Thus the following rules were designed:

1. Over three consecutive Fridays, participants play roles as sellers and buyers to supply and purchase properties. The overall goal of the game is for buyers to purchase one property each by the end of the simulation, for which the properties are supplied by sellers.
2. While transactions can only be performed over the designated Fridays, sellers (in teams of 3-4) will spend the rest of their time evaluating buyers who have not yet purchased a property.
3. Buyers are randomly assigned profiles (eg. income, housing, and preferences) and work individually to find the best match for their purchase.
4. Participants play both buyers and sellers roles at the same time. The objective as a buyer is completed as soon as a property is bought while as a seller, the participant will continue to help to find properties for others.
5. Buyers are also not allowed to purchase homes from their own seller team.
6. Sellers can find homes on public property websites like Centraline Property (https://hk.centanet.

com) or Midland Property (https://www.midland.com.hk). In each round, the sellers will identify buyers who have not been able to successfully purchase a home and find suitable homes for them.

7. Once suitable homes are identified, a screen capture of the home will be posted on Soqqle as an image. This generates a push notification on Soqqle that is sent to all participants, indicating that a new property has become available.
8. Buyers can review all advertised homes on Soqqle and decide whether to bid on any of the postings depending on their budget (e.g., savings, down payment requirements) and preferences (e.g., property size, location, proximity to transport links, etc.).
9. If they decide to make a bid, they will post a bid amount on Soqqle using the comments feature and wait for the seller to respond.
10. After evaluating bids, the seller will reply to indicate acceptance or rejection. If the transaction is completed, the seller will mark the property as SOLD using the caption of the post.

Students playing as buyers are expected to learn how to use public housing calculators to determine purchasing needs like down payments and mortgage paybacks. They are also expected to learn about non-financial factors like the size of the household and physical needs like transportation. The teacher will also evaluate bids and will interject on the comments if calculations or assumptions were made incorrectly.

To evaluate the learning benefits from HousingHK, this study uses an adaptation of the authentic assessments categories defined by Farrell (2020), also defined in Table 1. The categories are i) Knowledge transfer: Able to transform gained classroom knowledge to real-life usage, ii) Reflection: Able to provide self-reflection of learning gains,

Realism: Able to experience the realism of the real-life experience, Performance: Able to complete real-life tasks, v) Challenge: Found challenge in completing tasks, vi) Varying experiences: Experienced varying experiences.

Table 1
Authentic learning criteria (Farrell, 2020)

Category	Description
Knowledge Transfer	Able to transform gained classroom knowledge to real-life usage
Reflection	Able to provide self-reflection of learning gains
Realism	Able to experience realism of the real-life experience
Performance	Able to complete real-life tasks
Challenge	Found challenge in completing tasks

Besides authentic learning criteria, the learning objectives of the module were for students to learn about the overall housing market, factors that take place when considering a purchase, as well as the process of housing search. Participants are asked to provide a 500 word reflective written essay to describe their learning experiences and outcomes at the end of the simulation. Illustrative quotes that matched the authentic learning criteria were selected to represent the learning experiences for analysis. Participants were informed that if they preferred not to have quotes from their essays included in any reports or publications, they could notify the researchers of this decision by email.

RESULTS

35 properties on the Soqqle mobile app during the study period, 21 (60%) of which were sold. 21 participants submitted their essays at the end of the simulation.

A. Property postings on Soqqle

Images of property found on public property websites were posted on Soqqle, for which content was private and only accessible for the students who had access to the application. A sample posting and transaction is shared on the Appendix. Participants were able to transact successfully using the comments through a buyer bidding and seller acceptance process. No issues were reported by participants in conducting the simulation.

B. Key themes on reflective essays

In terms of authentic learning (Table 1), the most commonly mentioned phases were related to reflection and knowledge transfer. This was as the students reviewed the housing search and purchase process and reflected on their overall perspective on the Hong Kong housing market. Several participants also mentioned the realism of the process. Some highlighted experiencing a level of challenge in completing the exercise due to the 'resources' given to them as part of the simulation. Illustrative quotes are selected below:

1) Knowledge Transfer
   - "higher income level only enables buyers to completely settle the mortgage using shorter time"
   - "taking care of the second room which I might not use. This should be a utility loss"
   - "make decision of aiming for a smaller house which I can pass the down payment constraint"
2) Reflection
   - "However, I still think that it is not very affordable for me if I spend around 40% of the income for the monthly repayment"
   - "I have a strong insight after selling property to these two diverse buyers, which makes me understand the importance of having savings!"
3) Realism
   - "These are the factors that I do not consider in this game, but it is essential in real life. "
4) Challenge
   - "In the last trade round, 9 and 13 were still available for purchase. Thus, A4006 was put into the market as planned. Unfortunately, it didn't sell out. "
   - "At the same time, those buyers may not like our choices, which resulted in some dwellings that we did not sell in the end."
5) Performance
   - "The property I have chosen this time is Tonnochy Towers which is 46-year-old."

- "In addition, the house information I posted on the Soqqle app also specifically stated that my house is suitable for Buyer No. 9 and Buyer No. 13, and I hope they can see my house as soon as possible. Although they did not buy my house in the end, I have tried my best."
- "As expected, all of our houses were sold out successfully"

It was also observed that several of the statements mentioned were related to the topics of i) housing search, ii) housing market as well as iii) factors in a housing transaction. These three topics were the learning objectives of the course.

CONCLUSION

Overall, the pilot test showed signs for which students appreciated the use of a social network for simulating housing transactions. This study is significant because it is the first that the authors could find that used a social network for completing a simulated transaction that factors in both buying and selling aspects. Participants were largely able to fulfill the learning objectives of the modules as they grouped up to sell and purchase properties. Participants were also able to provide meaningful reflections on their perspective of the housing market based on their experience.

One of the goals of this study was to evaluate the effectiveness of a low-fidelity game design using a social network. This study was able to evidence the quick setup and easy adoption by both the teacher-student participants in participating in the learning activity. For example, besides creating the code on the Soqqle application, there was no other technical setup or preparation needed by the teacher. However, it should be noted that the teacher had to prepare game rules in a document and share it with the participants. In a high-fidelity game, some of these rules might be embedded in the game itself. Participants were also able to quickly pick up the usage of the application due to its similarity with social networks. The push notifications that are triggered on every seller post were also helpful to inform the participants of available property. The challenges defined in the game also seemed to be optimal, allowing participants to observe different challenges faced by others. This is consistent with studies on simulation games that use challenges to motivate learning (Buil et al., 2019; Kiili, 2005).

This study is also the first that uses realism (Alemdag & Cagiltay, 2018) in videos within a private social network, Soqqle, for game-based simulation (Mochizuki et al., 2021). Similar scenarios may be adopted by others with other use cases. Some possible examples that might be worth trying are:

1. Participants roleplaying as companies (seller) with open positions where the seller could post a video describing their job opening. The job applications (buyer) can post videos to describe their application
2. Participants roleplaying as companies (seller) with researched problem statements where the seller could post a video describing their problems more. The job applications (buyer) could be consultants offering solutions and bidding for jobs
3. Participants roleplaying as shops (seller) offering solutions like selling an electronic device. Buyers could post videos to simulate purchasing scenarios like a customer walk-in.
4. Participants role playing as counsellor (seller) offering counselling services. Buyers could post videos to present problems requiring a solution which can be responded to by the counsellor (seller).

Overall, this study shows the promise of using a low-fidelity simulation using a social network to achieve various learning outcomes. The authors encourage other researchers to take part in different scenarios to develop the potential use cases. In addition, other variables like motivation and critical thinking may be included to measure the effects of video-based simulations to learning outcomes.

REFERENCES

Alemdag, E., & Cagiltay, K. (2018). A systematic review of eye tracking research on multimedia learning. Computers & Education, 125, 413–428. https://doi.org/10.1016/j.compedu.2018.06.023

Akcaoglu, M., & Lee, E. (2018). Using Facebook groups to support social presence in online learning. Distance Education, 39(3), 334–352. https://doi.org/10.1080/01587919.2018.1476842

Buil, I., Catalán, S., & Martínez, E. (2019). Encouraging intrinsic motivation in management training: The use of business simulation games. The International Journal of Management Education, 17(2), 162–171. https://doi.org/10.1016/j.ijme.2019.02.002

Chen, Y.-L., & Hsu, C.-C. (2020). Self-regulated mobile game-based English learning in a virtual reality environment. Computers & Education, 154, 103910. https://doi.org/10.1016/j.compedu.2020.103910

Farrell, C. (2020). Do international marketing simulations provide an authentic assessment of learning? A student perspective. The International Journal of Management Education, 18(1), 100362. https://doi.org/10.1016/j.ijme.2020.100362

García-Magariño, I., & Lacuesta, R. (2017). Agent-based simulation of real-estate transactions. Journal of Computational Science, 21, 60–76. https://doi.org/10.1016/j.jocs.2017.05.021

Ho, L., & Wong, G. (2019). Taxing land rent, lowering other taxes – the case of Hong Kong. Asian Education And Development Studies, 9(4), 521-533. https://doi.org/10.1108/aeds-08-2018-0142

Kiili, K. (2005). Digital game-based learning: Towards an experiential gaming model. The Internet and Higher Education, 8(1), 13–24. https://doi.org/10.1016/j.iheduc.2004.12.001

Kyewski, E., & Krämer, N. C. (2018). To gamify or not to gamify? An experimental field study of the influence of badges on motivation, activity, and performance in an online learning course. Computers & Education, 118, 25–37. https://doi.org/10.1016/j.compedu.2017.11.006

Leung, C. K. Y., Ng, C. Y. J., & Tang, E. C. H. (2020). Why is the hong kong housing market unaffordable? Some stylized facts and estimations. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3559948

Lima, K. R., das Neves, B.-H. S., Ramires, C. C., dos Santos Soares, M., Martini, V. Á., Lopes, L. F., & Mello-Carpes, P. B. (2020). Student assessment of online tools to foster engagement during the COVID-19 quarantine. Advances in Physiology Education, 44(4), 679–683. https://doi.org/10.1152/advan.00131.2020

OECD (2016), PISA 2015 Results (Volume II): Policies and Practices for Successful Schools, PISA, OECD Publishing, Paris, https://doi.org/10.1787/9789264267510-en.

OECD Future of Education and Skills 2030: OECD Learning Compass 2030. (2019). [Ebook] (pp. 86-87). Retrieved 28 August

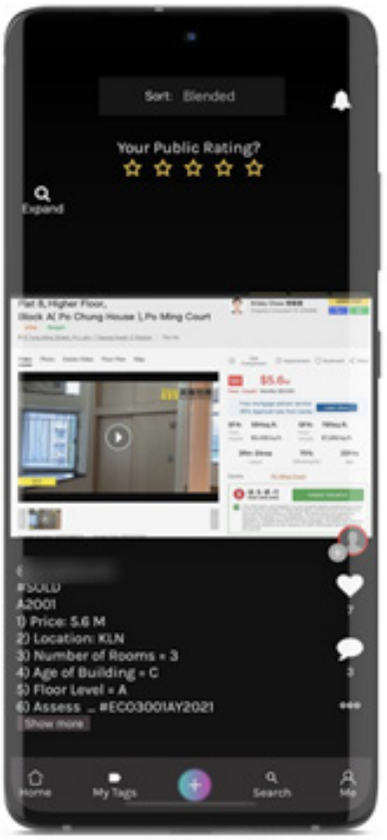
2021, from https://www.oecd.org/education/2030-project/teaching-and-lear ning/learning/learning-compass-2030/OECD_Learning_Compas s_2030_Concept_Note_Series.pdf.

Schmoelz, A. (2018). Enabling co-creativity through digital storytelling in education. Thinking Skills and Creativity, 28, 1–13. https://doi.org/10.1016/j.tsc.2018.02.002

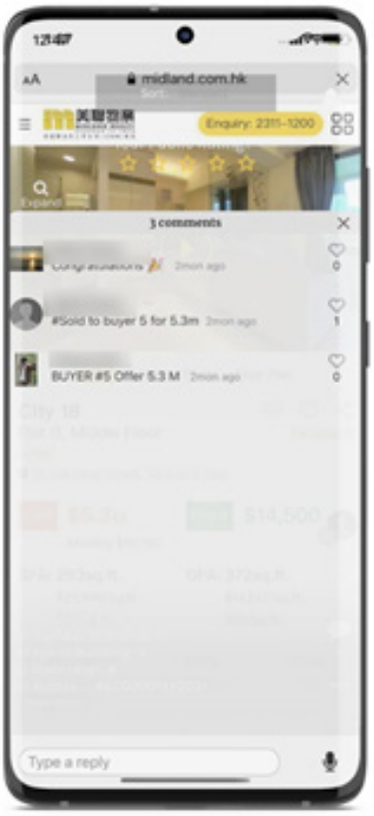
van Roy, R., & Zaman, B. (2018). Need-supporting gamification in education: An assessment of motivational effects over time. Computers & Education, 127, 283–297. https://doi.org/10.1016/j.compedu.2018.08.018

Zheng, X., Xia, Y., Hui, E. C. M., & Zheng, L. (2018). Urban housing demand, permanent income and uncertainty: Microdata analysis of Hong Kong's rental market. Habitat International, 74, 9–17. https://doi.org/10.1016/j.habitatint.2018.02.004

APPENDICES:



Sellers post properties on the Soqqle application



Buyers and sellers transact using comments, with advice by the instructor

Diffusion of Innovation in Online Learning and Practical Studies in Event Organizer Management Lecture During the Covid-19 Pandemic

[1]**Lenny Setyowati**

[1]setyowati@unika.ac.id

[1] Department of Communication Science, Law and Communication Faculty,
Soegijapranata Catholic University, Semarang, Indonesia

Abstract: As one of the products in the modern digital era, online learning offers a new way to meet human needs in the context of higher education institutions. The learning management system was implemented to complement the direct learning system. However, only a small percentage of campus organization members are willing to use it. At the beginning of 2020, we know that Covid-19 cases are starting to be found in Indonesia and to reduce its spread, the Indonesian government imposed restrictions on community activities (PKM). SCU followed up by conducting online learning since mid-March 2020 through the Learning Management System, we call the platform as cyber.unika.ac.id and supercyber.unika.ac.id that is divided for ten faculties.

The phenomenon of online learning as part of an innovative product of change, can be studied using the development from the perspective of the diffusion of information and influence theory initiated by Everett Rogers and his colleagues, which was later known as innovation diffusion theory. This theory focuses on the phenomenon of social change that occurs in society, due to new technological innovations.

"Event Organizer Management" (EOM) is one of the lecture held online in the odd semester of the 2020/2021 academic year. The students can have an overview of the process of organizing events, starting from the planning, financial management, implementation to evaluation stages. In the EOM course there is a practical studies for students, in groups. They organize an event with different themes such as: Event Organizer Seminar, Public Speaking Seminar, Book Review, Photography Competition and Exhibition, Film Festival, and Music Parade. This practical studies are different since the pandemic situation, the events must be held online.

Keywords: Online learning; Soegijapranata Catholic University; Diffusion innovation; Event Organizer Management

ELearning Forum Asia 2021

Augmenting the Virtual Environment:
Technology – Innovation – Humanity

Adaptive e-Learning

INTRODUCTION

As one of the products in the modern digital era, online learning offers a new way to meet human needs in the context of higher education institutions. Unlike the conventional system which requires a number of people to meet and gather in one place at the same time, online learning does not require mass individual meetings in one place. They can make contact

virtually through their respective technological devices such as laptops, computers, or mobile phones that are affiliated with an active internet network. Cost efficiencies in the use of electricity and human mobility are achieved. In addition, the use of time in this activity can also be optimized.

But on the other hand, this phenomenon does not directly provide changes in higher education institutions, so it requires a long process of change. First time, the leaders of Soegijapranata Catholic University (SCU) encouraged the use of this online learning system in 2011. The Learning Management System (LMS) was implemented to complement the direct learning system. However, only a small percentage of campus organization members are willing to use this new system.

At the beginning of 2020, we knew that Covid-19 cases are starting to be found in Indonesia, to reduce its spread, the Indonesian government imposed restrictions on community activities (PKM). The government also limits teaching and learning activities in universities by issuing a Regulation of the Ministry of Education and Culture (Kemendikbud) of the Directorate of Higher Education Number 1 of 2020 concerning Prevention of the Spread of Corona Virus Disease (Covid-19) in Higher Education. The Ministry of Education and Culture instructs universities to conduct distance learning and advised students to study from their homes. SCU followed up by conducting online learning since the middle of March 2020 through the LMS, we call the platform as cyber.unika.ac.id and supercyber.unika.ac.id, these are divided for ten faculties. For Communication Science Department, we use supercyber.unika.ac.id. for the Learning Management System.

DIFFUSION OF INNOVATION

The phenomenon of online learning as part of an innovative product of change, can be studied using the development from the perspective of the diffusion of information and influence theory initiated by Everett Rogers and his colleagues, which was later known as innovation of diffusion theory. This theory focuses on the phenomenon of social change that occurs in society, due to new technological innovations. According to Stephen W. Littlejohn (2009), Everett Rogers tries to provide an explanation of how the relationship spreads from the process of social change. In this process there are a number of prominent aspects, namely invention, diffusion (or communication), and consequences (Littlejohn, 2009: 307-308). There are several stages when the new technology is introduced:

a) Most people become aware because of the information about the innovation from the mass media.
b) The innovation will be adopted by a very small group of innovators, or early adopters.
c) Opinion leaders will learn from early adopters and try to apply it to themselves first.
d) When these opinion leaders have found their usage, they will recommend it to their friends (the opinion followers).
e) Finally, after many people adopt it, including late adopters, changes occur.

First, inventions or the discovery of new ideas in the context of the online learning phenomenon on the SCU are people who are in the leadership ranks of the campus led by the Rector and Vice-Rectors. They are the idea creators or parties who have modified old ideas, namely academic activities that used to have to be carried out on campus, so that they become more situational. In the concept of diffusion of innovations they are referred to as agents of change.

Second, diffusion or the process of spreading new ideas in this context is carried out from creators to people who are early adopters, namely the first generation consumer groups who are exposed to product promotion activities, through mass media (or promotional media). In this process, people who become opinion leaders aware of the existence of innovative products through early adopters or those closest to them, such as family members, staff, or friends. Regarding the opinion leader, the online learning process was represented by the Information System Management Technical Implementation Unit (UPT MSI)

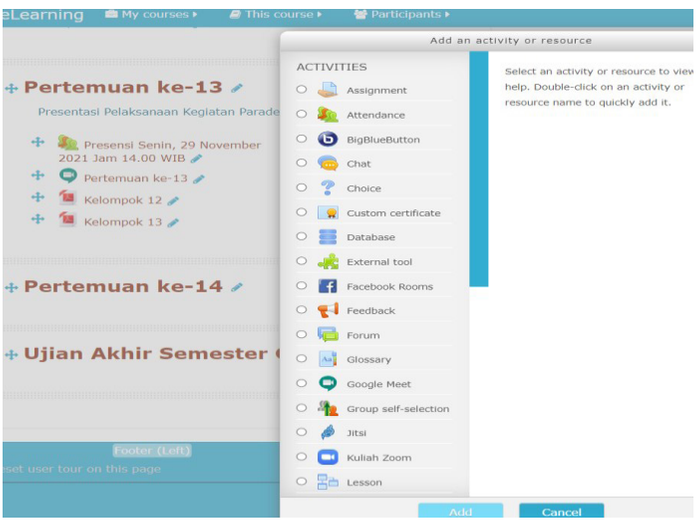
which used the Learning Management System (LMS) since 2011.

In 2013, the LMS began to be managed by two supporting units, there are the Information System Management Unit (UPT MSI) and the Library Unit (UPT Library). In 2015, system development was carried out through a cyber learning program. In 2017, cyber learning was managed specifically by the Institute for the Study and Development of Education (LP3), which held structured training activities on the use of cyber.unika.ac.id. In this process, the number of lecturers or teaching staffs who used these facilities began to increase compared to the previous period. They took advantages of these facilities in the learning process and anti-plagiarism scan plug-in facilities. The change in attitude and support from the Head of the UPT Library, Head of LP3 (Education Development Unit), and a number of lecturers show that opinion leaders are starting to find the benefits of innovative ideas initiated by university leaders and are starting to spread the goodness of these products from their experiences. However, at this phase, some individuals from the digital immigrant group still have not fully optimized this new technology.

There is a complete change in the institutional online learning system at SCU driven by external factors, namely the Covid-19 pandemic which has begun to spread widely. The virus pandemic prompted the implementation of comprehensive online learning by university leaders, resulting in a transition process for digital immigrant groups to join digital native groups in using internetbased technology.

Third, the consequences or impacts generated by the existence of these new ideas in society. Even Rogers said that one thing that cannot be denied is that an innovation will have consequences or impacts by they functional or dysfunctional, direct or indirect, manifest or latent. However, normally agents of change always expect that the impact will be functional, direct, and manifest (Littlejohn, 2017: 410). Associated with the phenomenon of online learning, there are two direct impacts that arise, namely positive and negative. From the positive side, this online learning system can be accessed anytime and anywhere through the technology devices used by its users. They don't necessarily have to be physically present on campus or in class, especially at this condition.

The cyber.unika.ac.id page can be used by lecturers to upload lecture materials, so that students can access them more easily especially during this pandemic situation. The lecturers also provide explanations and two-way interactions with students through the video conference menu Big Blue Button when online learning process. In addition, student attendance can be done online through the attendance menu of their respective technology devices. Assignments, quizzes from lecturers and the implementation of the even semester exams for the 2020/2021 academic year were presented in the menu on cyber.unika.ac.id, the time to start work and the deadline for collection can be set by the lecturer, antiplagiarism checks can be set too in cyber system. Students can see the grades that have been given by the lecturer along with their notes if the lecturer provides input, comments on assignments that have been done.



Picture 1: Menus in supercyber.unika.ac.id

However, on the other hand, there are challenges in optimizing the use of this technology. Those who belong to the digital immigrant group feel the most impact than the digital native group, so it requires more time, energy, motivation and concentration of mind for the digital immigrant group to fully use this online service. The emergence of culture shock shows that an innovation will have consequences. There was a social change where innovation was adopted by some lecturers and students. However, on the other hand, in the early stages of the process of adopting this new technology, it has not been maximized. There is a delay in the adoption process because not all lecturers are encouraged to use this innovation. In mid of March, 2020 when the Covid-19 made us in the pandemic situation, it finally pushed all lecturers and students followed them to adopt this innovation by using the learning model system at Unika, namely cyber.unika.ac.id and supercyber.unika.ac.id

Picture 2: supercyber.unika.ac.id

EVENT ORGANIZER MANAGEMENT LECTURE

Event Organizer Management (EOM) is one of the lecture which held online in the odd semester of the 2020/2021 academic year. Learning achievement for the subject that students can have an overview of the process of organizing events, starting from the planning, financial management, implementation to evaluation stages. In the EOM lecture there is a practical studies that students in groups must organize an event in different themes such as: Event Organizer Seminar, Public Speaking Seminar, Book Review, Photography Competition and Exhibition, Watching Movie, and Music Parade. This practical studies were different, since the pandemic situation, so the event must be held online. This situation was so different and as a new experience for students organized online event during pandemic.

Picture 3: EOM Lecture in supercyber.unika.ac.id

According to Milman in Rahayu, the use of digital technology allows students and lecturers to be in different places during the learning process. One form of alternative learning during the Covid-19 pandemic is online learning (Firman and Rahman, 2020: 81). The effectiveness of online learning can be seen from the creativity of students in independent learning and the narrowing of the distance between lecturers and students. Joan E. Sieber, a psychologist and Professor Emeritus from California State University, said the same thing in an article entitled "Misconceptions and Realities about Online Teaching". He stated, among other things:

> Emphasize early in the course the importance of being skillful learners, make students aware of the characteristics of highly effective learners, design every assignment to enhance students' skills as learners, and encourage students to use tools and skills that enhance their learning while also saving their time (2005: 335)

So it can be concluded that the effectiveness of online EOM lecture can be seen in the realization of maximum learning outcomes and learning participants can absorb lecture material and practice it.

According to Moore, Dickson-Deane, and Galyen (2011) online learning is learning that uses the internet network with accessibility, connectivity, flexibility, and the ability to bring up various types of learning interactions. In EOM online lecture there are various types of learning i.e.: face-to-face via video conference on the supercyber.unika.ac.id menus such as quizzes, assignments both individually and in groups, being observers in events held by other groups, asking groups who presented their thematic events. This interactive learning model is a step to encourage students to use the theory they already learnt about how to organize and carry out events.

This EOM lecture began by preparing learning materials such as: Managing Event Projects, Event Design and Production, Event Operations,

Managing Human Resources, Event Finance, and Event Marketing. After the online learning from the first meeting until the 7th meeting, then she discussed with the students the themes of the event they should held and divided them into groups. The student groups were the "Event Organizers" groups. They will organize the thematic events after the midterm exams. The lecturer also attended several performances of the events and saw the creativity and teamwork of each groups.

While supervising the work of these student groups, the lecturer was following Joan E. Sieber's idea that a teacher, in online lectures, could encourage students to incorporate their personal experiences (for example, in group or private assignments) in the learning process. This method will help them in mastering the learning material. In addition, teachers can also organize roleplaying games or simulations to complete the learning process. In this EOM lecture, students also shared their personal experiences as event organizers when they evaluated their events and presented in online class.

In this EOM lecture, the lecturere divided the students into 20 groups of "Event Organizers" based on specific event themes. The groups were:

1. 4 groups holding an event with the theme "Seminar Event Organizer". Each of the 4 groups gave their event a name: An Event in the Midst of a Pandemic, I Love to Organize, Learning Business for Beginners, and Party in the Midst of Pandemic.
2. 3 groups holding an event with the theme "Public Speaking Seminar", namely Agent of Change, Filtering Before Sharing, and Public Speaking in the Public Domain.
3. 4 groups that held the "Book Review" with the topics: Building Youths who are Creative, Expressive and Creative in Writing, Just Destroy This Book, and Good Vibes Good Lives.
4. 3 groups that organized the "Photography Competition and Exhibition" with the themes: Behind the New Normal Lens, Frame Your Street, and Photography Know It Love It.
5. 3 groups that held the "Watch Film" event with the themes: Awahita, Kofi-Milk Surgery and the

"Tilik" Film Nobar Webinar.

6. 3 groups that held a Music Parade with the theme: Santuy Sunday Night, Performing Music and Sharing on Air, and Pandemusika.

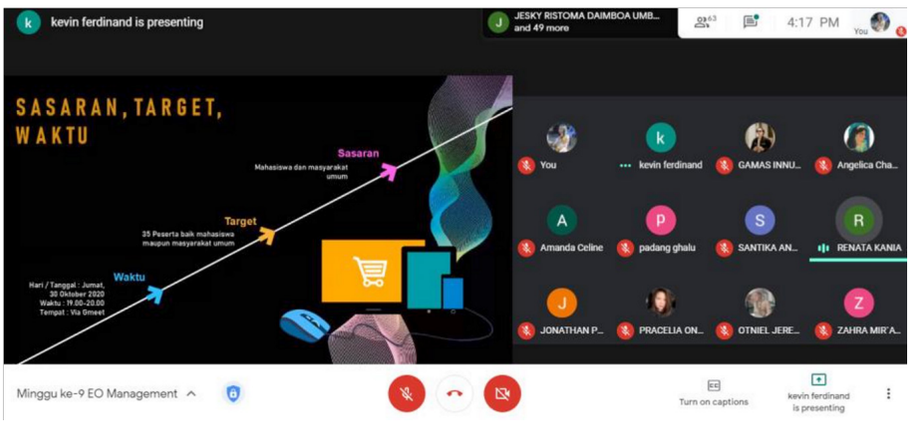
DISCUSSION

Since we are still in pandemic situation, the Event Organizer Management" (EOM) is one of the courses which held online in the odd semester of the 2020/2021 academic year. Student should held an event as an output of this lecture.

At first, some students thought that it would be quite difficult to carry out online lecture activities through supercyber. They had to carry out activities according to what their group got as an EOM practical studies, In the diffusion of innovation theory, the groups that find it difficult are called late adopters, while those who are more adaptable are called early adopters.

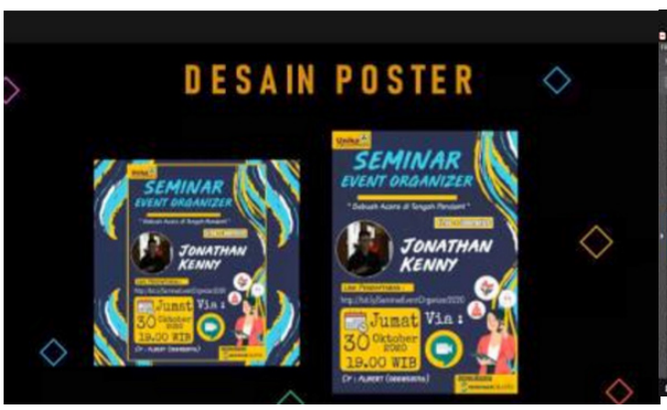
The task of lecturers must be able to become early adopters because they as a key opinion leader who involve students to follow the changes in learning that occur, so that students who previously thought this was a difficult thing became easier, practical studies to organize some events that are usually carried out offline are now carried out online because of the pandemic.

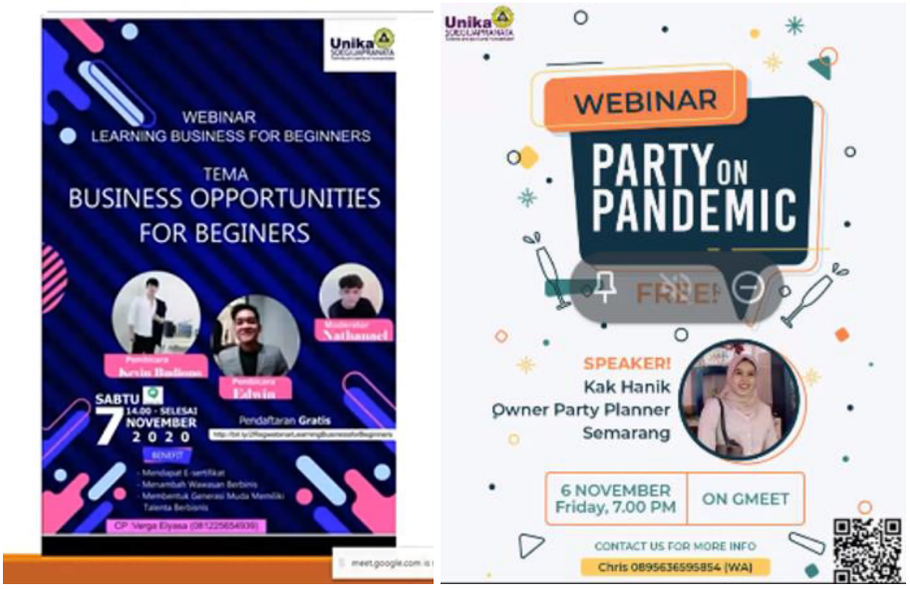
These are the documentation during their presentation as a final report after they held events.



Picture 4: Presentation One of the Group that held Seminar Event Organizer

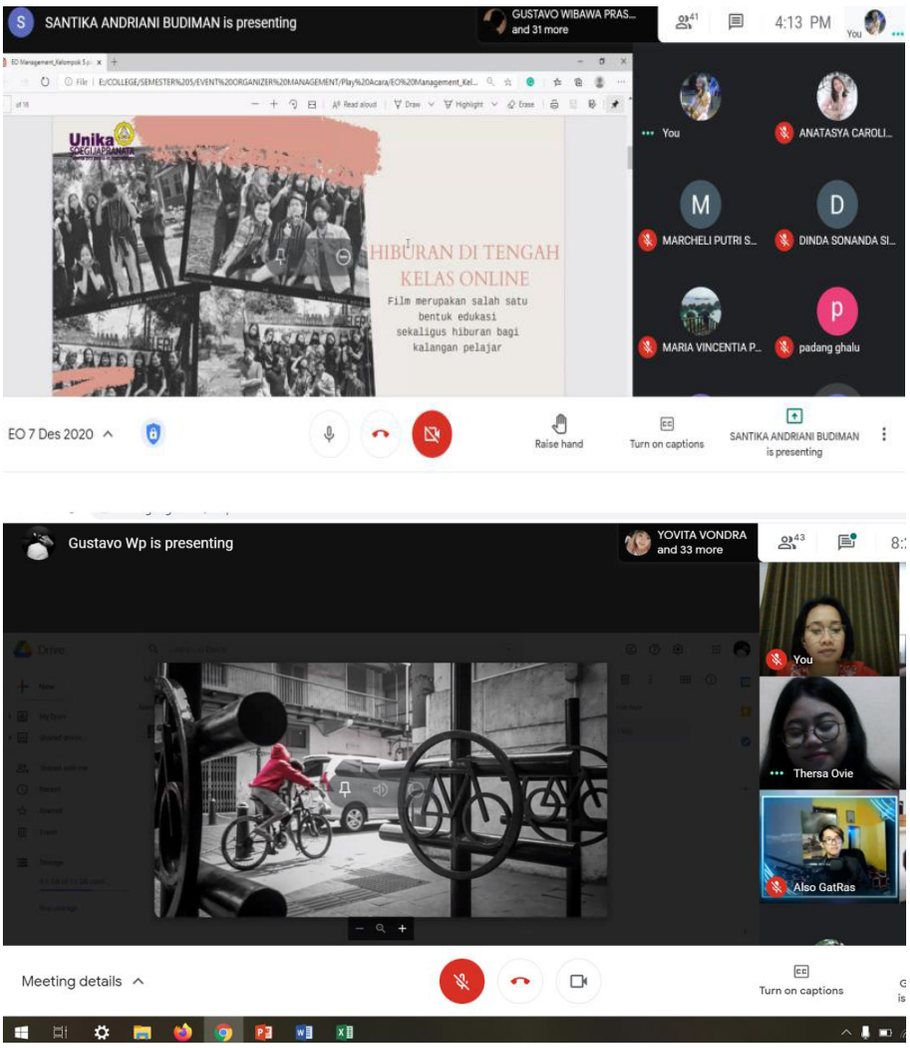
Picture 4 describe when one of the group presented in online class about targetting the audiens, time schedule for their event in Big Blue Button



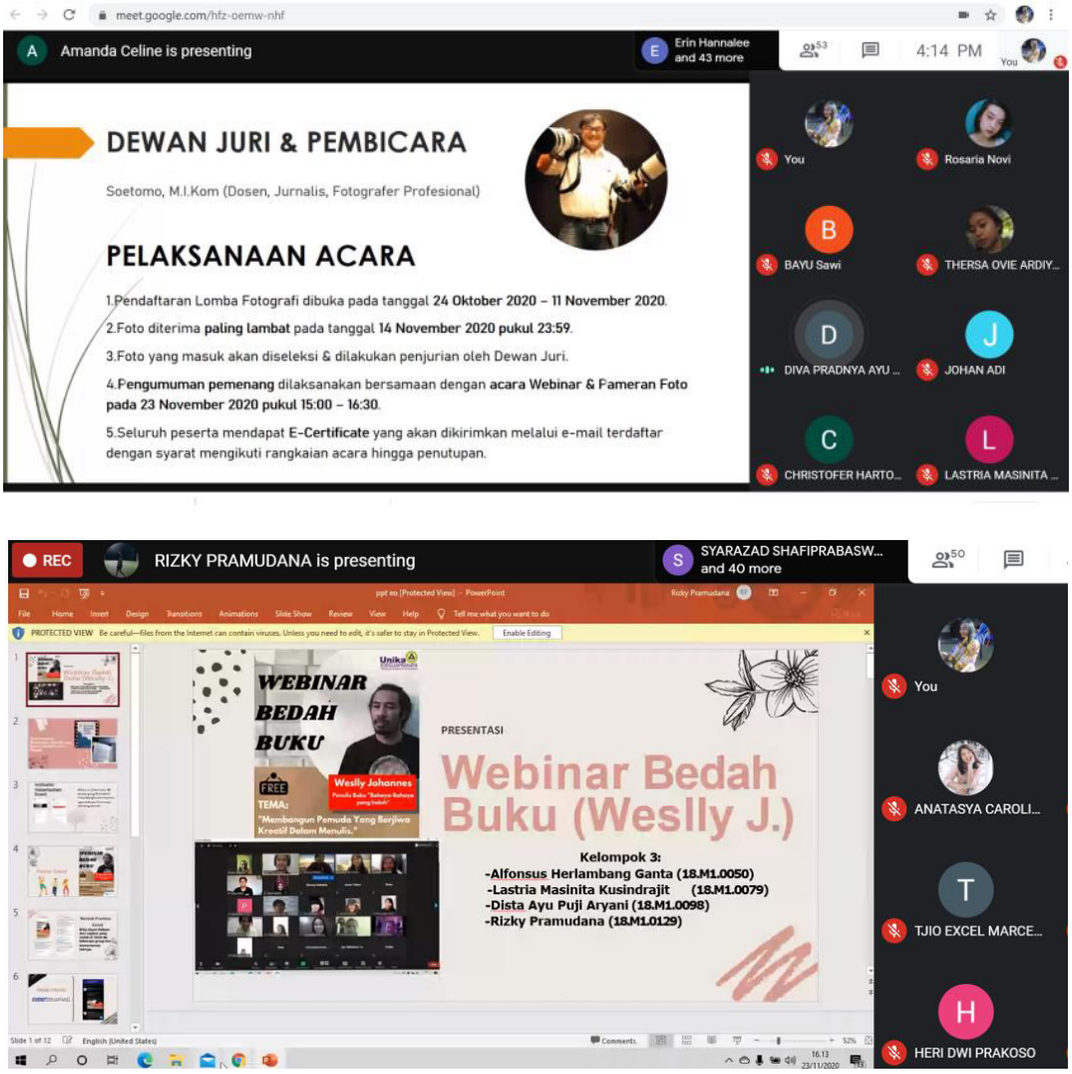


Picture 5-8: Poster Design for Seminar Event Organizer

From picture 5-8, audiens knew about the events form the publication, and this is the poster design about the Seminar Eevent Organizer that 4 groups made as their practical studies.



Picture 9-10: Presentations of Practical Studies in Online Class



Picture 11-12: Presentations of Practical Studies in Online Class

Picture 9-12, these are the presentation each groups about their events. They presented the process of organizing events, starting from the planning, financial management, implementation to event's evaluations. The same event theme was presented in the same week. In one meeting there were 3 until 4 groups as the presenters to presented their events that they already done, so there were 6 weeks for presentation.

After the final examination, the lecturer interviewed several students in writing about this EOM course. For this reason, the lecture distributed questionnaires to 24 students, and 23 students answered it. To the students, the lecture asked about the benefits of took this lecture, the experience and knowledge they gained when attending lectures, when preparing for events and when contacting the speakers, performers and resource persons in staging those events.

Several students stated that attending this EOM course was not only about learning theory, but also learning how to become an event organizer. In addition, they also claimed to be able to learn from each other's strengths and weaknesses as event organizers:

> Learn things that are not just theory. Learn more about how to host a good and memorable event. Interestingly, from this course, I was able to experience creating various types of events, from my own events, or events held by friends. There is an opportunity to host an event. One interesting thing that I got from learning EOM is that the experience doesn't have to come from myself. During approximately 14 study meetings with friends and Mrs. Lenny, we shared a lot about each other's events. This is where I get a lot of stories about my friends' experiences at different events. I am very happy because I can share with

each other. And I hope that in the future all these experiences can be a lesson for myself.

They also stated that they had gained valuable experience and knowledge in making these events interesting:

> The experience gained is making online photography competitions and exhibitions. The knowledge I get is how to arrange events well in as much detail as possible. Ups and downs, happy and hard, wrong and right, tired of being happy, the failure of my friends in organizing an event is an experience for me. Through events that my group and I organize ourselves, the knowledge gained is how to make an event interesting and successful. Being able to make an event even if it's only with 4 people is a really interesting experience. The experience of organizing events that may not be in my field, so it is beyond my realm. Gain knowledge about proposal writing, how to attract visitors in events that will definitely be useful for the future.

In addition, they also stated the importance of preparing the event in detail, the right promotion strategy, financial arrangements, and the committee's strategy which is few in number and far from each other due to the pandemic:

It turns out that making an online event is not as easy as you think, we have to develop the right strategy so that our promotions can be interesting in a short time.

> How to arrange an event that is effective and liked by many people, manage finances for the event, find performers, sponsorship and media partners, but the most impressive thing is how we make an event during a pandemic like this with group members from different places and numbers. a little bit. Meet the new experience of hosting your own event online. Never before. The knowledge gained is that an event needs careful preparation from various aspects. In preparing the event, we must detail to the end in terms of time and supervision.

Finally they told about how to be patient and persistent event organizers, especially when contacting the performers:

> Looking for resource persons who match the topic, negotiate both the price and the event. it takes effort and patience for sure. Quite complicated, negotiations regarding price and content. Experience: more familiar with the character of the resource person himself. How to behave and speak in a relaxed but polite manner with the resource person, even if only through a short message. Knowledge: more or less understand what street photography is all about. Because the material from the speakers is very interesting. It turned out that many lessons were learned, which after we prepared could not be accepted immediately, and had to renegotiate and negotiate. Experience communicating with new people, who are not yet known. Then speak politely and standardly to negotiate as a resource at the event so that the resource person is willing to fill the event that is made.

CONCLUSION

The task of lecturers must be able to become early adopters because they as a key opinion leader who involve students to follow the changes in learning that occur, so that students who previously thought this was a difficult thing became easier, practical studies to organize some events that are usually carried out offline are now carried out online because of the pandemic.

Therefore, lecturers in online learning are required to play more than their traditional roles as educators who only transmit knowledge. A lecturer in online learning must be a facilitator as in adult education. On this point Simone C. O. Conceição, a professor of Adult and Continuing Education at the University of Wisconsin-Milwaukee School of Education stated:

> Teaching online requires a considerable amount of time to design, develop, and deliver a course. In the online environment, even more than in the face-to-face environment, it is critical that the educator move beyond traditional notions of the instructor as conveyor of information to embody the role long espoused in adult education literature of instructor as facilitator. The instructor must gain comfort and proficiency

in using the Web as the primary instructor-learner connection in order to teach effectively without visual and verbal cues (2007:5).

REFERENCES

Conceição, Simone C. O. (2007). *Understanding the Environment for Online Teaching, New Directions for Adult and Continuing Education*, no. 113, Spring 2007 Wiley Periodicals, Inc. Published online in Wiley Inter Science (www.interscience.wiley.com) DOI: 10.1002/ace.242.

Littlejohn, Stephen W., Foss, Karen A. (2009). *Encyclopedia of Communication Theory*. California: SAGE Publications, Inc.

Littlejohn, Stephen W., Foss, Karen A., Oetzel, John G. (2017). *Theories of Human Communication*. Illinois: Wafeland Press, Inc.

Moore, J. L., Dickson-Deane, C., & Galyen, K. (et.al.) (2011). *"E-Learning, Online Learning, and Distance Learning Environments: Are they the same?", The Internet and Higher Education*, https://doi.org/10.1016/j.iheduc.2010.10.001

N. B., Milman. (2015). *Distance Education* in *International Encyclopedia of the Social & Behavioral Sciences: Second Edition*, in Firman & Rahman, Sari Rahayu. (2020). *"Pembelajaran Online di Tengah Pandemi Covid-19"*, Indonesian Journal of Educational Science (IJES) Volume 02, No 02 Maret 2020.

Sieber, E. Joan. (2005). *Misconceptions and Realities about Teaching Online*, California State University, East Bay, *Science and Engineering Ethics, Volume 11, Issue 3*.

Projecting the Impact of Integrated Service-Learning Projects on History Graduates of Lady Doak College through Online Learning Approach

[1]T. Durga Devi, [2]B. Aashika and [3]N. Kavipriya

[1]durgadevi@ldc.edu.in, [2]18his001@ldc.edu.in,
[3]18his016@ldc.edu.in

[1]Assistant Professor, Department of History, Lady Doak College, Madurai, Tamil Nadu, India
[2, 3] Department of History, Lady Doak College, Madurai, Tamil Nadu, India

Abstract: Background: Service-learning is a universally accepted student-centric pedagogy that provides experiential learning by integrating academic study with community engagement activities. Lady Doak College is the pioneer institution in Tamil Nadu to introduce integrated service-learning project entitled Life Frontier Engagement (LiFE). It is the capstone of the Integrated Curricular Model, introduced in the undergraduate level since 2013. It is offered as a core major course for all final year undergraduate students in semesters V and VI from the academic year 2015 – 2016. The course opened the avenue for participatory learning and research to the students by engaging them with the community and thereby enhancing personal, academic and civic consciousness of students.

The Covid-19 pandemic has created a devastating impact globally. Humans as social animals were always engaged with others. The pandemic and the restrictions imposed by the government has altered the lives of the people overnight. Though there were sufferings, the pandemic did not hinder the humane activities of the people. It proved that social distancing cannot stop community engagement. In today's world, digital technology has made it possible to connect with fellow beings. It has augmented digital transformation within the education system. History, as a record of events, represents a study of cause, change and consequences. The pandemic has made the educationalists to analyse the causes, admit the challenges and adapt new modes in the teaching-learning process using the technological advancement especially in the service-learning process. To maintain the sustainability of the LiFE course, Lady Doak College has adopted e-service-learning to strengthen participatory learning and research during the academic year 2020 – 2021.

Purpose: This study attempts to highlight the effectiveness of integrated service-learning projects on history graduates of Lady Doak College, Madurai through online learning approach.

Methodology/Approach: The study has been undertaken by using survey and interview method. History graduates of Lady Doak College belonging from 2013 to 2017 batch were the community partners for the study. The study has been done after five years of implementation of the LiFE course.

Findings: LiFE created a platform for the history major students to relate their academic learning in the classroom to real-life learning in the community. It facilitated students to understand the process of historical

ELearning Forum Asia 2021

Augmenting the Virtual Environment:
Technology – Innovation – Humanity

Adaptive e-Learning

research and enabled them to recognise the importance of oral and local history in the reconstruction of historical and cultural heritage.

Implications: Integrated service-learning projects fostered students' role in the preservation and conservation of history and heritage. It also enhanced their sense of civic responsibility and involvement in the community development.

Keywords: service-learning, experiential learning, participatory research, community engagement, civic responsibility

INTRODUCTION

Service-learning is the universally accepted student-centric pedagogy that provides experiential learning by integrating academic study with community engagement activities (Ngai et al., 2018, pp. 55-80). Reports indicate that service-learning has played a pivotal role in enhancing personal, academic, civic consciousness among students and strengthening community partnership (Ahmad et al., 2021, pp. 1699-1706; Sze-Yeung Lai et al., 2021, pp. 400-415). Universities and colleges have begun to incorporate service-learning into the curriculum to combine high-quality learning with high-quality service (Straus & Eckenrode, 2014, pp. 253-266).

The very nature of history involves experiential learning to understand the past. Historical research focusing on grassroots approach requires community-based research or service-learning to identify multiple perspectives of historical evidence (Crothers, 2002, pp. 1446-1451). Though there are reports indicating the benefits of incorporating service-learning into history course (Crothers, 2002, pp. 1446-1451; Smith, 2009, pp. 50-73; Straus & Eckenrode, 2014, pp. 253-266; Morais, 2018, pp. 49-76), there are no reports highlighting the impact of integrated service-learning projects on history graduates in the southern part of Tamil Nadu. This study attempts to highlight the efficiency of integrated service-learning projects on history graduates of Lady Doak College, Madurai through online learning approach.

A. Life Frontier Engagement Course

Lady Doak College, a premier Christian institution and the first Women's College (1948) in Madurai, Tamil Nadu, India, was the brainchild of Ms. Katie Wilcox, an American missionary with a vision and fervor to empower women. The college aims to impart holistic education for the empowerment of women from all strata of society by promoting academic excellence, employability and leadership with social commitment. The objectives of the college are on par with participatory learning and research.[1]

Life Frontier Engagement (LiFE) is the significant initiative of the college to impart moral and spiritual values by engaging the students in experiential learning. Lady Doak College is the pioneer institution in Tamil Nadu to introduce integrated service-learning project entitled Life Frontier Engagement (LiFE). It is the capstone of the Integrated Curricular Model, introduced in the undergraduate level since 2013. It is offered as a core major course for all final year undergraduate students in semesters V and VI from the academic year 2015 – 2016. Prior to the introduction of LiFE course, the college had offered service-learning programmes to interested students with extra credits. The mission of enhancing the then existing service-learning programme into Life Frontier Engagement course is to promote service-learning as an integral and enriching aspect of every student's education and to foster the institution's engagement with the larger community that furthers the academic and public purposes of the institution. Courses have been framed by each department based on their core major papers and their experiences with service-learning program in consultation with subject experts.

1 https://www.ladydoakcollege.edu.in/Vis_Mis_Quality.html

Since its establishment in 1971, the Department of History of the college has made several efforts in enhancing the scope of history to bring the best out of the students to meet the real-life challenges. Keeping in view the changing scenario, the curriculum has been modified and restructured periodically to suit the needs of the students and to enhance their ability to face the society with confidence. The department has designed LiFE course on the theme "Responsibilities of a Citizen", through which, it strives to create opportunities for students of history to learn in partnership with the community and to develop competencies that promote the advancement of a socially responsible citizenry (Priscilla et al. 2015, p. 4).

B. Covid-19 Pandemic and LiFE

The Covid-19 pandemic has created a devastating impact globally. Humans as social animals were always engaged with others but the pandemic and the restrictions imposed by the government has altered the lives of the people overnight. In spite of the sufferings caused, the pandemic did not hinder the humane activities of the people. It proved that social distancing cannot stop community engagement. In today's world, digital technology has made it possible to connect with fellow beings. It has augmented digital transformation within the education system too. History, as a record of events, represents a study of cause, change and consequences. The pandemic has made the educationalists to analyse the causes, admit the challenges and adapt new modes in the teaching-learning process using the technological advancement especially in the service-learning process. To maintain the sustainability of the LiFE course, Lady Doak College has adopted e-service-learning to strengthen participatory learning and research during the academic year 2020 – 2021.

METHODS

The study has been undertaken by using survey and interview method. History graduates of Lady Doak College belonging from 2013 to 2017 batches were the community partners for the study. The study has been done after five years of implementation of the LiFE course.

A. Survey Method

Initial discussion with the community partners was conducted through Whatsapp group chat highlighting the purpose and scope of the study. Survey questionnaire was prepared with the support of the Centre for Life Frontier Engagement of the College using Google Forms. The form contained structured questions that covered quantitative data and open-ended questions that yielded comments. Structured questions focused on assessing the effectiveness of the LiFE course on personal and career growth of the history graduates and their involvement in societal needs. Open-ended questions were used to obtain the view-points of the community partners regarding the strengths of the course and their recommendations for improvement (Figure 1). A total of 82 history graduates had actively participated in the study (Figure 2).

Figure 1: Questionnaire https://forms.gle/GSt435JquY1wG6Kk7

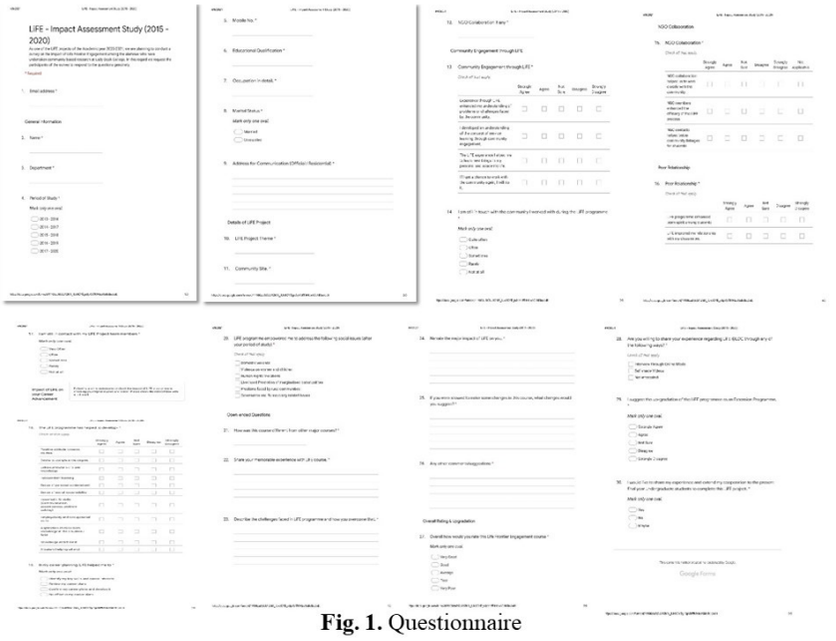
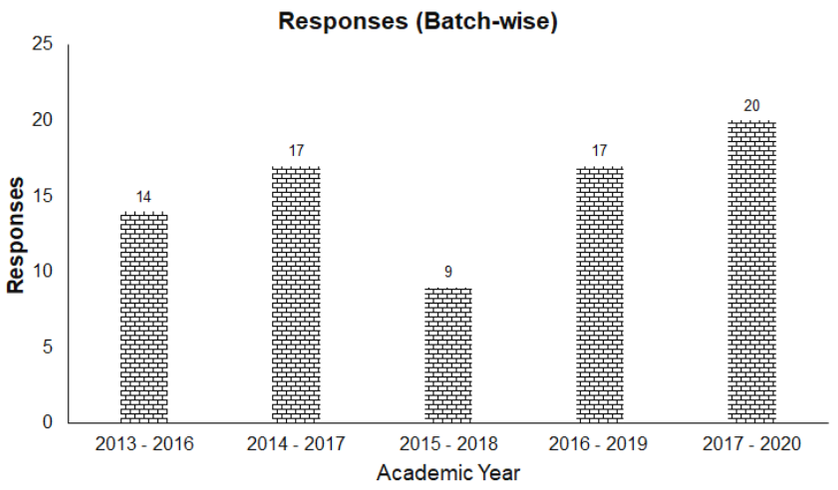


Fig. 1. Questionnaire

Figure 2: Responses (Batch-wise)



B. Interview Method

In addition to survey, personalized experiences and viewpoints were collected through interactions over phone and Google Meet. Apart from that, respondents have shared their LiFE experiences by sending photographs, write-ups, poems and drawings.[2] The purpose of using interview method was to collect qualitative data depicting the benefits of LiFE course, its strengths, weaknesses, opportunity and challenges. It also improved the authenticity of the data collected through survey.

C. Data Analysis

The data collected through survey were analyzed using Microsoft Office 10 (MS Excel).

2 https://www.ladydoakcollege.edu.in/website/history/7b11%20-%20LiFE%20Magazine%20(2020-21)_Dept.%20of%20History.pdf

RESULTS

A. Promoting Participatory Learning and Research

LiFE is a one-year blended learning process which encompasses the thorough integration of project and academic content with the great synergy of community engagement and learning experiences. It promotes participatory learning and research through active involvement of the researchers, faculty, community partners, subject experts and representatives from governmental and non-governmental organisations. Faculty facilitators and guides were assigned to provide structured opportunities for students to reflect critically on their community experience through writing, reading, group discussion and classroom activities (Priscilla et al. 2015, p. 2).

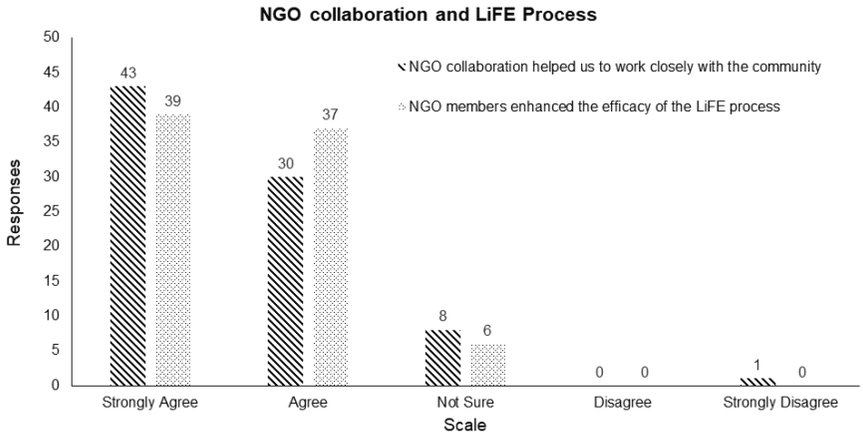
A community with a need was identified with the collaborative support of DHAN (Development of Humane Action) Foundation, Madurai, an NGO which assisted the Department of History from the initial stages of the LiFE course in finding a potential community site and shared their expertise by introducing the department to the community partners. Similarly, curators of Thirumalai Nayak Mahal and Gandhi Museum of Madurai facilitated to recognize community strengths and identify issues which needed to be addressed. In addition, their expertise has been utilised in the collection and interpretation of data. With their support, LiFE projects were undertaken in the historic and heritage sites of Madurai viz., Arittpatti, Thiruparankundram, Thirumalai Nayak Mahal and Gandhi Museum (Figure 3). Collaborative agencies acted as a bridge between the community and students in the reciprocal transfer of knowledge and skills (Figure 4).

Figure 3: NGO Collaboration and LiFE Projects

Academic Year	Governmental / NGO Collaboration and Subject Experts	Community Partners	Community Site	Focused Themes of LiFE Projects
2015 – 2016	DHAN Foundation, Madurai Dr. R. Venkatrraman, Historian and Dr. V. Vedachalam, Archaeologist	Melur Vattara Kalanjiyam (Women self-help group), Arittapatti Seven Hillocks Protection Society, Arittapatti Birds and Biodiversity Preservation Society	Arittapatti	i. Responsible Tourism ii. Water bodies iii. Temples and Festivals iv. Traditional Foods and Medicine v. Proverbs and its Historical Background vi. Traditional Arts vii. Artefacts and its Usage viii. Environmental Protection
2016 – 2017	DHAN Foundation, Madurai Dr. R. Venkatrraman, Historian and Dr. V. Vedachalam, Archaeologist	Melur Vattara Kalanjiyam (women self-help group), Arittapatti Seven Hillocks Protection Society, Arittapatti Birds and Biodiversity Preservation Society	Arittapatti	i. Responsible Tourism ii. Traditional Tanks iii. Festivals iv. Traditional Food v. Proverbs and Historical Implications vi. Folk Arts vii. Traditional Medicine and Women's Health viii. Environmental Protection ix. Women Empowerment and Local Community

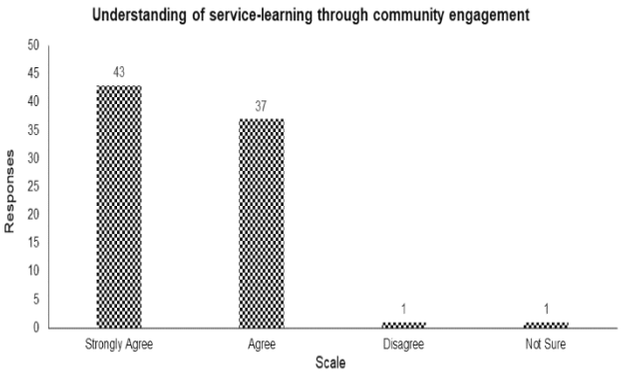
2017 – 2018	DHAN Foundation, Madurai Dr. R. Venkatrraman, Historian and Dr. V. Vedachalam, Archaeologist	Melur Vattara Kalanjiyam (Women self-help group), Arittapatti Seven Hillocks Protection Society, Arittapatti Birds and Biodiversity Preservation Society	Arittapatti	i. Responsible Tourism ii. Traditional Tanks iii. Festivals and Customs iv. Traditional Food v. Birds of Arittapatti vi. Medicinal Plants vii. Environmental Protection viii. Women and Heritage Conservation
2018 – 2019	DHAN Foundation, Madurai Dr. V. Vedachalam, Archaeologist and Dr. Sethuraman, Historian	Avvai Pengal Vattara Kalanjiam (women self-help group)	Thiruparankundram	i. Monuments ii. Festivals iii. Waterbodies iv. Environmental Challenges v. Women – Heritage based livelihood vi. Traditional games
2019 – 2020	Tamil Nadu Department of Archaeology, Madurai and Curator, Gandhi Museum, Madurai Mr. Asaithampi, Curator, Mr. Maruthu Pandi, Museum Curator	-	Thirumalai Nayak Mahal and Gandhi Museum	i. Gandhi Museum and Freedom Struggle ii. Heritage tourism in Madurai with special reference to Thirumalai Nayak Mahal iii. Impact of Urbanisation on living historical monuments in Madurai with special reference to Thirumalai Nayak Mahal iv. Programmes of Gandhi Memorial Museum v. Preservation and Conservation of Gandhi Memorial Museum

Figure 4: NGO Collaboration and LiFE Process



The pilot study and the interaction with the community helped the students to understand the real meaning of service-learning (Figure 5). The department, as part of the academic programme, organizes on the spot study to historical sites and monuments; training programs on archaeology, epigraphy and museology to offer experiential learning to the students with the guidance and supervision of subject experts. Its importance has been enhanced through LiFE course by involving students to learn from the community. LiFE activities of the department provided an opportunity to the history students to imbibe political and economic consciousness; social and cultural involvement by engaging with community partners. It created a sense of connectedness among the learners of history to relate classroom learning to real life experience.

Figure 5: Understanding of service-learning through community engagement



LiFE broke the stereotype and promoted participatory learning along with the community. It helped the learners of history to understand the significance of grassroot history and the contribution of people in the making of history (Figure 6). Exchange of knowledge took place through participatory field research. It helped to observe the community dynamics and needs; exposed the students to witness the problems and challenges of the society (Figure 7). Subject experts, faculty facilitators and NGO representatives moderated the LiFE interaction. Based on the collected information, LiFE project themes were finalized (Figure 3). Subsequently research proposal and questionnaire were developed by students which has been refined with faculty and collaborative feedback and suggestions.

Figure 6: Participatory Learning

On the spot study: Jain Bed, Arittapatti

Water conservation techniques: Expert and Community sharing at Arittapatti

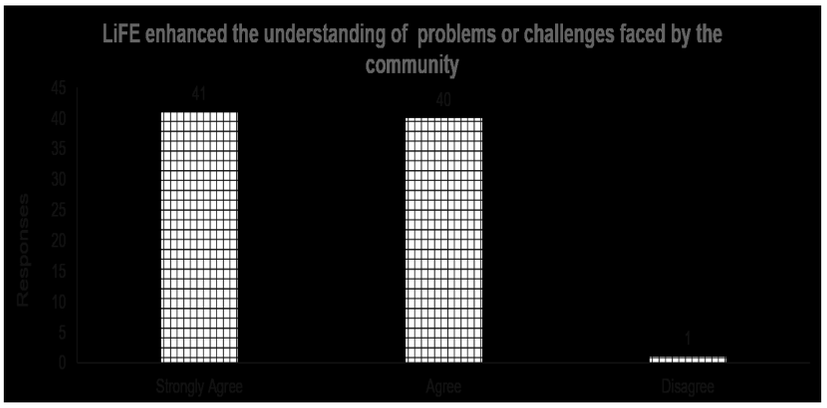
On the spot study: Dargah at Thiruparankundram

Expert sharing – Gandhi Museum

Participatory Learning: Folk Arts at Arittapatti

Reflection Session

Figure 7: Understanding of problems or challenges faced by the community



Participatory learning and research have been started with eagerness. Students collected data through questionnaire which was supplemented by the community interaction and literary sources. The collected data was analyzed and significant observations were shared with the community to appreciate their work and create awareness. Reflection has been used to boost LiFE participatory learning and research. Observations, interpretations, reflection and recommendations were documented and submitted as project report and presentation were made for accountability and improvement. Participatory learning and research exposed the students to understand the historical research process. It helped the students to identify additional information and sources to enhance their existing knowledge.

B. Personal Growth

Acceptance and respect are more crucial in the learning process. LiFE process witnessed the enhancement of intrapersonal and interpersonal competences among the students. It has made a positive impact on the students' personal efficacy and self-identity (Figure 8). As shared by the students, no disparity and discrimination were noticed among the students and the community people. Though the community engaged in their own life and occupation, they welcomed, spared their time, showed hospitality to the students and helped them in the LiFE Process. It promoted the cooperation and coordination of the students with the peers (Figure 9). It reflected in their behavioural and attitudinal change. Irrespective of learning capability, respondents got a chance to identify their skills and exhibit it before the community. It made the respondents stronger, confident, responsible and self-reliant.

Figure 8: Impact of LiFE on the personal growth of the students

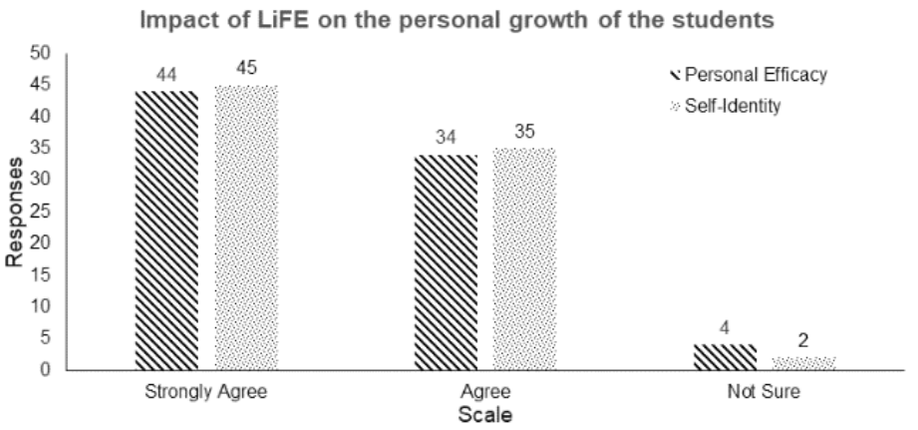
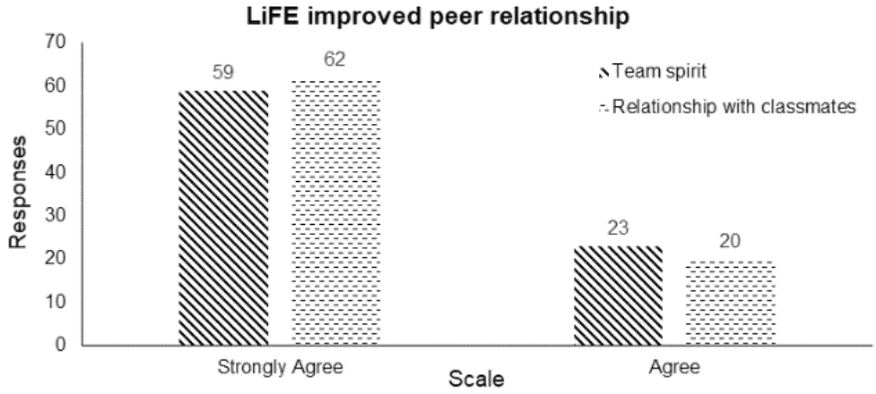


Figure 9: LiFE improved peer relationship

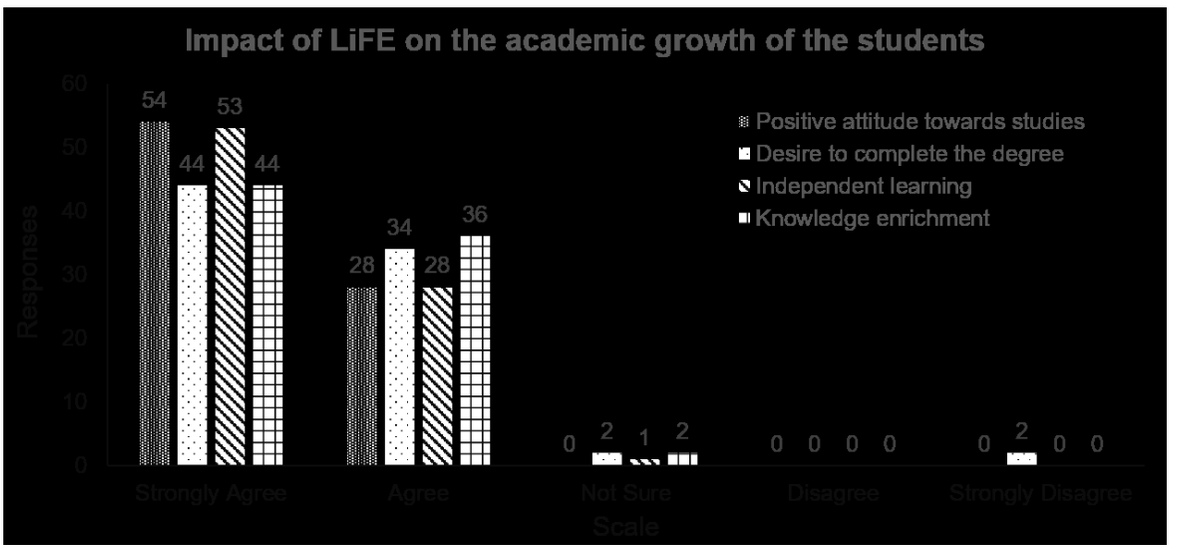


C. Academic Growth

Participatory learning of LiFE made the students to concentrate more on their academic learning. The worldly knowledge and the memory of the elders of the community inspired the students. Students witnessed transmission of oral tradition and knowledge from generation to generation. The messages have been passed down through orally, song, folktales, mythological stories and narrations, proverbs and sayings and preserving artefacts of their family by which they are providing insights into people, things and events.

LiFE process provided students with a broader and deeper understanding of the course content and enhanced positive attitude towards studies. Students started to enrich their knowledge through independent learning by reading articles, listening to elders and developing new ideas. It helped them to realise the need of concentrating more on academic knowledge (Figure 10). LiFE project themes were framed in such a way so as to enhance the theoretical knowledge through participatory learning. Participatory learning and research of LiFE familiarized the concept of the democratic structure of a community, the effective working of local self-government, social and cultural contribution of community, grassroots approach in the preservation and conservation of natural and cultural heritage. LiFE process connected academic learning to real-life learning. It stimulated students to focus on their academics and to understand the reality of doing research for the betterment of the society.

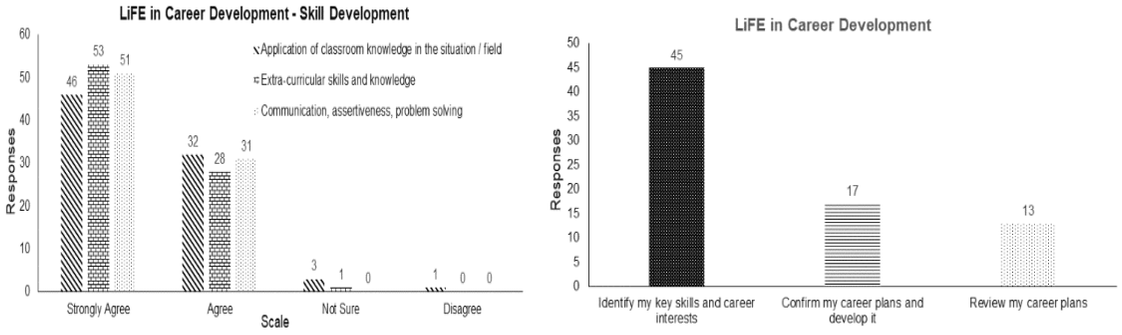
Figure 10: Impact of LiFE on the academic growth of the students



D. Career Development

LiFE process improved students' ability to apply their theoretical learning into the field. It helped the students to set their career path and to enhance career development skills. Exposure to the real-life learning, community engagement, guidance from professionals and experts and field research improved students' listening skills, oral and written communication, interpersonal skills, teamwork, integrity, commitment, time management, personal grooming, leadership, critical thinking, creative thinking and problem-solving skills (Figure 11).

Figure 11: LiFE in Career Development



LiFE process acted as a key factor to identify the inner ability of the students and motivated them to develop their skills. It broadened their career choices and paved the way for choosing suitable career. History graduates who completed LiFE course have chosen history and its allied disciplines such as Archaeology, Journalism, Social Work, Mass Media And Communication, Law, Public Administration, Tourism Management, Library Science, Teacher Education and Development Management for their higher studies (Figure 12). Some have enriched their knowledge and skills; started to work as Montessori and high school teachers, lecturer, police, managers, project executives, freelancers, content writers, event managers, customer service professional and business entrepreneurs (Figure 13).

Figure 12: Choice of subject for higher studies

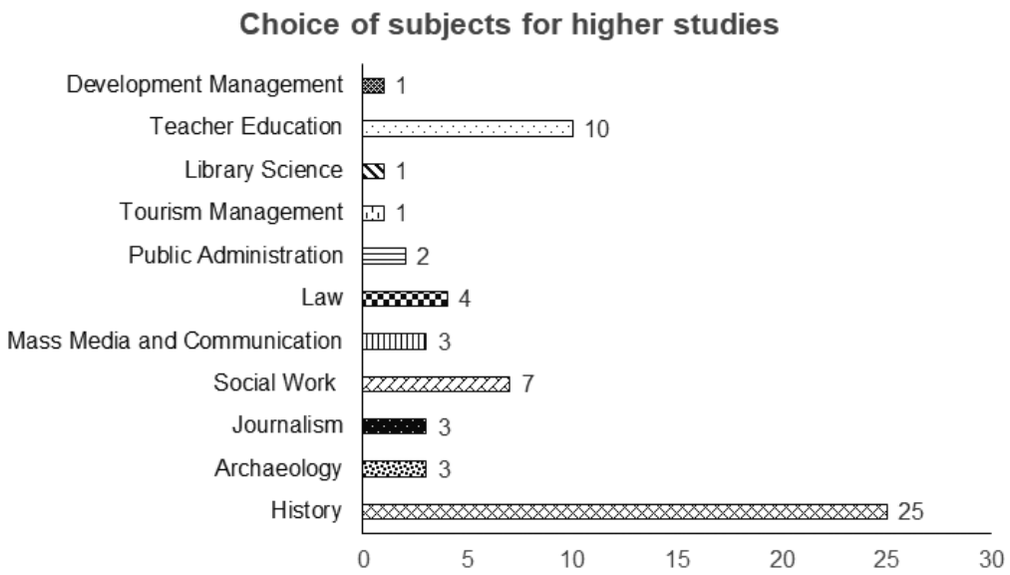
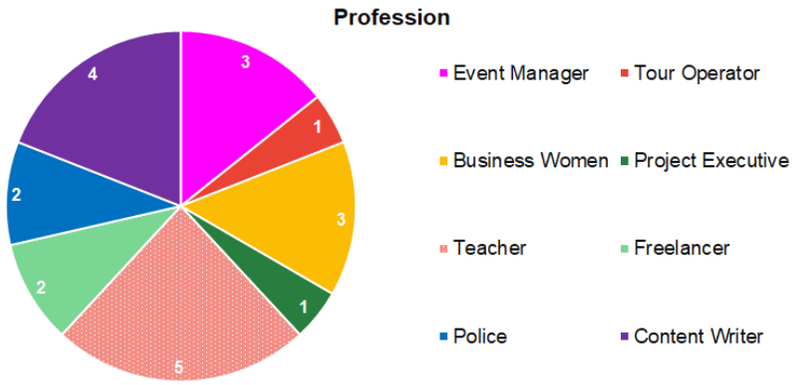


Figure 13: Profession



E. Civic Responsibility

LiFE course is designed in such a way to have a holistic experience to life skills. It developed students' sense of civic responsibility and engagement, awareness and understanding of social issues, empathy for others and willingness to volunteer in future (Figure 14). Though students had the opportunity to visit villages before taking up the LiFE course, reality of a village community was observed by the students while working with the community. Hospitality, in its true sense, was experienced in the community site. Transmission of moral values from elders to younger generations in the village made the students to involve with the community in farming, traditional cooking, playing traditional games, celebrating tradition during harvest festivals and conducting competitions (Figure 15). It helped them to understand the uniqueness of social and cultural life of the village community and their association with nature.

Figure 14: LiFE enhanced civic responsibility of the students

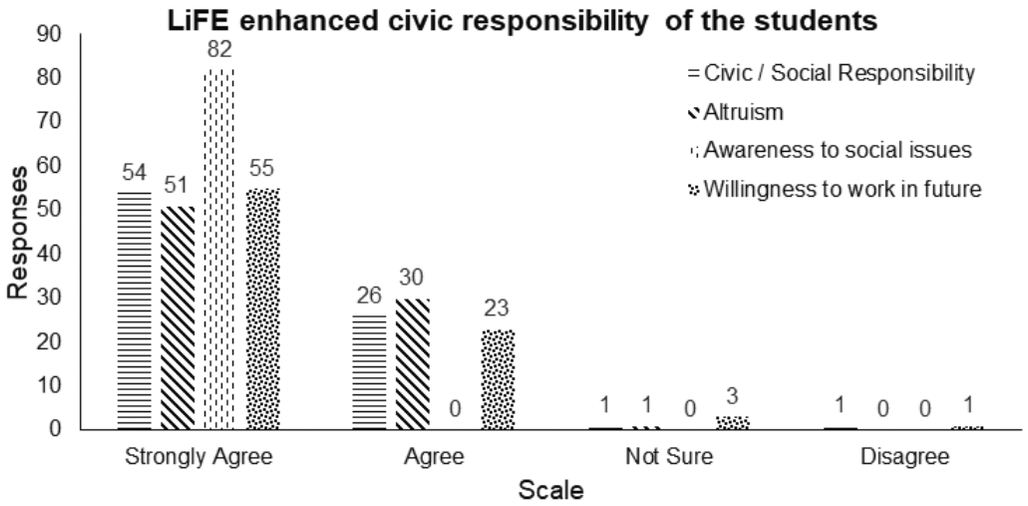


Figure 15: Community engaged activities of students

As given in Figure 3, the department had been engaged with the same community, Arittapatti, for three consecutive years (2015 – 2018), to strengthen the community engagement, enrich the learning experience and to have intensive reflection from the students, community and other stakeholders. It resulted in the formation of Responsible Tourism Group and Hospitality Group at Arittapatti under the headship of women of the community site. The purpose of the groups is to minimize the negative impact of tourism in their historic and heritage village and to make positive contributions to the conservation of natural and cultural heritage of their village (Figure 16). It enhanced civic responsibility of the students and community ownership.

Figure 16: Contribution to the community

DISCUSSION

Integrated service-learning project – Life Frontier Engagement (LiFE) course of the Department of History, Lady Doak College involves constructivist approach to engage and empower the student community. Results of the study indicate that students committed themselves in the participatory learning and research to enhance their subject knowledge and skills to meet the challenges in the society.

The choice of community sites created enthusiasm among the students. They witnessed the genuineness of the community partners to contribute something for the betterment of their community site. LiFE project sub-themes (Figure 3) provided students an opportunity to get concrete experience through the application of theoretical knowledge obtained from the courses – History of India, Indian Geography, Governance in India, History of Tamil Nadu, Archaeology and Art with Special Reference to Tamil Nadu, Glimpses of Environmental History, Environmental Movements, Tourism Resources in India, Women's Studies, Research Methodology and Dimensions in History. Guidance from subject experts – Dr. R. Venkatraman, Former Professor of History, Madurai Kamaraj University, Dr. V. Vedachalam, Former Archaeologist and Epigraphist, Tamil Nadu State Department of Archaeology, Dr. Sethuraman, Former Professor, Department of Art History, Asethetics and Fine Arts, Madurai Kamaraj University, Mr. Annamalai, Directory and Secretary, Gandhi Museum, Madurai, Mr. Asaithampi, Curator of Thirumalai Nayak Mahal, Madurai, Mr. Maruthu Pandi, Curator of Gandhi Museum, Madurai and experts from DHAN Foundation, Madurai assisted in the intellectual process of the students in LiFE research. It made students to realise and appreciate the importance of the study of history and exposed them to learn history through inquiry, the essence of historical research.

From the pilot study to presentation, LiFE of the department gave emphasis on historical research. It allowed the students to identify the research problem by engaging with the community. It demanded them to generate private understanding of the focused research problem and to explore the authenticity of the findings collected through survey, interview and literary reviews. Reflection sessions and documentation offered authentic experiences to produce new knowledge with reciprocal benefits. Reciprocity, the unique character of integrated service-learning project, helped to produce responsible citizens with civic consciousness. It assisted the students to understand the principles of critical historical reflection and facilitated to reduce bias and assumptions prevailed in the society. It enhanced students' awareness on the role and contribution of local community in historical events and in the preservation and conservation of their cultural and historical heritage. Hence, service-learning projects of the Department of History involves not only constructivist approach but also community-based participatory learning and research, inquiry-based learning and problem-based learning.

LiFE created a learning environment for the students to expose and mold themselves by collaborating with other students of their class, community partners and subject experts. It increased cooperative and experiential learning opportunities inside and outside the classroom. The study reveals that LiFE presented several benefits for students – promoting self-efficacy, identifying inner potential, positive attitudes towards learning, critical thinking and problem solving. Results shows that commitment towards

LiFE process made the students to get higher score in academics and find their carrier path.

CONCLUSION

Though there were hinderance due to Covid-19 in educational field, it had opened an avenue for the students to get deeper into online learning tools. The researchers of the study have utilised the opportunity to enrich their knowledge about LiFE by engaging themselves with their seniors. Online learning approach made it possible and helped them to experience the real essence of community engagement.

LiFE, an integrated service-learning project of Lady Doak College, Madurai, created a new platform to the history students to experience their academic knowledge in the real world. It involved thoughts, feelings and actions of the student as well as community partners. It provided the chance to the students of history to reflect and contemplate with the community partners. Thus, LiFE acted as a bridge between the students and the community. Students consumed social, cultural and historic heritage values from the community. LiFE activities began as a transaction of knowledge between the students and the community. Later, they developed respect for each other and ended up with mutual trust. Exchange of ideas and perspectives are the unique characters of service-learning projects. Sharing of knowledge in LiFE reflection sessions enriched learning of both the students and the community partners. It facilitated students to understand the process of historical research from finding a suitable research problem to interpretation and involve them to make historical resource as a contribution to the community.

Faculty and expert guidance facilitated the students to connect oral history and historical context through the verification of historical evidence. Periodical reflection made the students to analyze the facts and information collected through questionnaire and interviews. Hence, students actively involved in finding authentic resources. In this process, students helped one another to identify the research gap and resolve it by sharing resources. It enabled the students to recognise the importance of oral and local history in the reconstruction of historical and cultural heritage. It made the students and the community to appreciate the significance of studying history and stimulated the students to know their own family and local history. It fostered their role in the preservation and conservation of history and heritage and enhanced the sense of civic responsibility and involvement. Thus, LiFE - integrated service-learning project activities of the Department of History, Lady Doak College, acted as a stepping-stone for community-based research in which students of history get an opportunity to appreciate their academic learning through action research and experiences thereby suggesting solutions to societal issues.

REFERENCE

Ahmad, I., Akbar, M. S., Shah, M. A. U. H., & Hussain, B. (2021). Promoting Citizen Leadership among Students through Service-Learning. *Psychology and Education Journal*, *58*(3), 1699-1706. https://doi.org/10.17762/pae.v58i3.3943

Crothers, Glenn. A., (2002). "Bringing History to Life": Oral History, Community Research, and Multiple Levels of Learning. *The Journal of American History*, *88*(4), 1446-1451. https://doi.org/10.2307/2700608

Mahalingam, T.V. (2011). *Early South Indian Palaeography, Madras University Archaeological Series, No. 1*, 201-211.

Morais, Dominic G., (2018). Doing History in the Undergraduate Classroom: Project Based Learning and Student Benefits. *The History Teacher*, *52*(1), 49-76. https://www.jstor.org/stable/26646473

Ngai, G., Chan, C. F., & Kwan, K. (2018). Challenge, meaning, interest, and preparation: Critical success factors in influencing student-learning outcomes from service-learning. *Journal of Higher Education Outreach and Engagement*, *22*(4), 55-80. https://openjournals.libs.uga.edu/jheoe/article/

view/1417/1414

Priscilla, A.S., Tiphagne, Anita, Beulah, J.M.R. & Mathew, Synthiya Mary, (2015). *Life Frontier Engagement: Facilitators and Student's Guide.* Madurai: Lady Doak College, Print.

Smith, Michael. (2009). What History is good for: Service-learning and studying the past. *Learning and Teaching: The International Journal of Higher Education in the Social Sciences*, 2(3), 50-73. https://www.jstor.org/stable/23744818

Straus E. E., & Eckenrode D.M. (2014). Engaging Past and Present: Service-Learning in the College History Classroom Source. *The History Teacher*, 47(2), 253-266. https://www.jstor.org/stable/43264227

Sze-Yeung Lai, C., & Chi-leung Hui, P. (2021). Service-learning: Impacts of learning motivation and learning experience on extended social/civic engagement. *Higher Education Research & Development*, 40(2), 400-415. https://doi.org/10.1080/07294360.2020.1756748

APPENDICES:

Part 1:

Discourse Completion Test

Directions: Please ***write your response*** *in the blank area.* ***Do not spend a lot of time thinking about what answer you should provide****; instead, please* ***respond as naturally as possible*** *and write your response as* ***you feel you would say it*** *in the situation.*

A classmate that you have known for a couple of years stops by your desk at the library and invites you to lunch. You want to leave school early today, so you would rather work through lunch to get ahead on your project.

Classmate: *"Hi. How have you been? Hey, do you want to go to the cafeteria and get a bite to eat?"*

You: I am good. I am engaged with my reading. If you don't mind, can we go out on Sunday?

~~~~~~DELETED FOR SAMPLE TEMPLATE PURPOSE~~~~~~

Part 2.

Demographic Information

1. Age and Gender: 34, Female
2. Nationality: Indian
3. Occupation: Assistant Professor of History, Lady Doak College, Madurai, Tamil Nadu, India.
4. Educational background: M.A., M.Phil., Ph.D.
5. First language: Tamil

Thank You
~~~~~~

Adaptive E-Learning – A Comparative Study

[1]Dr. A.K. Shafreen Banu, [2]S. Mohamed Aslam
[3]X. Antony Julian

[1]shafreenbanu@gmail.com, [2]assukutty2018@gmail.com,
[3]julianx941@gmail.com

[1]Associate professor, Department of Information Technology, Bishop Heber College (Autonomous), Tiruchirappalli, Tamilnadu, India
[2, 3] Student (3rd B.Voc IT), Department of Information Technology, Bishop Heber College (Autonomous), Tiruchirappalli, Tamilnadu, India

Abstract: Adaptive e-learning is currently a high exposure topic in education, research and development streams, it redefines the process of "one size fits all" and brings a whole new outlook to education that insists on changing away from building infrastructures and providing information via the internet and towards better learning and performance. The difficulty of enhancing learning and performance is primarily dependent on correctly understanding a learner's characteristics. Adapting to the new normal lifestyle is important, the most important part is that a child, teenager or a youth adapting to the new normal. Everything in the world revolves around normality and adapting or fixing ourselves into the box is also considered normal in the contemporary. In other words, adaptive learning is a teaching method that adapts to the confidence as well as the understanding of each learner. In an adaptive learning path, learners may start with the same content, but based on their answers, the system will feed each user with relevant and unique content to master certain areas. Learning via the internet was considered to be taboo in the past but now, the whole educational system is dependent on e-learning. Parents, Teachers and even Students think that the exposure a student gets in offline is more efficient than what they receive online. To break this myth"Adaptive e-learning should be adapted".

Keywords: Master Chain areas, Building Infrastructure, Online, Education, Efficient

INTRODUCTION:

Recent years have seen a spike in research examining the effectiveness of e-Learning, largely due to the increasing possibilities of IT and learning, as well as increased political and organizational attention to the topic. Learning from classrooms has gradually become an aspect of the past, e- learning has become the trend in the education industry. This paper presents a brief overview of the field of e-learning. It introduces the concept of e-learning, the history of e-learning, the benefits and drawbacks of online learning, the future of e-Learning, types of learning

management systems, and synchronous e-learning vs. asynchronous e-learning, and technologies used in e-learning. The advancement in technologies introduces different methods of learning including blended learning, social and collaborative learning, and micro-learning. The proposition Adaptive e-Learning brings to the table is flexible for everyone. Adaptive e-learning ditches the idea of "one size fits all". The motive of this paper is to develop a better understanding of the characteristics and effectiveness of the e-Learning concepts.

A COMPARATIVE STUDY: DEFIITION OF E-LEARNING:

The system of education through electronic resources is defined as e-Learning. It is aimed at bringing students out of the classrooms, the traditional methods of teaching and enabling them to access knowledge from any part of the world with a device and internet connection. E-Learning is also coined as the network-enabled transfer of skills and knowledge. This method of learning was widely debated and its feasibility was doubted since many thought the human to human interaction in teaching is important. Though e-learning has been in existence for a long time it has seen a spike never seen due to the on-going pandemic situation coupled with the need to impart education from the safety of their homes. However, with the swift development in technology and the advancement in learning systems, the number of people benefitting from it has reached sky-high levels. The introduction of computers was the basic foundation of this revolution and over time, as we get hooked to smartphones, tablets, etc. These devices have secured an important place in the classrooms for learning. Books are gradually getting replaced by electronic educational materials. Knowledge can also be shared via the Internet, accessible to everyone 24/7, anywhere, anytime.

IMPLEMENTATION OF ADAPTIVE E-LEARNING SYSTEMS:

There are many e-learning systems that provide only the same materials to all students and do not consider their needs or abilities. However, the students' needs, goals, backgrounds, knowledge levels and learning capabilities can vary (Surjono, 2009). That current existing e- learning systems do not handle all these differences resulted in the creating of adaptive e-learning systems with a specific set of user characteristics, in which the system or the learner render its components and interface according to different requirements (Haidar, 2006). Thus, adaptive e- learning systems try to solve the problems of current e-learning systems by changing the presentation of material to adapt it to individual student's needs and preferences (Surjono, 2009). Adaptive e-learning systems are structured by twotechnologies: intelligent tutoring systems and adaptive hypermedia systems. The material which is given to them is still oriented just for well prepared and motivated students. Current existing e-learning may not fit to all students. The diversity of users within a group forced the designers of e-learning systems to create adaptive and flexible e-learning environments with the potential of improving the learner performance (Surjono, 2009). These problems resulted in the creating of Adaptive E-Learning Systems which serve a specific set of user characteristics, in which the system or the user render its components and interface according to different requirements (Haidar, 2006). Adaptive e-learning systems are structured by two technologies: intelligent tutoring systems and adaptive hypermedia systems (Surjono, 2009).

INTELLIGENT TUTORING SYSTEMS (ITS):

ITSs are adaptive instructional systems applying artificial intelligence (AI) techniques (Surjono, 2009). The goal of ITSs is to provide the benefits of one-on-one instruction automatically and cost-effectively Web-based education systems have a lot of advantages, but they still lack the presence

of a teacher, who in a traditional classroom employs various mechanisms to sustain the student's attention and provides appropriate guidance to the student based on his/her weaknesses and strengths in a particular subject. ITSs attempt to simulate the "teacher", who guides the student's lesson flow and uses pedagogical methods appropriate to students (Rane et al., 2005). However, a virtual teaching assistant that captures the subject matter and teaching expertise of experienced teachers provides a captivating new option (Ong&Ramachandran, 2003). ITSs apply the micro-adaptive approach as the decision about learning diagnosis and instructional prescriptions are generated during the task. ITSs have been studied for more than three decades by the researchers in education, psychology, and artificial intelligence. Today, prototype and operational ITSs provide practice-based instruction to support corporate training, K-12 and college education, and military training (Ong&Ramachandran, 2003). ITSs consist of components representing the learning content, teaching and instructional strategies as well as mechanisms to understand what the student does or does not know. These components are arranged into the expertise module, the student modelling module, the tutoring module and a user interface module which all together compose ITS's architecture

AIM:

- The aim of this paper is to make a comparative study on Adaptive e-Learning and research about the relevancy and effectiveness of it in today's world.
- To perform a SWOT analysis on advantage and disadvantages on adaptive e-learning.

METHOD:

This is a comparative study with the main aim of understanding the importance and adaptation of E-Learning in difficult times such as distance learning and epidemics. Online learning challenges and possible solutions were also identified based on previous studies. SWOT analysis was performed to understand the various strengths, weaknesses, opportunities and threats that this learning mode will face in situations where traditional teaching methods cannot be followed. We considered the qualitative aspect of the study. This study is based entirely on secondary data. A detailed and systematic review of the collected literature was performed. Secondary data sources: (a) journals, (b) reports, (c) search engines, (d) company websites and academic papers, and (e) academic publications such as research papers.

SWOT ANALYSIS OF ADAPTIVE E-LEARNING: THE ADAPTATION AND FEASIBILITY OF ADAPTIVE E-LEARNING DURING RECENT TIMES AND LONG TERMADVANTAGES AND DISADVANTAGES OF ADAPTIVE E-LEARNING.

The fundamental right that has to be provided to a student is the "Right to Education", on this note we can raise a question "Are the students given the right to Education?" 100 million children and young people are affected by natural disasters every year. Situations of crisis and conflicts are the biggest hurdles in the path of education since students from remote areas of the world are most affected. Disruption of education is one of the cruelest things that can happen to a student especially those with lesser means for education. When disasters and crisis (man-made and natural) occur, schools and colleges need to be prepared and should find new ways to continue with teaching–learning activities (Chaeng-Richards et al., 2013). There's a saying, "It is difficult to stick to the traditional road when the road itself has crumbled." The advancement in technology means that students can attend their classes at any time of the day from anywhere at any given situation this

protects the right to education of students .They integrated themselves well in an e-learning world ,of course, the value of the face-to-face instruction method cannot be reduced, but e-learning can be used together with the traditional methods to bring in efficiency, effectiveness, and competitive edge over other competitors by imparting quality education (Barboni, 2019) .Several online courses were offered and mobiles were used to provide education to the displaced students (Omar et al., 2008). And the most recent disaster is in the form of the Covid-19 which is spreading like a forest fire around the world. All of the schools, colleges, and universities are facing lockdowns in the most affected areas to curb further spread of theCorona Virus. Many academic institutions are, therefore, seeking the help of online learning so that teaching and learning processes are not hampered. The SWOT Analysis of Online Learning is shown in Figure 1. In the last few years, e-learning has started gaining popularity in India. Many platforms provide affordable courses to students via Massive Open Online Courses. When the world was still imploring the effectiveness of distance learning Corona Virus Pandemic introduced everyone to a new world of learning and teaching. Though many platforms bid in the E-Learning race, Zoom emerged as the Clear winner offering a lot of control and features to teachers as well as students.

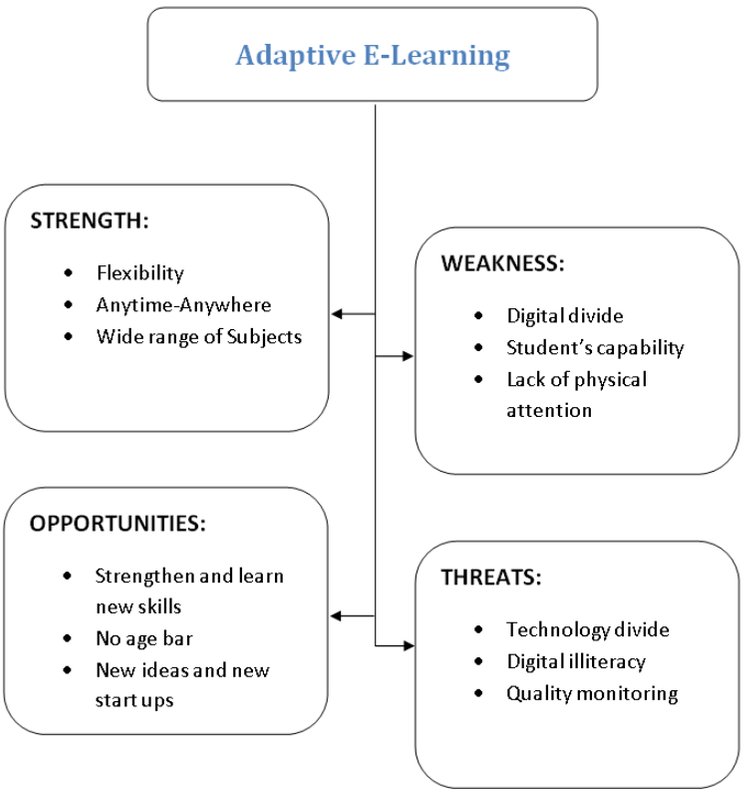


Figure-1 SWOT Analysis

A. STRENGTHS

E-learning methods and processes have greater advantages when compared with physical methods of learning. E-Learning enables students to learn in real time with one to one interaction as well as provide recorded sessions to students so that they do not miss out on classes even if they schedule doesn't allow them to attend classes in time. These strengths of the Adaptive e-Learning methods can provide great strengths and relief to students during difficult phase of their education. They experience less stress due to this new adaptive tech, as students must be ready to move on before new concepts are introduced. It is less expensive to supply resources, mainly due to the sharing of open content online as opposed to textbooks supplied by a publisher. It is student-centered and proves itself flexible in terms of time and location. The e-learning methods enable us to customize our procedures and processes based on the needs of the learners. There are plenty of online tools

available where e-learning can be provided in an effective and efficient environment. Teachers can use a combo of audio, videos, and text to reach out to their students in this time of crisis to maintain a human touch to their lectures. E-Learning in today's modern world has given the students the ability to share their feedback and clear their doubts. The Anywhere-Anytime feature of e-learning is beneficial in the times of crisis-like situation, for instance, man-made disasters, natural disasters, or pandemics such as Covid-19. E-learning will at least keep us out from traveling to the institution during the disaster and enables us to be educated from anytime-anywhere. Technology provides innovative and resilient solutions at times of crisis to combat disruption and helps people to communicate and even work virtually without the need of face-to-face interaction. The pros of E-Learning provide a greater advantage as compared to the traditional methods of teaching since it acts as a bridge connecting teachers and students during tough times without putting a halt in the path of education.

B. WEAKNESSES

E-learning like all other methods have certain weaknesses in the form of deprivation of the physical connections between the teacher and the student. Technical difficulties in any form and time constraints can become a wall separating a student and his education. Though there are many aspects associated with E-Learning the main factors Time and Location may pose a threat. Students may not have sufficient time or be in a right location to attend the classes without any issues, same applies for educators. Student's lethargic behavior in time management and following up on what is taught may pose serious problems as they will hamper between staff, student and education. All students are not the same; they vary in degrees of their capabilities and confidence level. Some of the students don't find this method of learning comfortable. E- Learning, can lead to increased frustration and confusion. Students may not be able to clear their queries from time to time. The imbalance between the advancement of technology and the ability of students creates havoc in the path of education. A missing link between student and staff can obstruct the learning process, nullifying this method of education.

C. OPPORTUNITIES

Online learning has a lot of opportunities available but during this time of crisis institutions have had no other option than to switch altogether to the method of Adaptive E-Learning, Remote Working and e-collaborations exploded during the outbreak of Corona Virus crisis (Favale et al., 2020).Till the wake of pandemic people never tasted the experience of Online learning, people have always been complacent. The Covid-19 pandemic has given rise to a new phase for online learning and will allow people to look at the fruitful side of e-learning technologies. The pandemic has provided opportunity for E-Learning to boom and for people to explore new ways of learning and teaching. This is the time when there is a lot of scope in bringing out surprising innovations and digital developments. The education industry has been striving hard for providing continued education to students without any halt keeping the future of students in their mind. The era of E-Learning will test both the educator and learner it will enhance problem-solving skills, critical thinking abilities, and adaptability among the students. In this critical situation, users of any age can access the online tools and reap the benefits of time and location flexibility associated with online learning. E-Learning has tasked educators with a challenge of bringing new and innovative ideas to close the distance gap between them and students. E-Learning has opened up many opportunities for Educational start ups, new Ed-Tech companies are researching and developing newer techs with the ability to disrupt the traditional methods of learning.

D. THREATS

Every method of learning comes with its own set of challenges, each having its own flavors. E-Learning poses many challenges ranging from Students ability, Teachers capability, and Methods & Technologies used. Educational institutions face a very big challenge of connecting with students and involving them in the learning process while understanding their requirements and capabilities. Teachers have to adapt to the changing technologies and the methods of teaching, familiarizing themselves with this new way of teaching while managing their and developing newer strategies to present the knowledge to students in a way they can easily understand. It is challenging to develop content which not only covers the curriculum but also engage the students (Kebritchi et al., 2017). The quality of e-learning programs is a real challenge. The biggest challenge faced is ensuring the quality of education, constant monitoring of teacher student interaction is a must. Tests should often be conducted so that teachers can analyze whether students have understood what has been taught to them.

This problem needs to be tackled immediately so that everyone can enjoy the benefits of quality education via e-learning (Cojocariu et al., 2014). Focusing on pros is important but taking account of the disadvantages and developing new techniques to tackle them is equally important. One should not merely focus on the pros attached to the adoption of online learning during the crises but should also take account of developing and enhancing the quality of virtual courses delivered in such emergencies (Affouneh et al., 2020). A lot of time and cost is involved in e- learning. E-Learning is not easy as it seems Students and their parents have to spend a considerable investment on getting the devices and hardware required and so do the teachers, This puts an considerable stress on students who are not in an position to afford since lockdown measures have affected the income of many households. Therefore, an effective and efficient educational system needs to be developed to impart education via online mode. Not all are provided with same amount of blessings, There are students and teachers without proper devices and internet connectivity this poses the biggest challenge since it is an factor which can hamper the process of education in E-Learning. Every institution should take the effort to ensure that every student and faculty is having access to the required resources. The educational institutions must ensure that the applications they use to connect with and teach students supports all the devices such as mobile phones and laptops present in the market and that the apps are trouble free. Teachers can present the curriculum in various formats, that is, they can use videos, audios, and texts. It is beneficial if educators complement their lectures with video chats, virtual meetings, and so on to get immediate feedback and maintain a personal connection with the students.

CONCLUSION:

Every-one needs a helping hand during difficult times and for educational industry E-Learning or Online learning has been an undisputed blessing during this period of pandemic as well during other unforeseen disasters both natural and manmade, as it has helped in closing the educational gap , keeping students and teachers connected preserving the "Right to education". Technology has helped us to overcome the barriers during difficult times. The basic foundation for E-Learning is a strong IT infrastructure, without a concrete infrastructure achieving this level connectivity and educational excellence during difficult times would not have been possible. As per the World Economic Forum, the Covid-19 pandemic also has changed the way how several people receive and impart education. To find new solutions for our problems, we might bring in some much- needed innovations and change. Teachers who were habitual with the traditional methods teaching have come out of their comfort zone and have adapted with this new way of teaching. But amidst this crisis, we have no other alternative left other than adapting to the dynamic situation and accepting the change. It will be beneficial for the education sector and could bring a lot of surprising innovations.

Students who are the sole users of this technology are not the same in each and every case. There are different varieties of students and each of them has to be catered specifically according to their needs. There are students who are less affluent and belong to less tech-savvy families with financial resources restrictions; therefore, they may lose out when classes occur online.They may lose out because of the heavy costs associated with digital devices and internet data plans. This digital divide may widen the gaps of inequality. This terrible time of fate has taught us that everything is unpredictable and we need to be ready to face challenges. Although this outbreak did not give us much time to plan, we should take a lesson from this that planning is the key. There is a need to prioritize all the critical and challenging situations which may occur and plan accordingly. The pandemic has put equal pressure on students, teachers and educational institutions teaching them to be prepared and have actions plan which comes in handy during unforeseen situations like pandemic." Prevention is better than cure" so being prepared for situations like pandemic or calamities is a must. Natural disasters can stimulate our motivation for the adoption of highly innovative communication technology and e-learning tools (Tull et al., 2017). To make e-learning effective in such difficult times, we need to focus on the use of technology more efficiently, that is, the usage of that technology which has minimum procurement and maintenance costs but can effectively facilitate educational processes. The pros and cons of an educational tool should be assessed but more important is that both teachers and students must have the knowledge of the tool and should know how to use it. The Adaptation of E-Learning is important but the fact "Whether it touches everyone" should be analyzed and there is a dire need to weigh the pros and cons of technology and harness its potentials.

ACKNOWLEDGEMENT

We, would like to acknowledge our alma mater Bishop Heber college, Our Head of the department, Staff members, Parents, friends and Relatives for assisting us during the research of this paper.

REFERENCES:

Akhras, F.N. & Self, J.A. (2000), "System øntelligence in Constructivist Learning", International Journal of Artificial Intelligence in Education, 11, 344-376.

Allen, I. E., & Seaman, J. (2007). Online nation: Five years of growth in online learning. Sloan Consortium. PO Box 1238, Newburyport, MA 01950.

Brusilovsky, P. & Nijhawan, H. (2002), "A Framework for Adaptive E-Learning Based on Distributed Re-usable Learning Activities". In: Driscoll, M. & Reeves, T.C. (eds.) Proc. of World Conference on E-Learning, E-Learn, Montreal, Canada, AACE, 154-161.

C. P. Bloom and R. B. Loftin, Facilitating the development and use of interactive learning environments: CRC Press, 1998.

Chang-Richards, A., Vargo, J., & Seville, E. (2013). Organizational resilience to natural disasters: New Zealand's experience (English translation). China Policy Review, 10, 117– 119.

Dewar, T., & Whittington, D. (2000). Online learners and their learning strategies. Journal of Educational Computing Research, 23(4), 385-403.

Heidelberg. Rani, M., Nayak, R., & Vyas, O. P. (2015). An ontology-based adaptive personalized e-learning system, assisted by software agents on cloud storage. Knowledge-Based Systems, 90, 33-48.

J. D. Basham, T. E. Hall, R. A. Carter Jr, and W. M. Stahl, "An operationalized understanding of personalized learning," Journal of Special Education Technology, vol. 31, pp. 126 -136, 2016

J. R. Carbonell, "AI in CAI: An artificial-intelligence approach to computer-assisted instruction," IEEE transactions on man-machine systems, vol. 11, pp. 190-202, 1970.

K. DelVecchio and M. Loughney, "E-learning concepts and techniques," Book E-Learning Concepts and Techniques, Series E-Learning Concepts and Techniques, Institute for Interactive Technologies, Bloomsburg University of Pennsylvania, USA, 2006.

L. Epignosis, "E-Learning Concepts, Trends, Applications," ed: Version, 2014.

P. Mondal, S. Misra, and I. S. Misra, "A low-cost low bandwidth real-time virtual classroom system for distance learning," in Global Humanitarian Technology Conference: South Asia Satellite (GHTC-SAS), 2013 IEEE, 2013, pp. 74-79.

Papanikolaou, K. A., Grigoriadou, M., Kornilakis, H., & Magoulas, G. D. (2001, August). INSPIRE: An intelligent system for personalized instruction in a remote environment. In Workshop on Adaptive Hypermedia (pp. 215-225). Springer Berlin

Prensky, M.: Digital natives, digital immigrants Part 1. On the horizon 9(5), 1-6 (2001)

Scheuermann, F., Pedró, F.: Assessing the effects of ICT in education: Indicators, criteria and benchmarks for international comparisons. Joint Research Centre-European Commission (2010)

"Structre of Blended learning," in http://www.elmmagazine.eu/articles/boosting- blendedlearning-quality, ed. Europe: European lifelong learning magazine, 2016.

"Synchronous and Asynchronous learning Technologies and clasifecations," in https://small- changes-bigreturns.wikispaces.com/Blended+Learning, ed: Copyright 2016 Tangient LLC, 2016.

Urban-Lurain, M. (1996), "Intelligent Tutoring Systems: A Historic Review in the Context of the Development of Artificial Intelligence and Educational Psychology", http://www.cse.msu.edu/rgroups/cse101/ITS/its.htm, 13.01.2010 Wang, K. & Huang, J. (2008), "Using a Style-Based Ant Colony System for Adaptive Learning", Expert Systems with Applications: An International Journal, 34 , 4, 2449-2464.

Veneri, D. (2011) 'The role and effectiveness of computer-assisted learning in physical therapy education: A systematic review', Physiotherapy Theory and Practice, vol. 27, no. 4, pp. 287 – 298.

Wolf C. (2003). iWeaver: Towards learning style-based e-learning. In Greening T, Lister R (eds) Conferences in Research and Practice in Information Technology. Proc. Fifth Australasian Computing Education Conference (ACE2003), Adelaide, Australia., pp. 273- 279

Demographic Information: Dr.Shafreen Banu .A.K

1. Age and Gender:39, Female
2. Nationality: Indian
3. Occupation: Associate Professor
4. Educational background:P.hd
5. First language: English

Demographic Information: Mohamed Aslam. S

1. Age and Gender: 20, Male
2. Nationality: Indian
3. Occupation:Student
4. Educational background: B.Voc(IT)
5. First language: English

Demographic Information: Antony Julian .X

1. Age and Gender: 20, Male
2. Nationality: Indian
3. Occupation:Student
4. Educational background: B.Voc(IT)
5. First language: English

Thank You

Unika SOEGIJAPRANATA
Talenta pro patria et humanitate

Proceeding
eLearning Forum Asia 2021

Augmenting the Virtual Environment: Technology | Innovation | Humanity

Semarang, 30 November - 1 December 2021

PeLS Philippine eLearning Society | SYMPLICITY | UNITED BOARD | eLearning Forum Asia

Assesment of e-Learning

Editor:
Dr. Heny Hartono, SS, M.Pd
Cecilia Titiek Murniati, PhD

Website:
https://www.elfasia.org/2021/

Soegijapranata Catholic University

Teachers' Language Competence Segmentation Using K-Mean Algorithm

[1]Rosita Herawati, [2]Heny Hartono and [3]Cecilia Titiek Murniati

[1]rosita@unika.ac.id, [2]heny@unika.ac.id, [3]c_murniati@unika.ac.id

[1, 2, 3]Soegijapranata Catholic University, Indonesia

Abstract: This paper presents a part of an educational research and development which has been being conducted for the last three years with a focus on bilingual program teachers' communicative competence assessment. This study involved six aspects of communicative competence by means of three di erent assessments, so called self-assessment, receptive productive assessment, and performance assessment. Despite the fact that the assessment has been digitalized, due to the pandemic time, only self-assessment could be done. The other two kinds of assessment could not be done because of the limited access to the schools during the pandemic.

This study highlighted the teachers' segmentation in 3 di erent classes. This segmentation is done using the K-means algorithm. This algorithm is vastly used for clustering in many data science applications. The Elbow as a common heuristic mathematical method is also used to optimize these algorithms. The optimum K value is modeled using a metric WCSS (Within Cluster Sum of Squares).

The teachers' language competence segmentation study is the practice of partitioning a teacher into groups that have similar language competence. It is a signi cant strategy to recognize teachers' language competence. The results of the study can be used to map teachers' communicative competence as well as giving recommendations for the most appropriate professional teacher training to improve their communicative competence.

Keywords: communicative competence assessment, K-means algorithm, Elbow, teachers' language competence

ELearning Forum Asia 2021

Augmenting the Virtual Environment: Technology – Innovation – Humanity

Assesment of e-Learning

INTRODUCTION

The COVID-19 pandemic has changed many things in Indonesia. Activities that were supposed to be conducted face-to-face had to be postponed or even canceled, because at that time the Indonesian government had imposed large-scale social restrictions. Likewise, teaching and learning activities in schools must be temporarily suspended. This also has an impact on communicative competence assessment research activities that are focused on the competence of bilingual school teachers.

The bilingual teacher who is the subject of this research will be assessed with 3 assessment components. These components are Self-Re ection, Receptive-Productive, and Performance Assessment. Self-re ection assessment is the stage where the teacher is asked to assess himself. This assessment is done by lling in the rubric provided. While the other 2 assessments were carried out by assessors. Despite the fact that the assessment has been digitalized, due

to the pandemic time, only self-assessment could be done. While the others assessment cannot be carried out during the pandemic because of the limited access to the schools during the pandemic.

Although only self-assessment can be done during a pandemic, this research can still be done. Because each component of the assessment has accommodated the six aspects that emphasize teacher's competence. The six aspects are "linguistic competence, sociolinguistic competence, strategic competence, formulaic competence, discourse competence, and interactional competence"(Celce-Murcia, 2007, pp. 41-57). Although it is not perfect as if it was done with 3 components of assessment, with these six aspects, the nal impression can still be obtained.

The nal impression obtained from the results of the self-assessment will be segmented into 3 groups that have similar characteristics. This segmentation is done using the K-means algorithm. This algorithm is vastly used for clustering in many data science applications. The Elbow as a common heuristic mathematical method is also used to optimize these algorithms. The optimum K value is modeled using a metric WCSS (Within Cluster Sum of Squares). It is a signi cant strategy to recognize teachers' language competence. The results of the study can be used to map teachers' communicative competence as well as giving recommendations for the most appropriate professional teacher training to improve their communicative competence.

DISCUSSION

Vankayalapati, R et al. (2021, p.99-104) state that K-means clustering is a data mining algorithm that can be used to group data without knowing the relationship between data rstly. "K-means is an old cluster algorithm created by MacQueen in 1967 that is most commonly used. It was one of the easiest, unattended learning algorithms to solve the issue of the well-known cluster" (Shamir & Sharan, 2002, p.269-300).

The use of K-means in education and assessment is very common. Shahiri and Husain (2015, p.414-422) evaluated student gures in order to forecast student performance. The clustering of data can be used as k-means to assess the performance of students (Arora & Badal, Dr., 2013)

The basic idea of K-means algorithms is to de ne k centroids, one for each group. Then choose a point randomly as many as K numbers de ne, where this point will be the center(centroid) of each group (cluster). This is done randomly because later, the K-Means algorithm will change the position of each point until the optimal solution is reached. The next step is to create the dataset that is closest to the center point as part of the cluster. So that in total it will K clusters be formed. Based on the grouping in the second step, each data point will be joined in a cluster. Perform calculations, and place a new centroid center for each cluster. This step can also be referred to as centroid re nement.

The step will be continued by performing calculations according to the K-Means algorithm, i.e. nding the most suitable center point position for each cluster based on the closest distance calculation. Calculation of the distance of each data point to the center of the cluster can use the Euclidean distance method. From the dataset that we have, we take the nearest centroid point, so that the dataset becomes part of the cluster. If there is still data that changes groups (move cluster), the previous step must be retake.

Otherwise, the cluster is formed already well.

The last step of the K-Means algorithm is to check the de ned center point. Select the nearest center point, and enter into the cluster. If there is still a cluster shift, repeat the previous step. The K-Means algorithm will continue to nd the center point, until the division of the dataset has been optimized and the position of the midpoint has not changed anymore.

A. K-means Optimation

Upon the discussion above, it can be analyzed that one of the crucial factors is determining the number of clusters (K value). Due to results, grouping will result in a di erent analysis for the number of clusters. If K is too few, then cluster division becomes fast, but it is possible there is hidden information that is not revealed. If K is too big, then the number of clusters is too many. It might be too di cult to choose a strategy that is appropriate for each cluster.

To overcome this, an optimization function can be added which will select the number of the start of the cluster correctly. (Dabbura Imad, 2018) The elbow method will help to choose the right K value by using metric WCSS (Within Cluster Sum of Squares). As an example, below is a calculation for two clusters:

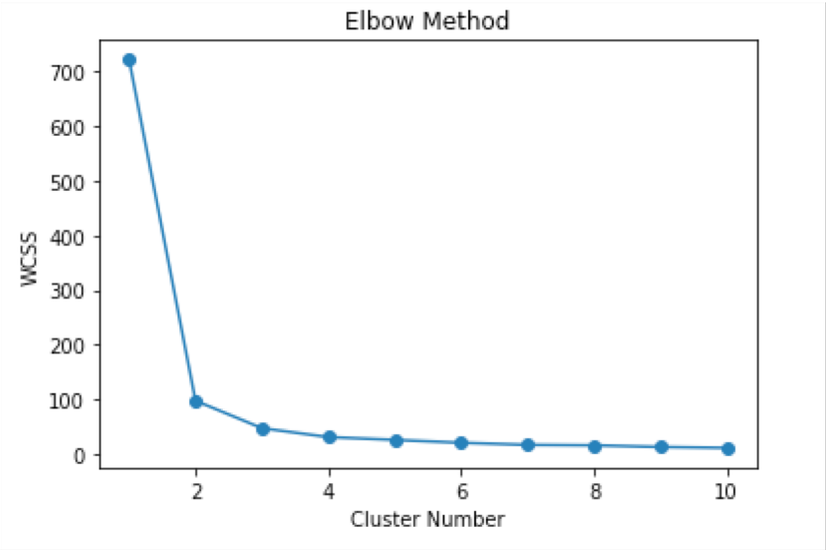
$$\text{WCSS} = \sum_{P_i \text{ in Cluster 1}} \text{distance}(P_i, C_1)^2 + \sum_{P_i \text{ in Cluster 2}} \text{distance}(P_i, C_2)^2 + \sum_{P_i \text{ in Cluster 3}} \text{distance}(P_i, C_3)^2$$

In the metric above, it can be observed that WCSS is the dependent variable. The Sigma symbol represents the sum of the squares of the distances of each point Pi in cluster 1. The sum of squares is the sum of the squares of each distance. Next, the results of cluster 1 are added with the result of the square of the distance of each data point to the center point of cluster two, and and so on according to the number of clusters we want.

To nd out the best number of clusters for the case study being tested is to look at the comparison of WCSS for 2 clusters, 3 clusters, 4 and carry on. What we choose is when the change in WCSS value is very signi cant, like elbows. Therefore this selection method is called the elbow method. And the resulting Elbow method upon the self assessment that participants has been done is shown below:

Figure 1:
Optiomization of K_means with the elbow method to determine the right number of clusters
has been done is shown below:

Figure 1:
Optimization of K-Means with the elbow method to determine the right number of clusters

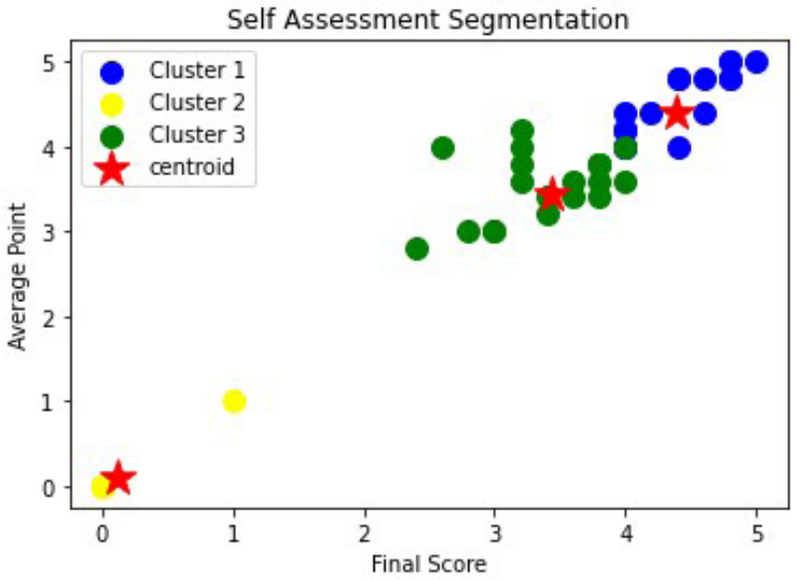


The estimated value of K is determinted by looking at the change in the value on the graph. The WCSS value indicated that after the number 3, the changes are no longer signi cant.

B. Result

The gure 1 shows the optimization K-means with the elbow method. The elbow curve shows that we need 3 centroids to grouping the data. Because And by using the optimal cluster value above, a model is developed to perform the classi cation. The gure 2 below shows the classi cation of self assessment with six aspects of aspects of a teacher's competence.

Figure 2
Visualization of K-Means with K=3



In this study, there are six diagrams of self-assessment results with 6 aspects of a teacher's competence. However, the six diagrams have the same pattern. For this reason, in this paper only one image is presented as a representative of the other diagrams.

This diagram is a visualization of the nal score and average score obtained by participants who have lled out the self-assessment matrix. The nal score will be mapped with the band descriptor as the nal impression of overall assessment. The table showing the band descriptors can be seen below. This table is taken from the assesment book which is used as a guide in this study.

Table 1:
The table of band descriptors

Final Score	Description
1	Intermittent Communicator : Communication occurs only sporadically.
2	Limited Communicator : Receptive/productive skills do not allow continuous communication.
3	Moderate Communicator : Gets by without serious breakdowns. However, misunderstandings and errors cause difficulties.
4	Competent Communicator : Copes well but has occasional misunderstandings or makes occasional noticeable errors.
5	Good Communicator : Copes well and performs competently.

The diagram above shows that participants who are bilingual teachers already have su cient competence.

This can be seen in 2 large clusters which show a nal score between 3 and 5. If it is mapped on the band descriptor, then most of the participants, approximately 50%, are included in the Moderate Communicator. While the remaining 34% have got the nal impression as a Competent Communicator.

CONCLUSION

K means as a clustering algorithm that depends on the number of clusters, relies on other methods such as Elbow to determine the optimal number of clusters. The number of clusters depends on the manual identi cation of the elbow point on the visualization graph. The self assessment data is segmentation into 3 clusters. The segmentation shows 48.7% of Medium Communicators, the other 46.2% are Competent Communicators, and around 5.1% are included in Limited Communicators.

To support the professional development of teachers, assessment of communicative competence is needed. This assessment will show the level of teacher competence. By knowing the level of teacher competence, and segmented them into similar groups, teacher's training can be tailored to the needs of each cluster. training can be designed to be targeted and more e ective.

ACKNOWLEDGEMENT

This research is a part of multi-year research supported by the Indonesian Ministry of Higher Education (Dikti). The writers would like to extend their gratitude to DIKTI which has nancially support this research.

REFERENCES

Arora, Rakesh & Badal, Dr. (2013). Evaluating Student's Performance Using k-Means Clustering. www.ijcst.com. 4.

Dabbura Imad. (2018). K-means Clustering - Algorithm, Applications, Evaluation Methods, and Drawbacks. Retrieved from https://imaddabbura.github.io/post/kmeans-clustering/#evaluat ion

M. Celce-Murcia, "Rethinking the communicative competence in language teaching", in E. A. Soler, & M. P. Jorda, Intercultural Language Use and Language Learning, Dordrecht: Springer, 2007, pp. 41-57.

Shahiri, A.M., Husain, W. (2015). A review on predicting student's performance using data mining techniques. Procedia Computer Science, 72: 414-422. https://doi.org/10.1016/j.procs.2015.12.157

Shamir R, Sharan R: Algorithmic approaches to clustering gene expression data. In Current Topics in Computational Molecular Biology. MIT Press; 2002:269–300.

Vankayalapati, R., Ghutugade, K.B., Vannapuram, R., Prasanna, B.P.S. (2021). K-means algorithm for clustering of learners performance levels using machine learning techniques. Revue d'Intelligence Arti cielle, Vol. 35, No. 1, pp. 99-104. https://doi.org/10.18280/ria.350112

Unika SOEGIJAPRANATA
Talenta pro patria et humanitate

Proceeding
eLearning Forum Asia 2021

Augmenting the Virtual Environment: Technology | Innovation | Humanity

Semarang, 30 November - 1 December 2021

PeLS Philippine eLearning Society · SYMPLICITY · UNITED BOARD · eLearning Forum Asia

Learning oriented devices and network

Editor:
Dr. Heny Hartono, SS, M.Pd
Cecilia Titiek Murniati, PhD

Website:
https://www.elfasia.org/2021/

Soegijapranata Catholic University

A Prototype of Wireless Portable Learning Management System to Support E-Learning in Remote Area

Albertus Satrio Bayuaji, Zefanya Devendra P.N., and Vittalis Ayu

albertusbayu04@gmail.com, vendradevendra@gmail.com, vittalis.ayu@usd.ac.id

Department of Informatics, Sanata Dharma University, Indonesia

Abstract: In recent years, e-learning has been an emerging trend in education. The Learning Management System (LMS), as the basis of e-learning, needs to be accessible anytime and anywhere with the support of good internet connectivity and allow the students to experience paperless-based learning. However, not all schools in the Yogyakarta region have proper internet connectivity, particularly in remote areas such as elementary and middle schools in Panggang, Gunungkidul. This has become a concern in those schools which do not have the support of stable internet connectivity and proper computer lab; hence are incapable of providing the e-learning environment as a classroom experience. Even though most of the students and teachers have smartphones, without the support of stable internet connectivity, the connection to the remote server of the provided learning management system will be difficult to access. Therefore, to overcome the issue above in e-learning, a portable learning management system based on Raspberry Pi and MoodleBox has been built. This prototype can be used locally as a server without internet connectivity, thus still providing basic LMS functionality. Teachers can upload their material in this portable system, and students can access it from their smartphone or laptop locally. We have successfully implemented this prototype in our lab, and the LMS can be accessed via WiFi simultaneously using 8 devices. However, there is still a need for improvements to enable this prototype to serve more devices. When we implemented it using more than 8 devices, there were still some problems with the coverage area and size of the memory of the portable LMS.

Key words: learning management system, wireless connectivity, portable server, Raspberry Pi, MoodleBox

ELearning Forum Asia 2021

Augmenting the Virtual Environment:
Technology – Innovation – Humanity

Learning oriented devices and network

INTRODUCTION

E-learning has been an emerging trend in recent years and brings new paperless-based education for teachers and students. Various levels of education have used the LMS as the platform for e-learning to bring virtual classroom experience. This means that the paper-based submission and paper-based material delivery can be minimized and replaced by the digital version provided online from the LMS. Furthermore, the increasing ownership of smartphones and personal computers by both the students and teachers acts as an enabler, thus catalyze the implementation of e-learning.

However, the internet connection to access the LMS server needs to be available and steady enough to facilitate the e-learning environment.

In schools located in the center of urban areas such as Jakarta, Bandung, and Yogyakarta, the internet connectivity is excellent and steady. This implies that the e-learning implementation in these areas will be easy. On the other hand, schools in rural areas, particularly in Panggang, Gunungkidul, located in a remote district, have a limited network infrastructure to facilitate internet connectivity. However, the devices can connect to the internet, but the connection is not always steady enough to facilitate e-learning access.

Therefore, in this research, we aim to build a prototype of a portable learning management system that can be accessed wirelessly by students in the local network environment. This prototype uses MoodleBox as the local LMS server implemented in Raspberry Pi. The Raspberry Pi acts as a portable mini-computer because of its small, yet it can still provide enough computing power to act as a mini-server. This mini-server then can be accessed by the students and teachers locally with their personal computers or smartphones. Furthermore, we aim to enhance the connection with Wireless Local Area Network (WLAN) to ease access to the portable server because in recent years, the existing smartphones and laptops are already equipped with wireless network interfaces.

RELATED WORK

E-learning has been a hot topic related to education and has attracted enormous researchers. Aparicio et al. (2016) introduced a theoretical e-learning framework to define a conceptual concept using computerized systems to assist the learning process. Rodrigues et al. (2019) define e- learning as an innovative way to build an interactive learning environment that supports the learning process. Moreover, Encarnacion et al. (2017) study stated that E-Learning is considered one of the best strategies to be implemented in teaching and learning.

E-learning has been successfully implemented by various academia in different levels of education. Cheung (2021) and Polydoros (2021) had implemented e-learning in primary schools. Cheung (2021) has exploited the advantages of e-learning tools to teach writing in English for primary school students in Hong Kong, whereas Polydoros (2021) investigate the effect of distance learning to study science in primary school. In another research, Moreno-Guerrero (2020) inspect the use of e-learning in high school to teach mathematics. However, there is an issue in e-learning implementation, such as a proper level of technology literacy is essential to those who participate in the e-learning process (Polydoros, 2021). Pratama et al. (2020) study the roles of device ownership and the infrastructure's support as the enabler to realize the e-learning environment.

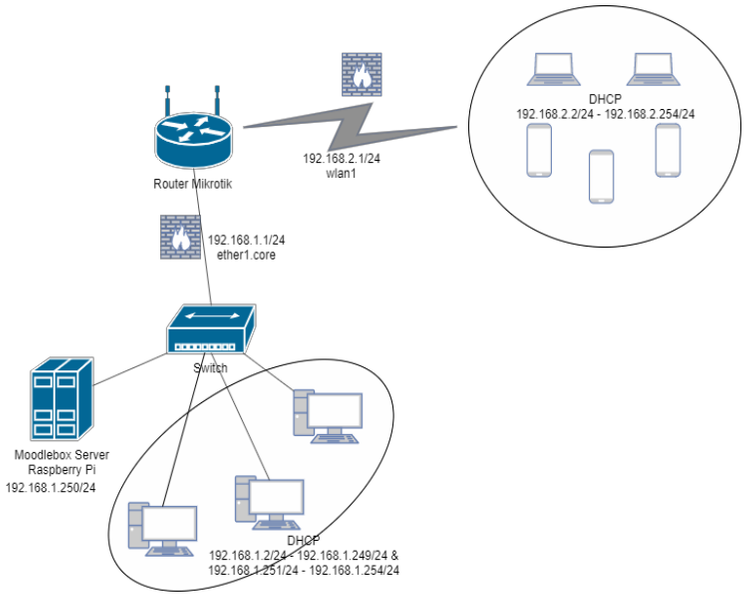
METHODOLOGY

In this research, we intend to build a portable server based on Raspberry Pi to facilitate the e-learning environment with local network access without connection to the Internet. The MoodleBox will be installed as LMS over the Raspberry Pi. The following hardware and software are used to build the prototype:

1. Raspberry Pi B+
2. Mikrotik RouterBoard 95-1Ui 2HnD
3. Switch TP Link 8 port
4. UTP cable
5. MoodleBox image
6. BalenaEtcher

These software and hardware are set up to form the local network topology in Figure 1.

Figure 1:
Local network topology



The prototype is built in several steps: First, MoodleBox (act as LMS) is installed in Raspberry Pi (act as a server), then the wireless connectivity is added with Mikrotik RouterBoard to enable the user to access the Moodle wirelessly, then Domain Name Server (DNS) server is configured to ease the user's access to the Moodle, and finally, the last step is the LMS's configuration.

A. MoodleBox server installation in Raspberry Pi

In the first step, the Moodlebox image is downloaded from https://moodlebox.net/en/help/download-the-disk-image/ and then made into a bootable SD Card with BalenaEtcher. The SD Card is acts as storage and booting media for the Raspberry Pi. After the bootable SD Card is ready, it is inserted into the Raspberry Pi, as illustrated in Figure 2.

Figure 2:
The Raspberry Pi B+

After the inserting SD Card, the device is powered up then the Moodle server operating system will be loaded, as depicted in Figure 3.

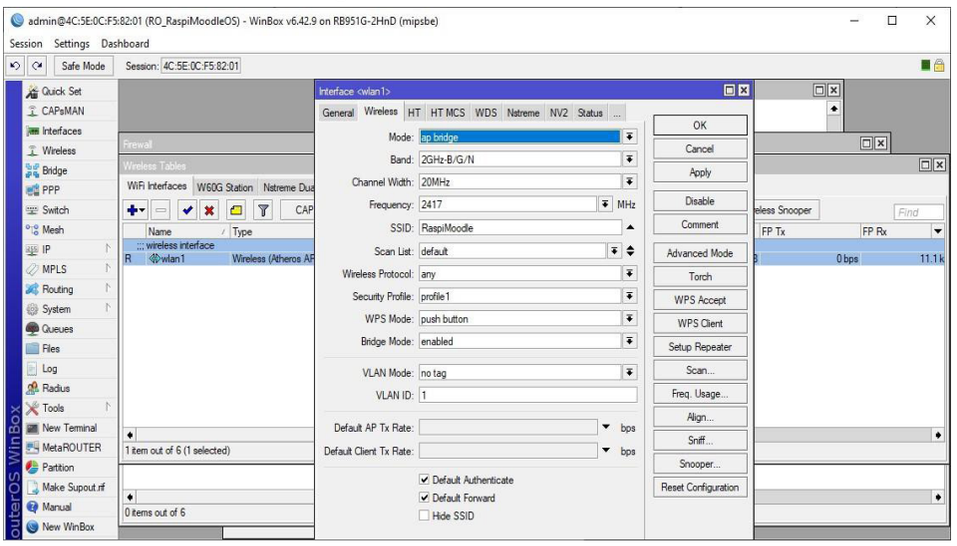
Figure 3:
MoodleBox is loaded in Raspberry Pi

B. Adding wireless connectivity with Mikrotik to access the Moodle.

As now Moodle Server is ready to run, another aspect that needs to be concerned is the connectivity. The Raspberry Pi only has 1 port for connectivity using an Ethernet cable. For that reason, 8-port-switch is employed to extend the Ethernet cable connection, thus enabling the Moodle server to be accessed simultaneously by several computers with wired connectivity.

Therefore, to enable the Moodle server to be accessed wirelessly, the Mikrotik RouterBoard is utilized as the wireless connectivity provider. The setup process includes configuring IP addresses on the Ethernet cable interface (that connect to the Raspberry Pi as the Moodle Server) and the Wireless Local Area Network (WLAN) interface of the Mikrotik RouterBoard. Figure 4 shows the setup for the WLAN interface.

Figure 4:
Configuration on WLAN interfaces



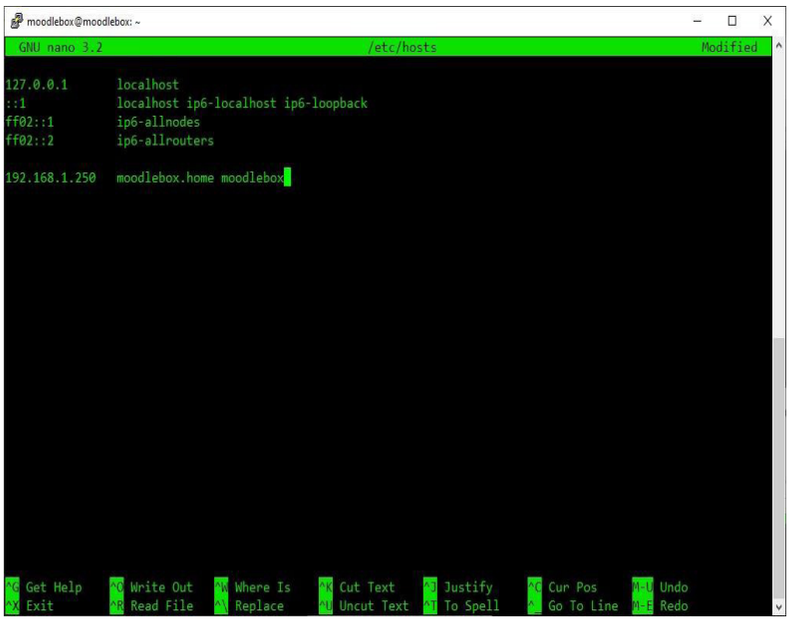
After the addresses are configured, Dynamic Host Configuration Protocol (DHCP) is activated in the interfaces to enable each user to get an IP address dynamically.

C. Setting DNS for user convenience

Finally, the user can now access the MoodleBox Server wirelessly. However, to access the server, the user still needs to input the server's IP address, which is 192.168.1.250, and sometimes people are more forgetful with numbers than with semantic names. Therefore, for user convenience, DNS is

utilized. The DNS enables the user to alias the IP address into a URL name which easier to remember. In this case, the IP address of the server (192.168.1.250) is aliasing into **moodlebox.home**. The name must be included in the configuration files to configure the alias, as depicted in Figure 5. As a result, to access the Moodle server, a user only needs to access http://moodlebox.home/.

Figure 5:
Include alias name in the DNS configuration file



D. LMS configurations

After the user can access the Moodle server, the LMS is fully functioning. In addition, there are two more setups regarding the LMS's content:

1. Add users and roles

   Roles and users need to be assigned to the participating entities such as teachers, students, and admin. Each role has different privileges and access permits. For example, students can only access the material and assignment without adding the content, whereas teachers can add study material and give out an assignment. On the other hand, the admin has the most superior roles as he/she can add users and assign the roles to each user.

2. Add the study material to the LMS.

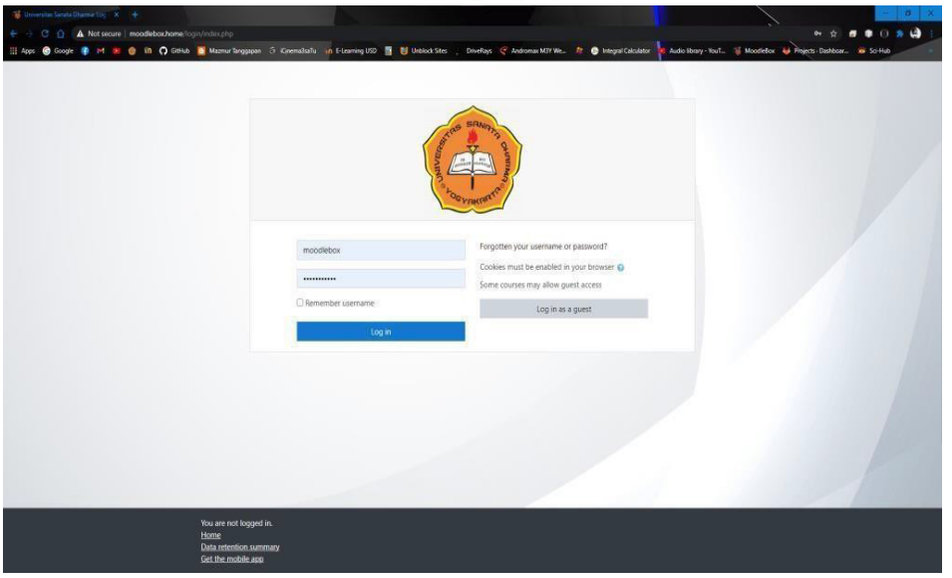
   Now that MoodleBox is ready to function as a local LMS, teachers need to log in and set up the LMS and references,

   including books and presentations. In addition, exercises and assignments also can be configured and implemented in this local LMS.

RESULT AND DISCUSSION

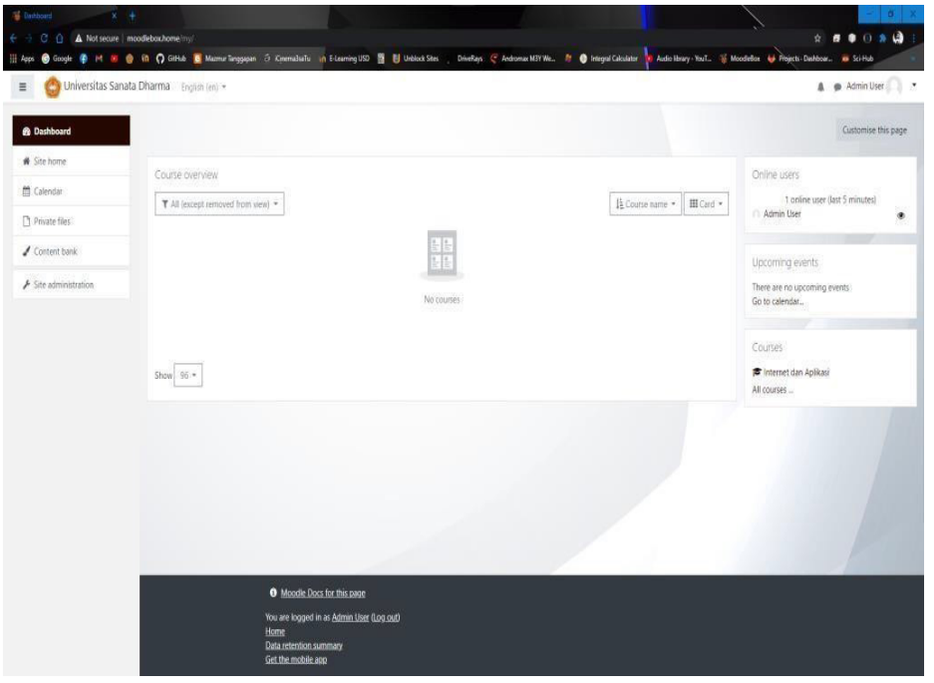
To access the Moodle server, users can connect to the server via a browser on http://moodlebox.home/ either with wired or wireless connectivity by personal computer or smartphone. Afterward, user will be displayed with login pages as depicted in Figure 6.

Figure 6:
LMS Login page



In this stage, users need to fill up the required credentials given by the administrator to access the provided LMS. When the filled credentials are submitted and verified, that user will be directed to the LMS page with the corresponding features and privileges. For example, Figure 7 shows the landing page of a user who has the role of administrator. The administrator can set up the website pages, including website layout and theme; add, delete, and alter user's credentials; add edit and delete subjects; and assign a teacher to a particular class.

Figure 7:
Landing page of a user with administrator role



On the other hand, users who enrolled as a teacher can have access to the LMS. Access the basic LMS functionality is provided to the teachers, such as add the study material and assignment, monitor student activities in LMS, set the assignment with a time restriction, grading, and giving comments of student's work such as quizzes and assignments.

CONCLUSION AND FUTURE WORK

The prototype of the Learning Management System based on MoodleBox over Raspberry Pi has been successfully built in lab settings. This LMS can also be accessed from the MoodleBox server locally from the user's device either with wired or wireless connectivity without connecting to the Internet. However, further improvement should be employed to this research, such as the additional storage for Moodle is needed to accommodate the increasing data resulting from the increasing LMS activities. Furthermore, the coverage area in this experiment is only about 10 meters wide, with various obstacles in the classroom setting that can obstruct the wireless signal transmission. There is a need to define a suitable spot for the Mikrotik to have an optimal coverage area. In addition, there is a need for further study about the maximum users' capacities that can be handled with this system as we tested this prototype with just 8 simultaneous users.

REFERENCES

Aparicio, M.; Bacao, F.; Oliveira, T. An e-Learning Theoretical Framework. *J. Educ. Technol. Soc.* 2016, 19, 292–307.

Rodrigues, H.; Almeida, F.; Figueiredo, V.; Lopes, S.L. Tracking e-learning through published papers: A systematic review. *Comput. Educ.* 2019, 136, 87–98.

Encarnacion, Riah & Annjeannette, Alain & Galang, & Hallar, Byron & Encarnacion, R & Galang, Annjeannette Alain. The Impact and Effectiveness of E-Learning on Teaching and Learning. *International Journal of Computing Sciences Research*. 2020. 5. 383-397. doi: 10.25147/ijcsr.2017.001.1.47.

Cheung, Anisa. "Integrating e-learning into process writing: The case of a primary school in Hong Kong". *Innovative Approaches in Teaching English Writing to Chinese Speakers*, edited by Barry Lee Reynolds and Mark Feng Teng, Berlin, Boston: De Gruyter Mouton, 2021, pp. 19- 42. doi:10.1515/9781501512643-002

Polydoros G, Niki Alasona. Using E-learning to Teach Science in Covid-19 Era At Primary Education Level. *Journal of Research and Opinion*. 2021. 8(6): 2964-8. doi:10.15520/jro.v8i6.108.

Moreno-Guerrero A. J, Aznar-Díaz I, Cáceres-Reche P, Alonso-García S. E- Learning in the Teaching of Mathematics: An Educational Experience in Adult High School. *Mathematics*. 2020; 8(5):840. doi: 10.3390/math8050840.

Pratama, A. R., & Scarlatos, L. L. The Roles of Device Ownership and Infrastructure in Promoting E-Learning and M-Learning in Indonesia. *International Journal of Mobile and Blended Learning (IJMBL)*. 2020. 12(4), 1-16. doi:10.4018/IJMBL.2020100101

Unika SOEGIJAPRANATA
Talenta pro patria et humanitate

Proceeding
eLearning Forum Asia 2021

Augmenting the Virtual Environment: Technology | Innovation | Humanity

Semarang, 30 November - 1 December 2021

PeLS Philippine eLearning Society | SYMPLICITY | UNITED BOARD | eLearning Forum Asia

Learning-oriented Technologies

Editor:
Dr. Heny Hartono, SS, M.Pd
Cecilia Titiek Murniati, PhD

Website:
https://www.elfasia.org/2021/

Soegijapranata Catholic University

Cooperative Learning in Physical Education through the Use of Fitness Apps

[1]Georgina V. Kusano

[1]kgv0976@dlsud.edu.ph

[1]De La Salle University - Dasmarinas, Cavite, Philippines
[1]International British Academy, Imus, Cavite, Philippines

Abstract: The COVID-19 pandemic has brought school closure and restrictions on conducting outdoor and sports activities. This caused an alarming effect on the level of physical activity of students. This action research will report the experience of an intact Physical Education class that utilized Cooperative Learning strategies and mobile fitness apps. This paper presents the improved conceptual understanding, psychomotor skills developed, and the attitudes of the students towards fitness activities. In accomplishing the four learning outcomes of physical education, which includes: physical learning, cognitive learning, social learning, and affective learning, the following five essential elements were integrated: positive interdependence, promotive interaction, individual accountability, soft skills instruction, and group processing. This approach allowed the students to work effectively together in accomplishing the learning goals of the team. The members of each Cooperative Learning group realized that each group member's efforts and work output are important to both individual and team success. Aside from the academic skills, they also learned leadership, decisionmaking, trust-building, communication, and conflict-management skills working with each other. Given the challenges that the COVID-19 pandemic has brought to our P.E. classes, this presentation will offer insights that can contribute to helping teachers and students navigate through these challenging times

Keywords: Cooperative Learning; Physical Education; Fitness Apps

ELearning Forum Asia 2021

Augmenting the Virtual Environment:
Technology – Innovation – Humanity

Learning-oriented Technologies

INTRODUCTION

The COVID-19 pandemic has truly affected schools worldwide. UNESCO reported that at the height of the school closures, around 1.37 billion students and nearly 60 million teachers were no longer inside classrooms. One school year after we started with emergency remote teaching, distance learning, and modular learning, we find ourselves beginning another school year with the hopes of utilizing the insights and learnings we gained to improve the delivery of the teaching-learning process. While it is true that the use of technology aided in ensuring the continuity of education for students during this time of pandemic, there were many challenges, for both teachers and students, that needed to be overcome.

Reviewing relevant research on the program "School is Out, but Class is In", which is the Chinese government's initiative to address the impact of COVID-19 on teaching to ensure the continuity of learning for the elementary and middle school students, Zhou and Li (2020) provided an overview of the

online teaching organization, the implementation, and the evaluation of problems encountered. Their findings revealed that while the Chinese government was able to provide a diverse teaching platform and resources for online teaching, there were also limitations in the implementation of the large-scale online teaching during the pandemic, such as the infrastructure in some areas is relatively weak, the teaching methods or contents were not suitable, and the level of attainment of the learning objectives was weak for some students. Further, they have observed that in this new model of implementation of online teaching, the appropriate guidance from teachers and the autonomous learning of students goes hand-in-hand with each other.

Lubis and Dasopang (2021) reported that elementary school teachers and students in Indonesia faced the following challenges in online learning:

1) the difficulty of teachers and students in achieving learning objectives;

2) unstable connections in some areas, particularly in suburban homes; and (3) high cost of Internet service provider fee. This observation is supported by the study conducted by Rasmitadila et al. (2020) which revealed that aside from the technical issues associated with devices (cellphones/ laptops) and Internet connectivity, student participation in online learning is a challenge for teachers. They cited factors such as a less conducive home learning environment, difficulty in maintaining student enthusiasm, and distractions due to other online applications (e-games) that contributed to the readiness of the students to participate in online classes.

In the Philippine setting, Alvarez (2020) reported that the lived experience of first-year college students in learning remotely may be described in four themes: internet accessibility as a challenge, financial challenges, lack of technological devices, and the need for affective or emotional support.

Twenty-seven school principals and 349 teachers from the Division of Zambales were asked by Dizon et al. (2021) regarding the implementation challenges during the pandemic. The respondents mentioned that the availability of technology infrastructure is crucial for the utilization of flexible and alternative modes of teaching and the assurance of continuity of learning. The researchers also highlighted the critical need to address students' emotional and mental health.

The study conducted by Lapada et al. (2020) on around 2,300 teachers (consisting of 698 Elementary, 1,443 High School, and 159 College teachers) revealed that only half of the total number of teacherrespondents were equipped and ready for distance learning. The lack of facilities, equipment, and training in teaching via distance education are crucial factors in ensuring teacher readiness. Among the challenges encountered by the teachers are problems on establishing communication with students (stable internet access), time management in the conduct of classes, encouraging participation of students, and building a positive environment in online classes through emotional support among students. These findings are supported by the interpretative phenomenological analysis study conducted by Robosa et al. (2021) on public school teachers from the Department of Education, where they found out that the teachers are significantly challenged by the lack of resources and the submission of workload that contributes to burnout and stress. Moreover, the teachers lamented that during this time of pandemic, it was harder for them to encourage students to submit their output.

Watson (2020) noted that the technological experience of teachers in an online environment is one of the factors that determines the smoothness of instructional activities; however, in the study conducted by Winter et al. (2021), they have noted that because teachers were primarily trained to teach face-to-face, there were difficulties that were observed while teaching online during this pandemic.

In the large-scale study conducted by the National Research Council of the Philippines (NRCP) last April 2021, on around 29,000 Department of Education teachers who took part in the study on remote teaching, it was reported that the difficulties faced by teachers include Internet connectivity and internet speed. Further, the teachers believe that the students are learning much less from the distance learning

modality.

In my own experience teaching Physical Education to Year 7 - 12 students last school year, I have encountered similar difficulties with regards to students' submission of their online/offline work. There were also occurrences of absenteeism. In some instances, the students "appear" to be attending the online class, but in reality, they were playing online games while they are in the class. How did I discover this? They were not responding when being called by the teacher. Because of all these experiences last school year, I kept on thinking of "fun" activities that I could incorporate to my lessons and make it more interesting on the student's level, whether it is an online activity or offline.

When I encountered the research of Alcón et al. (2020) where they integrated the concepts of Cooperative Learning and Gamification together with the use of Fitness Apps in Physical Education classes, I realized that I could conduct a similar action research in my classes. I had been using Fitness Apps in my classes starting last school year. The Cooperative Learning approach will augment the level of "fun" and interest in my students. The other presentation that inspired me to utilize Cooperative Learning approach is the webinar I attended organized by Connected PE (connectedpe.com)

STATEMENT OF THE PROBLEM

Given the background, this action research aims to utilize cooperative learning integrated with fitness apps to address students' learning, participation, and motivation in P.E. class.

The action research aims to address the following research questions:

1. How do the students understand the concept of fitness as shown in their group output?
2. In performing the psychomotor tasks, what had been the group's experience integrating the use of the fitness apps?
3. What are the students' attitudes toward the use of cooperative learning with fitness apps?

REVIEW OF RELATED LITERATURE

A. Components of Fitness

The current learning set-up can make a great impact to one's wellbeing. We often hear that prevention is better than cure, and PE subject is one of the best platforms to teach not only sports but the physical, emotional, and social aspects to achieve high levels of well-being. In this way, students can be more successful dealing with their academic lives and better cope with difficult circumstances. Having good physical, emotional, and social health are all essential for well-being.

It is important to make a link between measuring and improving students' components of fitness and what role it plays in developing overall physical health and, therefore, their contribution to well-being. According to Edy and Hunter (2016), taking part in more physical activity and developing one's components of fitness, physical health will be improved as well. With that said, a further understanding in teaching the components of fitness can help achieve a state of well-being in the students.

In teaching PE, the component of fitness is being taught in the context of sports. However, due to restructuring the curriculum this lesson still must be relevant may not be in sports but in performing exercises. One of the priorities of the K to 12 PE Curriculum is the valuing physical activities for enjoyment, challenge, social interaction, and career opportunities (DepEd, 2016). Putting to life the conceptual

framework of PE, "Move to learn, learn to move." with the present set-up of learning, which is online, home-based exercises. The World Health Organization recommends 150 minutes of moderate-intensity or 75 minutes of vigorousintensity physical activity per week, or a combination of both is recommended which can be done at home with very minimal equipment required. (www.euro.who.int).

Fitness is divided into different components or parts. One is the health-related components that includes strength, muscular endurance, cardiovascular endurance, and flexibility. The skill-related components are agility, coordination, reaction time, balance, power, and speed. These subdivision make it easier to understand fitness and the different roles while performing an activity. (https://www.bbc.co.uk/bitesize)

B. Cooperative Learning in Physical Education

The idea of encouraging students to discuss, debate, disagree, and ultimately teach one another gained grounds during the 1990's primarily through the pioneering efforts of educational psychologist, Robert Slavin, who conducted research on classroom cooperative learning techniques. Slavin (1995), as cited by Silalahi and Hutauruk (2020), described cooperative learning as students learning together, contributing ideas, and being responsible for the achievement of individual and group learning outcomes.

Various authors have built on the work on Slavin (1995) and expanded the discussion on cooperative learning. Johnson and Johnson (1999) put forward the idea that there are five essential elements for an activity to be considered cooperative:

1. *Positive Interdependence*: Believing that they are linked with each other, the members of the group must see that each group member's efforts and work output are important to both individual and team success.

2. *Promotive Interaction*: The members of the group promote each other's success by helping, assisting, supporting, encouraging, and praising each other's efforts to achieve.

3. *Individual Accountability*: Each member of the group must accept responsibility for fulfilling the task / role assigned to him or her, therefore allowing the team to reach its learning goals.

4. *Soft Skills Instruction*: The members of the group develop interpersonal skills by effectively working together. Aside from academic skills, they also learn leadership, decision-making, trustbuilding, communication, and conflict-management skills.

5. *Group Processing*: As a group, the students should strategize how to meet their learning goals and how to maintain effective working relationships.

In the systematic review of literature on research on cooperative learning in Physical Education conducted by Bores-García et al. (2021), they highlighted the following findings based on the journal articles they reviewed:

1. cooperative learning encouraged students who traditionally have felt excluded to enjoy, learn, and perform sports activities in their free time;

2. topics related to health, physical conditioning, and basic motor skills are based on recreational activities and the group became motivated;

3. content, for both elementary and secondary education can be taught using this pedagogical approach;

4. from among Kirk's (2012) learning domains in physical education, it was the social dimension that was mostly cited, indicating the positive interdependence which was enhanced by working

in groups; and

5. tasks with high psychomotor component challenged the students to perform the skills to the level of their capabilities.

C. Technology Integration in Physical Education Classes

Various mobile applications and innovations are now being used in Physical Education classes. Palicka et al. (2016) reported the acceptance of the use of mobile technologies in connection with the realization of physical activities. They mentioned that the high level of mobile devices and the practical experience associated with the use of mobile apps to support physical activities indicate the potential for introducing mobile apps in Physical Education lessons.

The results revealed in the study entitled, "Review of Smartphone Applications for Promoting Physical Activity" showed that smartphone apps have positive effects in promoting physical activity (Coughlin et al., 2016). There is available software that enhance the teaching process, student interest, and learning efficiency. Harris and Chen (2018) found out that technology-enhanced physical activity (PA) intervention was effective for improving students' physical activity. They found out that by integrating Fitbits app into daily classroom activity breaks, the students became more engaged in moderate to vigorous physical activity.

METHODOLOGY

This action research is situated within the Year-Level Project Collaboration of the Secondary Department of an international school in Cavite. Each year level had a theme which is based on the topics that every subject can connect with. The participants of this research are two intact sections of Year 10 students. A total of twenty-eight students took part in the research.

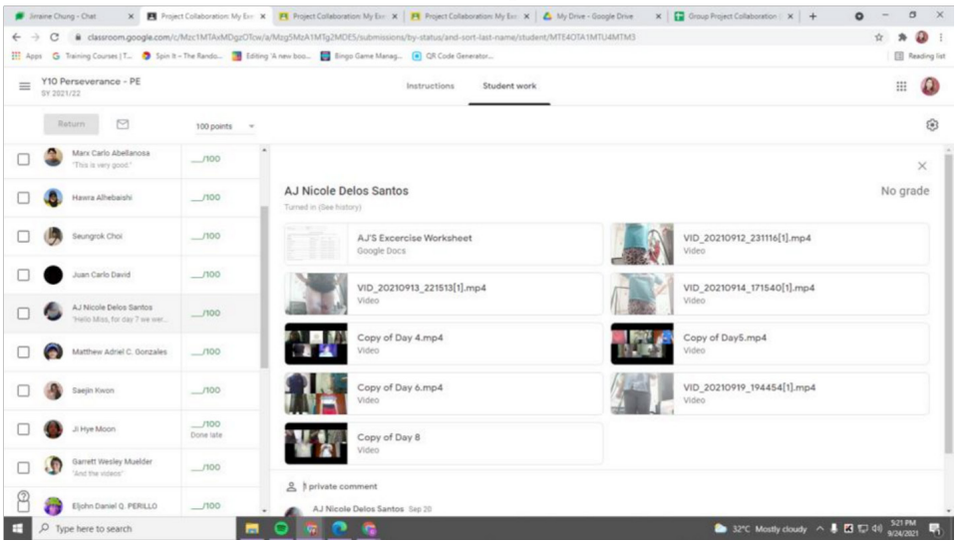
A. Project-Collaboration Process

At the beginning of the term, the Secondary Department conducted a meeting to brainstorm about the theme of the project that can be provide students with real life learnings. During the meeting, students were grouped into equal numbers of members.

The details of the project of each year level are indicated in a Topic Outline that contains the lessons for the whole term, grading system, and finally, the details of the project with rubric. It is posted in our respective Google Classrooms for reference. Allotted time was given to discuss what the group project is all about.

Each group had access to Google Sheet that contains a Google Meet link, members' and subject teachers' email addresses, project description for each subject, due date, timeline, and the monitoring sheet. Students could access this file in their Google Drive whenever the group are working.

Figure 1:
Screenshot of Google Classroom

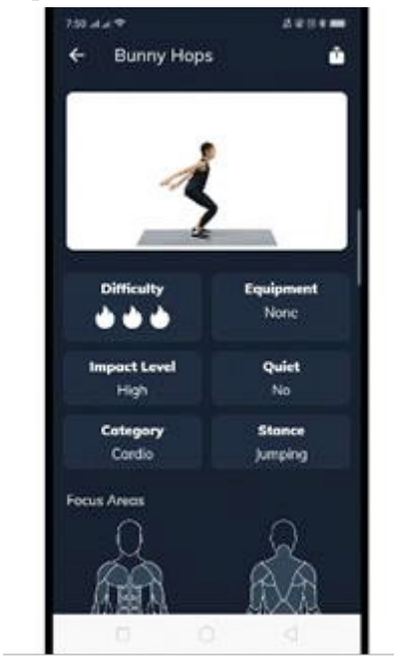


B. SWORKIT App

I learned about this app during the first webinar I attended in 2020, on the first lockdown and sudden shift of face-to-face classes to online. It is very handy and helpful to students who are always into their smartphones. Two of the best features of this app are the SWORKIT Youth Workouts – Forever Free and "Exercise Library." The youth workouts provide a collection of exercises for Pre-K through Year 12 students. It includes warmup to cool down. It has a variety of recommendations appropriate for a student's age level.

The app's exercise library has a full list of exercises if the students would like to customize their workouts for a day. This can be filtered from adult to kids, level of difficulty, exercise category, focus areas, equipment, stance, impact level, and noise level. This can be downloaded through Play Store or App Store. It also has a web version with the same interface. Students can use their school account to sign up for the app and use the free features.

Figure 2: SWORKIT Screenshot



C. The Exercise Worksheet

The purpose of the exercise worksheet is to record the exercises they have chosen from the SWORKIT app as a group and indicate the number of repetitions or time they have performed each set. The gathered data through this worksheet will also be used in their Statistics class.

This worksheet should be filled out with exercises that the group had decided to do using 'Exercise Library' from the app. Based on the Physical Activity Readiness Questionnaire (PARQ) that they have answered, each group should consider the physical disability of their classmates, if there are any, to adjust the level of difficulty or category of the exercises for a day.

There are four columns in this worksheet. One for the set of exercises for the day, followed by the set 1, 2, and 3. It was explained and demonstrated on how to use the worksheet and what each column is for. Each student was asked to make a copy of the exercise worksheet template, it was also demonstrated on how to do that and the students did it themselves after. To ensure they did, they were asked to upload the copy of the template in a certain section in their PE Google Classroom.

Once they were able to follow the instruction, each group were sent to their respective Google Meet Link to discuss what exercises they will choose for a day. They are being monitored and the session was recorded.

D. Project Collaboration Assessment Form

The questions in this form are adapted from the post-workout survey of the University of California Berkeley (https://www.surveymonkey.com/r/WYYYNGJ). It has been edited to tailor fit to the level of the students.

Given the year level of the participants in this research and PARQ had been facilitated before, some personal information such age, and height were not included in this questionnaire. Email addresses are auto generated as well.

The focus of these questions is all about the experience of group members during their group exercises conducted online. They are as follows:

1. How did you feel when you found out about group exercises?
2. How did you feel having completed the group exercises?
3. After the group exercises you conducted; did you have a full understanding of the concept of the components of fitness discussed in our lesson? Discuss your answer
4. What components of fitness your group most chose in the SWORKIT app Exercise Library? i.e., cardiovascular fitness such as burpees, jog in place
5. How would you rate the intensity of your exercise? [Physically]
6. How would you rate the intensity of your exercise? [Mentally]
7. How would you rate the intensity of your exercise? [Emotionally] 8. How would you rate your overall workout experience? [Satisfaction]
8. What did you enjoy about your project making in PE?
9. Is there anything you did not enjoy during your project making in PE?

10. What are the difficulties you encountered during the project making in P.E.?
11. How did your group resolve the difficulty?
12. During our group exercises, I felt connected with: [My exercise group]
13. During our group exercises, I felt connected with: [My own health goals]
14. Additional Comments and Suggestion to improve this projectmaking PE

RESULTS/ DISCUSSION

A. Students' Understanding of the Concept of Fitness

All the groups were able to submit their group output – the video recording and the documentation of the exercise worksheet. All students in the class also accomplished the Project Collaboration Assessment Form. This is a good development, knowing that the members of the group found time to work together on their group output. This is what Johnson and Johnson (1999) highlighted as one of the essential elements of cooperative learning, which is positive interdependence. As one student mentioned in the Project Collaboration Assessment Form, *"I enjoyed the part where we were able to collaborate with one another and performing the exercises as a challenge which made it somewhat more fun and interesting. I also liked the part where we were organized and are able to communicate and interact."*

Based on the video recordings and the exercise worksheets, the students were able to show sufficient understanding of the concept of fitness by selecting from the SWORKIT app a work-out plan that highlighted a "whole-body" workout. Figure 3 is an example of a group work-out plan that incorporated the leg muscles (backward lunge, squats, forward lunges, and jumping jacks), core and back muscles (squats, Mason twist, and abdominal crunch), and the chest and arm muscles (push-ups and wall push-ups).

Figure 3:
Sample Group Work-out Plan (Whole Body Workout)

Backward Lunge	Marvin - 10 Matthew - 15 Marishka - 27 Jandy - 12 Ji Hye - 20	Marvin - 11 Matthew - 24 Marishka - 29 Jandy - 11 Ji Hye - 15	Marvin - 10 Matthew - 30 Marishka - 21 Jandy -9 Ji Hye - 5
Squats	Marvin - 10 Matthew - 12 Marishka - 36 Jandy - 8 Ji Hye - 10	Marvin - 11 Matthew - 22 Marishka - 40 Jandy - 11 Ji Hye - 5	Marvin - 13 Matthew - 30 Marishka - 32 Jandy -9 Ji Hye - 3
Forward lunges	Marvin - 12 Matthew - 15 Marishka - 30 Jandy - 13 Ji Hye - 20	Marvin - 11 Matthew - 24 Marishka - 31 Jandy - 12 Ji Hye - 15	Marvin - 13 Matthew - 32 Marishka - 26 Jandy - 15 Ji Hye - 5
Wall push ups	Marvin - 12 Matthew - 20 Marishka - 45 Jandy - 11 Ji Hye - 20	Marvin - 11 Matthew - 30 Marishka - 34 Jandy - 15 Ji Hye - 20	Marvin - 13 Matthew - 60 Marishka - 20 Jandy -10 Ji Hye - 10

In the Project Collaboration Assessment Form, one student described how they selected the exercises in order to address the various components of fitness: *"Among the exercises we picked, we had burpees for cardiovascular fitness, strength and balance for bridge march. We also had strength balance and endurance for planks. Jumping jacks help increase muscular endurance and power and for spot jump we mainly focus on power however it does affect other components of fitness. Windmill and stairs aid in cardiovascular fitness, and agility and flexibility."*

It is interesting to note that in one group, the essential element of developing soft skills was seen in how they selected the exercises. Knowing that one of the members of the group had a bad leg, the group decided to put together a set of stretching exercises (Figure 4) that all members of the group can take part in. The group was able to accomplish the learning objective while at the same time, show empathy.

Figure 4:
Sample Group Work-out Plan (Stretching Exercises)

Example:

DAY 1 EXERCISES	1ST SET no. of repetitions/time	2ND SET	3RD SET
arm circles	20 seconds	30 seconds	25 sec
side stretch	10 repetitions (reps)	15 reps	10 reps
arm and shoulder stretch	15 seconds	20 seconds	20 seconds
neck stretch	10 reps	15 reps	10 reps
arm crosses	20 seconds	30 seconds	25 sec
abdominal stretch	15 seconds	20 seconds	15 seconds (cant be done by reps position has to be held)
shoulder roll	15 seconds	20 seconds	25 seconds
calf raises	10 reps	15 reps	10 reps

One group went beyond the required format for presenting their exercise worksheet by color-coding the level of intensity of the exercises. This shows that they were able to connect the components of fitness.

Figure 5:
Sample Group Work-out with Levels of Difficulty

Direction: Choose eight (8) exercises from the SWORKIT kids workout. Fill-up the table exercises table that you think you can perform with efficiently.
Follow the warm-up and cool down exercises video being posted together with this worksheet.
Example:

- Green - Beginner
- yellow - Intermediate
- Red - Advanced

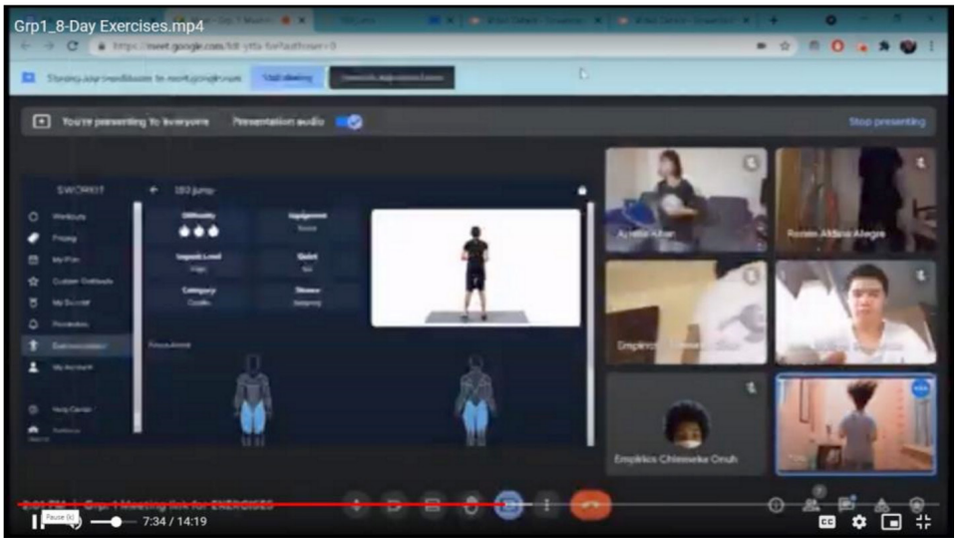
DAY 1 EXERCISES 8 exercises = set set x 3 = My Exercise of the Day	1ST SET no. of repetitions/time	2ND SET	3RD SET
Squat Jabs (Hard)	30 seconds	40 seconds	45 seconds
Squats	30 seconds	40 seconds	45 seconds
lunges	30 seconds	40 seconds	45 seconds
Arch Up	30 seconds	40 seconds	45 seconds
Bending Windmill Stretch	30 seconds	40 seconds	45 seconds
Balanced Kickback (Right)	30 seconds	40 seconds	45 seconds
Balanced Kickback (Left)	30 seconds	40 seconds	45 seconds

When asked to discuss what they learned from the activity, the students mentioned, *"I understood why it is important to improve said components of fitness, at the beginning all of us noticed how out of shape we were and how hard was it to do the exercises. Thankfully we grew and honed our physical capabilities as the days went by. We focused mainly on improving our cardiovascular endurance and I'd say it was pretty effective as I noticed that I'm not having a hard time doing exercises anymore."* (impact of fitness on well-being and avoiding a sedentary lifestyle). This statement from the Project Collaboration Assessment Form summarizes the importance of one's well-being, *"I understood the importance of why we need a daily exercise and this will help with my mental, emotional, and physical health."*

B. Psychomotor Tasks and the Use of Fitness Apps

In the videos that the groups submitted, we see how they integrated the SWORKIT app with their exercise set.

Figure 6:
Sample Screenshot of Video Presentation



When asked to rate the physical intensity of their exercise, 16 students (57%) rated the physical intensity as hard, 3 students (11%) were "in the middle", and 9 students (32%) found the exercises as physically easy. The results obtained for this question support what Bores-García et al. (2021) reported that tasks with high psychomotor component challenged the students to perform the skills to the level of their capabilities. As one student mentioned, *"My legs ached a lot but I knew that it meant progress in developing my muscles."*

The students' responses were quite similar in evaluating the mental and emotional intensity of their exercise. Twenty students (71%) reported that they found the mental intensity of the exercise as easy, and twenty-two students (79%) reported this for the emotional intensity. Seeing the exercises as mentally and emotionally easy in intensity supports what Taylor (2012) has put forward, that students see physical education activities as a welcome break from the more structured cognitive learning required in their other classes.

C. Students' Attitudes Toward the Use of Cooperative Learning with Fitness Apps

The qualitative data gathered from the reflection logs of the students revealed that when the students learned that the output project for this topic will be done in collaborative groups, most of their initial response / reaction were negative feelings towards the task. The negative feelings included: feeling mad, overwhelmed with workload, being skeptical about the online group work, and pressured because of uncooperative members. The students mentioned that the reasons/ factors for these negative feelings are based on their previous experiences with their classmates when it comes to group work, some suffered from illnesses that delayed their contribution to their group, lack of personal space, and some were nowhere to be reached. However, there were a few students who mentioned having initial positive feelings toward the activity and they were surprised and excited about the task. Despite the initial concerns and apprehensions felt by the students, the consultation with the teacher helped clarify the tasks needed to be accomplished. The supportive role of the members of the group was also highlighted at this point, as shown by this statement from a student, *"sorting things out and talking about it with my group helped a lot"*.

After doing the group activity, there is now a general sense of fulfillment among the students. One student wrote in the reflection log, *"I feel fulfilled after I have completed the group exercises"*. The feeling of satisfaction for accomplishing a task was also a common theme that emerged from the responses. A student mentioned that "It was satisfying because you're exercising to improve health and well-being while

also getting good grades."

Many have also realized the importance of the components of fitness after performing the group task even after the project-making was done, they would like to continue doing exercises as part of their lifestyle.

Around 4 out of every 5 students (79%) in the class agreed that during the group exercises, they felt connected with their exercise group. This observation is in support of two essential elements of Cooperative Learning, that of positive interdependence and promotive interaction. The students saw that they are linked with each other, and therefore should support each other. On the aspect of Individual Accountability, the students affirmed in their response, *"We all did our part."*

There were difficulties encountered by the students during the process of accomplishing the learning objectives, which included: technical issues (like recording in Google Meet, video storage problems), initially uncooperative members, and lack of communication with group members. As the process progressed, the members of the group were able to resolve the issues by strategizing how to reach their objectives. This is one of the essential elements of Cooperative Learning, which is Group Processing. In order to address the technical issues, one student shared what their group did, *"we exercise together instead, we did group exercises in GMeet after class and I recorded it using Screencastify"*. To resolve the concern about initially uncooperative members, one student shared what the group did, *"we contacted them and asked them politely to do their work"*. Promotive Interaction, which is another essential element of Cooperative Learning, is shown when the members of the group support each other. This is highlighted by this statement from a student, *"We took it one step at a time. First, we were able to talk about the instructions and then we were able to clarify to each other what to really do. Then, we helped each other researching about the different exercises."*

CONCLUSION

This action research study has shown how the use of cooperative learning integrated with fitness apps can address the four learning outcomes of physical education (Kirk, 2012) which are: physical learning, cognitive learning, social learning, and affective learning. The students had a generally positive experience in their cooperative groups as they accomplished the task of creating an exercise plan using the SWORKIT app.

The students articulated the importance of exercise in one's wellbeing. They view exercise, not just as a task, but they were able to apply the theory of the lesson to their performance and its application to their daily life. Even if the exercises were challenging, doing it in a group made it fun and interesting

Cooperative Learning helped students who are struggling to accomplish the task alone. The support and encouragement they receive from their group mates gave them confidence to participate and perform the group work (*promotive interaction*). Accomplishing something with the help of their group members gave them a sense of relief and satisfaction that they were able to do it together. They enjoyed the part where they collaborated with each other, organized their output, and communicate and interact (*positive interdependence*). Each member of the group made sure that s/he contributed to the output (*individual accountability*)

Even if initially, they saw the group task in a negative light and they encountered difficulties and challenges, as a group they were able to resolve the issues by strategizing how to reach their objectives (*group processing*). In the process, they used effective communication with each member of the group that made them accomplish the task easily. They also learned how to respect the leadership of their member who helped them (*soft skills*).

As with any action research, there are insights and learnings that can be drawn from the experience that will further improve my teaching of P.E. Some of the suggestions from my students include, *"tryout something new like Just Dance Now or some virtual games"*, *"let people choose their own groupmates next time so they*

feel much more comfortable doing group works with them", and *"maybe reduce the sets to 2 and total exercise to 6 since everyone won't be able to complete it in time"*.

My personal reflection has led me to think about the following recommendations: Instead of using individual Exercise Worksheet, a Google Sheet can be facilitated to easily monitor the progress of each group. An 8-day exercise is exhausting for students, having at least four times a cycle with a separate Google Meet Link scheduled in their calendar will ease the burden of decision-making in conducting the group activity. Aside from Google Meet link, they may also use other video conferencing that can provide video recording where everyone can be seen in a frame to avoid individual submission.

REFERENCES

Alcón, L., Torres-Toukoumidis, A., & Morales, N. (2020) Analysis of Physical Education Apps for Cooperative Learning through Gamification. *Edulearn 2020: 12th annual International Conference on Education and New Learning Technologies*, Jul 2020, Palma de Mallorca, Spain. https://telearn.archives-ouvertes.fr/hal-02892888

Alvarez, A.V. (2020). The phenomenon of learning at a distance through emergency remote teaching amidst the pandemic crisis. *Asian Journal of Distance Education*, 15(1), 144 – 153. https://doi.org/10.5281/zenodo.3881529

Bjørke, L. & Moen, K.M. (2020). Cooperative learning in physical education: a study of students' learning journey over 24 lessons. *Physical Education and Sport Pedagogy*, 25(6), 600 – 612. https://doi.org/10.1080/17408989.2020.1761955

Bores-García, D., Hortigüela-Alcalá, D., Fernandez-Rio, F.J., GonzálezCalvo, G. & Barba-Martín, R. (2021). Research on Cooperative Learning in Physical Education: Systematic Review of the Last Five Years. *Research Quarterly for Exercise and Sport*, 92(1), 146 – 155. https://doi.org/10.1080/02701367.2020.1719276

Coughlin, S., Whitehead, M., Sheats, J., Mastromonico, J. & Smith, S. (2016). A Review of Smartphone Applications for Promoting Physical Activity. Journal of Community Medicine, 2(1). https://pubmed.ncbi.nlm.nih.gov/27034992/

Dizon, N.H., de Guzman, M.F.D., Uy, L.F., & Ganaden, A.R. (2021). Education Concerns in Public Secondary Schools of Division of Zambales, Philippines: An Education Response to COVI D-19 Pandemic. *EAS Journal of Humanities and Cultural Studies*, 3(1), 51 – 60. DOI: 10.36349/easjhcs.2021.v03i01.006

Edy, M., & Hunter, M. (2016). *Edexcel GCSE Physical Education*. Oxford University Press.

Harris, H & Chen, W. (2018) Technology-Enhanced Classroom Activity Breaks Impacting Children's Physical Activity and Fitness. *Journal of Clinical Medicine* 7(7). doi:10.3390/jcm7070165

Johnson, D.W. and Johnson, R.T. (1999). Making Cooperative Learning

Work. *Theory into Practice*, 38(2), 67 – 73. https://doi.org/10.1080/00405849909543834

Kirk, D. (2012) Physical Education Futures: Can we reform physical education in the early 21st Century? *Ejournal de la recherche sur l'intervention en éducation physique et sport*, 27, 1 – 11. https://doi.org/10.4000/ejrieps.3222

Lapada, A.A., Miguel, F.F., Robledo, D.A.R., & Alam, Z.F. (2020). Teachers' Covid-19 Awareness, Distance Learning Education Experiences and Perceptions towards Institutional Readiness and Challenges. *International Journal of Learning, Teaching and Educational Research*, 19(6), 127-144. https://doi.org/10.26803/ijlter.19.6.8

Lubis, A. H. & Dasopang, M. D. (2021). Online learning during the covid-19 pandemic: How is it implemented in elementary schools? *Premiere Educandum: Journal of Basic Education and Learning*, 11(1), 120 – 134. https://doi.org/10.25273/pe.v11i1.8618

Palicka, P., Jakubec, L. & Zvonicek, J. (2016). Mobile apps that support physical activities and the potential

of these applications in physical education at school. *Journal of Human Sport and Exercise*, 11(1), S176 – S194. http://dx.doi.org/10.14198/jhse.2016.11.Proc1.08

Rasmitadila, Aliyyah, R.R., Rachmadtullah, R., Syaodih, E., Nurtanto, M., & Tambunan, A.R.S. (2020). The Perceptions of Primary School Teachers of Online Learning during the COVID-19 Pandemic Period: A Case Study in Indonesia. *Journal of Ethnic and Cultural Studies*, 7(2), 90 – 109. http://dx.doi.org/10.29333/ejecs/388

Robosa, J., Paras, N.E., Perante, L., Alvez, T. & Tus, J. (2021). The Experiences and Challenges Faced by the Public School Teachers Amidst the COVID-19 Pandemic: A Phenomenological Study in the Philippines. *International Journal of Advance Research and Innovative Ideas in Education*, 7(1), 1342 – 1361. https://doi.org/10.6084/m9.figshare.14028833.v1

Silalahi, T.F. & Hutauruk, A.F. (2020). The Application of Cooperative Learning Model during Online Learning in the Pandemic Period. *Budapest International Research and Critics Institute-Journal*, 3(3), 1983 – 1691. https://doi.org/10.33258/birci.v3i3.1100

Slavin, R.E. (1995). *Cooperative Learning: Theory, Research, and Practice*. Allyn and Bacon.

Taylor, J. S. (2012). Students' and teachers' perceptions of physical education (Bachelor's thesis, Avondale College, Cooranbong, Australia). Retrieved from https://research.avondale.edu.au/theses_bachelor_honours/10

Watson, E. (2020). #Education: The Potential Impact of Social Media and Hashtag Ideology on the Classroom. *Research in Social Sciences and Technology*, 5(2), 40 – 56. https://doi.org/10.46303/ressat.05.02.3

Winter, E., Costello, A., O'Brien, M. & Hickey, G. (2021). Teachers' use of technology and the impact of Covid-19. *Irish Educational Studies*, 40(2), 235 – 246. https://doi.org/10.1080/03323315.2021.1916559

Zhou, L. & Li, F. (2020). A Review of the Largest Online Teaching in China for Elementary and Middle School Students during the COVID-19 Pandemic. *Best Evidence of Chinese Education*, 5(1), 549–567. https://doi.org/10.15354/bece.20.re040

Utilizing Karaoke Videos in Learning Japanese Vocabulary Among Malaysian University Students

[1]**Muhammad Alif Redzuan Abdullah, PhD**
[2]**Sanimah Hussin, PhD**

[1]muhammadalif@upm.edu.my, [2]sanimah@upm.edu.my

[1]Faculty of Modern Languages and Communication, Universiti Putra Malaysia, Serdang, Malaysia
[2]Centre of Advancement and Language Competence, Universiti Putra Malaysia, Serdang, Malaysia

Abstract: This research paper aimed to explore and investigate whether the use of karaoke videos in the Japanese language classes has an influence on vocabulary acquisition among Malaysian Japanese language learners. The study was conducted on 120 students learning the Japanese language at the beginner level as an elective subject at the Faculty of Modern Languages and Communication, Universiti Putra Malaysia (UPM). Data were collected through questionnaires, interviews, and observations. The analytical descriptive result showed that the participants were able to memorize and understand Japanese vocabulary quickly and easily after watching animation consisting of visual graphics combined with text which stimulate their brain. Data from the interviews also showed that the target vocabulary items were pronounced accurately and correctly when learners sang along while watching the karaoke videos. The triangulation of data showed that karaoke videos is a good tool to engage participants in learning the Japanese language while at the same time, having fun and feeling highly motivated to explore the language. The implication of the study suggests that the use of karaoke videos in other foreign language classes will help boost students' confidence and motivation level.

Keywords: karaoke videos, vocabulary acquisition, foreign language, Japanese language, language learning.

ELearning Forum Asia 2021

Augmenting the Virtual Environment: Technology – Innovation – Humanity

Learning-oriented Technologies

INTRODUCTION

The Japanese language has been one of the most popular global languages learned around the world. According to a survey conducted by the Japan Foundation in 2018, approximately 3.85 million people studied Japanese at a record of 18,604 institutions in 137 countries (Japan Times, 2019). Besides that, the Japanese language is significantly being an added value in the job market and tourism sector in ASEAN countries (Yoshikawa, 2007). Indonesia has the highest number of Japanese learners, follows by Vietnam, Myanmar, Malaysia, Philippines, and Singapore amounted to more than one million learners. Meanwhile, Japanese language education in Malaysia has also shown encouraging developments, especially at secondary education and higher education level. The latest survey was published in 2017 by Japan Foundation Report stated that the number of Japanese language learners in Malaysia amounted to 33,224 students, with 430 teachers and 176

institutions offering Japanese language education. Students in Higher Education Institutions are required to study at least one foreign language course in line with the needs of the latest national Higher Education Blueprint (2015-2025). The Higher Education Blueprint has outlined 'Language Proficiency' as one of the six student aspirations, where learning at least one additional foreign language is highly encouraged for university students. The Japanese language is one of the most popular foreign languages in universities due to impressive achievements in the economy, innovation, technology sector by Japan as one of the wealthiest countries in the world. This led to a higher number of students learning Japanese language in universities to add values to their resumes. Unfortunately, there had been little success among students being proficient in spoken or written form of Japanese language although they had studied for a few semesters in the university (Abas et al., 2014)

The main problem among JFL students, especially at the Higher Learning Institutions level is the mastery of Japanese vocabulary. Abas et al. (2014) study found that students who study had the Japanese language as a foreign language course at Higher Education Institutions have problems mastering vocabulary, language structure, and grammar. According to Abas et al. (2014), this problem occurs due to factors such as new foreign vocabulary for students that become more difficult to memorize and apply in practice either in communication training or sentence making exercises. Furthermore, teaching and learning time for the Japanese language course is limited to only 2 hours per week in the requirement of the university. Besides, the students had no opportunity to use and practice the new vocabulary learned outside the classroom due to the necessity of using mother tongue language or English with their friends and family. The researcher interviewed the students learning JFL before the study undertaken. The result of the interview showed that JFL students have stated that the main problem of making good sentences caused by limited knowledge of vocabulary in the Japanese language. Besides, an environment that discourages the use of linguistic learning has also been a source of weakness in verbal mastery. Another factor, this problem exists due to the short teaching time for only 2 hours a week, and thus the teaching staff can only teach a certain lexical. Therefore, this study conducted to find a formula in solving or reducing the weakness of linguistic mastery, especially new Japanese vocabulary.

Vocabulary takes a prominent role to understand language. When we provide the appropriate words, language is easy to understand and make the process of communication is more straightforward. Vocabulary is needed to expand the students' capability to understand new ideas. Lack of jargon makes the process of communication complicated. When the language learners' knowledge of vocabulary is limited, they will have problems with other learning skills like speaking and writing. Using Japanese karaoke songs in the classroom is one method that language instructors like to use to teach students. It is readily available through the Internet, and new technologies. Japanese karaoke video is easy to access and to download from the Internet. Music plays an essential role in the socialization of children and adolescents. It will benefit both teachers and learners in learning new words.

Hirano (2008) stated that the melody of the song facilitates better memorizing and recalling the vocabulary learnt among the JFL students. They performed better when the vocabulary is heard as a song rather than as a speech in the classroom. Moreover, the vocabulary is repeated in melodious and rhythmical music to enhance the memorizing process among the JFL students. This repetition is what is called the features of using music and songs in JFL learning vocabulary context for better memorizing and recalling vocabulary among JFL students. Themes help us move away from decontextualized single definitions and towards a concept-based multilayered knowledge of words. Allen (2006) and Nagy (1998) also referred to three properties of effective vocabulary instruction as integration, repetition, and meaningful use. These three characteristics are also present when it comes to the use of authentic songs in the language classroom.

In conclusion, the karaoke song is a useful and powerful teaching tool in the JFL classroom. Teachers can use karaoke songs to encourage students to learn and develop new vocabulary. It will be beneficial for both teachers and students to new Japanese words.

LITERATURE REVIEW

Highlights of the literature review indicate that fundamental problems in Japanese language proficiency are related to the question of lack of Japanese vocabulary. The issue of lack of vocabulary among JFL students restricts students' ability to use Japanese fluently in spoken and written form (Ali, 1989; Mustafa, 2009; Lazim, 2010; Abdullah, 2014; Hieda & Shabudin, 2014) Therefore, mastering Japanese vocabulary will be an essential step before students can master the Japanese language well.

Furuhata-Turner (2013) proposed that by using materials in which students are already interested, language instructors can expect that students will enhance and improve their language competencies. Moreover, interactive activities such as active participation and involvement in the activities designed will create a more learner-centered learning environment to encourage students to practice their Japanese language speaking skills, besides stimulating their critical thinking skills. Vocabulary teaching requires the use of fun and engaging media to help students understand Japanese vocabulary easily. This claim is supported by Krashen's Affective Hypothesis (1982) that karaoke songs can be the best resource to reduce stress and anxiety in foreign language learning. Studies by Butzlaf (2000), Johnson & Memmott (2006) and Shen (2009) proved that when a foreign language instructor used interesting melodies song and lyrics in teaching new vocabulary in the class, it can reduce 'affective filters' to create a relaxed and effective learning environment. Even singing karaoke songs can increase students' interest, enjoyment, and confidence in learning a foreign language.

The students were exposed to the pronunciation of the native speaker by using the correct pronunciation heard in the karaoke song used in the classroom. Due to this, they will practice using the language taught in the classroom because the rhythm and melody of the karaoke songs are conducive for students to use vocabulary naturally (Farrug, 2018). Selection of media such as karaoke songs is a practical method for teaching Japanese vocabulary because the karaoke song contains various emotional elements such as happy, sad, excited, and other emotions that can touch the feelings of someone who listens to it.

According to Gardner & Hatch (1989), human beings possess music intelligence as the ability to enjoy, recognize, perform, and compose musical pieces and have the sensitivity to rhythm and pitch. Moreover, music also has social and emotional benefits because the students gain confidence in using the Japanese language by singing the karaoke song. At the same time, karaoke songs can also play the role as a medium of pronunciation when someone forgets how to say a word they had learnt before. Humming the melody or rhythm of karaoke songs on the vocabulary known can trigger the pronunciation of the word that is stored unconsciously in the memory of the brain.

Similarly, karaoke songs have rhyming patterns, so they make lessons more enjoyable and exciting to students learning foreign languages. Meanwhile, the learners have fun during karaoke song-based activities as they become more willing to learn. Accordingly, learners can learn how to pronounce those words in no time. Thornbury (2002) clarifies that the new vocabulary is easily acquired and recalled in a short time with the help of sound. This process is beneficial because each word is repeated in the karaoke song a few times for the students to memorize them more easily and quickly.

There are a handful of studies conducted on the Japanese language such as Hirano (2008), who stated that using karaoke songs in Japanese language teaching classes can motivate students to study outside the Japanese language classroom. Besides that, Mori (2009) conducted a study on 30 Japanese language students at the University of Kansas, who found that the use of karaoke songs is effective in the acquisition of transitive and intransitive verbs. However, not much information from the above study shows a positive or negative effect on the use of songs in learning Japanese.

According to the Krashen Input Hypothesis (1982), the acquisition of new vocabulary will occur when the meaning of the recent speech is explained first to the students. The definition of terminology

can be conveyed using extra-linguistic teaching aids such as illustrations, movements, pictures, and real objects. According to Medina (2002), the use of karaoke songs in foreign language classes is in line with the Krashen Input Hypothesis (1982). Japanese karaoke songs make it easier for students to learn and remember what they learnt in learning Japanese because of the relaxed and fun Japanese language learning environment (Li & Brand, 2009; Nagy, 1998). Furthermore, the students will be more confident and sensitive than usual and easily acquire new vocabulary more effectively. This statement, aligned with Falioni's (1993) and Borisai & Dennis (2016) findings that "the use of songs in foreign language classes is a method of teaching to focus on students and produce more committed students."

According to much research conducted throughout centuries, there are many philosophers, scientists, researchers, and teachers who have recognized the importance of music to improve language proficiency. Besides, the importance of using karaoke songs in foreign language lessons significantly improves learners listening and pronunciation skills, and it plays a massive role in their overall development (Borisai & Dennis, 2016; Deutsch, 1972; Palermo, 1978). The literature review shows that the use of karaoke songs can improve skills in learning Japanese explicitly or implicitly. Besides that, the karaoke song is an effective motivational tool that encourages students to focus on the process of teaching and learning Japanese. There are many studies conducted on foreign language vocabulary mastery; however, no previous studies did relate to Japanese language vocabulary mastery among students in Malaysia. Therefore, there is a need to conduct this study. The purpose of this study is to identify the relationship between the use of karaoke songs and the vocabulary mastery of JFL students in Malaysia**.**

METHODOLOGY

A total of 120 male and female students from various races aged between 19 to 24 years were selected by "stratified random sampling" to participate in this study. They take level 1 JFL language program in Malaysian Higher Learning Institutions as elective subjects. The research instrument consists of a set of questions divided into two parts. The first part is an open-ended question on the demographics of the respondents while the second part is by a question regarding students' perceptions of the use of karaoke videos in improving their vocabulary.

The researcher also had composed five songs which is short, simple, and match the vocabulary found in the textbook "Minna no Nihongo". The lyrics of the karaoke songs are appropriate and have a valuable meaning to teach the students. Five Japanese karaoke songs written by the researcher and then been composed and sung by a professional composer cum singer were used as a research instrument in this study. The criteria to compose these karaoke songs were based on literature reviews that popular karaoke songs are not suitable as learning material for this study. Moreover, these popular karaoke songs are written not according to the syllabus of the subject taught in the classroom (Nation & Webb, 2011). Nation (2007) suggested that for incidental vocabulary learning to take place, the materials used needed to be interesting to the learners. This condition would motivate learners and foster learning. The rhythm and melody of each karaoke song were written and composed in a catchy tune to attract students to absorb the vocabulary faster and effectively. Each karaoke song has a different melody, and the tune is from a slow to fast genre Japanese karaoke songs have been uploaded in the learning e-portal to be accessible inside and outside the classroom. The respondents set a set of questionnaire questions in the 14th week of semester 2 of the 2020/21 session to obtain research data on students' perceptions of the effect of karaoke songs used in the JFL classroom.

The video clips of karaoke songs have lyrics of songs and bilingual subtitle to assist them in recognizing the audio and the video shown; thus, the students can see the lyrics while they hear and see the video clip. The ten songs selected for this study were:

1. 質問しよう. (Shitsumon shiyou)

2. 挨拶の歌. (Aisatsu no uta)

3. 数字を数えよう。(Suuji wo kazoeyou)

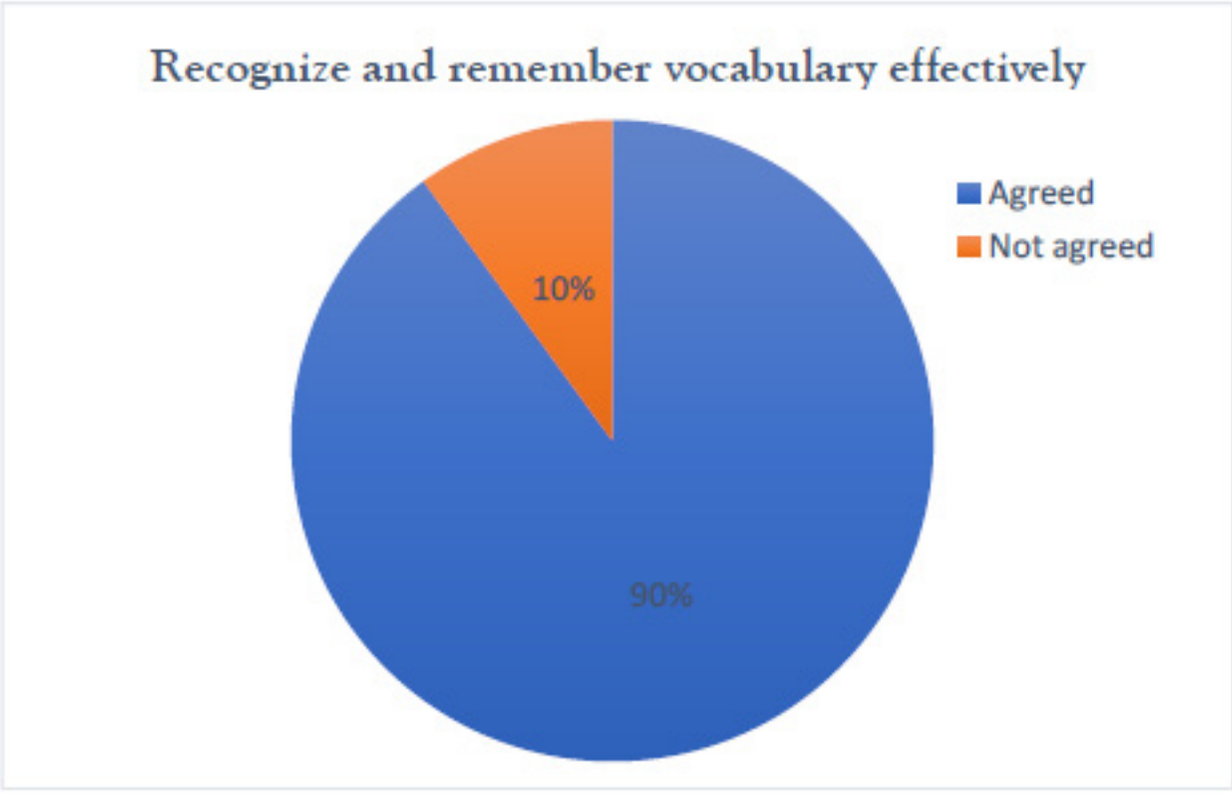
4. 日にちを覚えよ。(Hinichi wo oboeyou)

5.はい、どうぞ。(Hai, douzo)

The video clips of karaoke songs are played for selected lessons in the classroom using LCD projector and speakers. Students then are asked to listen to the video clip of the karaoke song played and read silently the lyrics shown on the screen for once. Then video clip is played for the second time, and the students were asked to sing along with the karaoke song played on the screen. The researcher gave the worksheet of the video clips to the students. The students worked in groups to find ten difficult words and make complex sentences for each word. After the students doing with their worksheet, the students will discuss their answer with the other groups (students) by the teacher's order. The students may ask and discuss with the teacher about the difficulties in comprehending the problematic words. At the end of the class, the students wrote their comments and feedback on the effectiveness of using the karaoke songs to enhance their new vocabulary learning experience. Students also took notes during the group discussions among students during group work to enrich the data collection.

RESULTS AND DISCUSSION

Figure 1: Effectiveness in Using Youtube Songs



The findings of the study in figure 1 show that almost 90% of the respondents agreed that karaoke songs help them to recognize and remember vocabulary more effectively. This is because as the respondents repeatedly sang karaoke songs, their confidence level increased, and their constraints to master new vocabulary decreased. This result is in line with Borisai & Dennis (2016) statement that "song rhythm with repetitive lyrics is a vehicle to increase students' vocabulary memory level in language learning and other language skills proficiency such as grammar structure and pronunciation among foreign language students." Further, the findings of the study show that almost all the respondents agreed that the use of karaoke songs in learning Japanese is fascinating. The respondents stated that the use of karaoke songs

could increase interest and help them memorize more effectively through karaoke rhyme songs. Some studies have noted that the use of karaoke songs is more interesting than conventional lectures. Besides, the Japanese language learning environment will be more interactive as the use of karaoke songs will involve interactions between Japanese language instructors and respondents.

Table 1: The perception of students of using karaoke songs in learning new vocabulary

Questionnaire Items	Yes		No		Total	
	Frequenc (N)	(%)	Frequenc (N)	(%)	Frequenc (N)	(%)
Why do you think using karaoke songs help you to pronounce new vocabulary better?	110	91.7	10	8.3	120	100
Melody and rhythm of the karaoke songs trigger to recall the vocabulary	115	95.8	5	4.2	120	100
Karaoke songs improves memorization	113	94.2	7	5.8	120	100
Although I am shy to using Japanese in class, but catchy karaoke songs motivate me to sing along	110	91.7	10	8.3	120	100
The lyrics which contain the vocabulary help me to understand and memorize the vocabulary.	115	95.8	5	4.2	120	100

The data in Table 1 also show that the use of karaoke songs can help the respondents to pronounce new vocabulary better. They also stated the rhythm and melody of the karaoke songs heard many times as if recorded in their memory, thus making the respondents able to recall and recite the vocabulary learned in karaoke songs more effectively. The use of karaoke songs in language learning improves memorization. Several studies students (Serafine *et al,* 1984; Borchgrevink, 1982; Christison, 1995; Wiggins, 2007) have shown that song and rhythm can improve the memorization memory of foreign language.

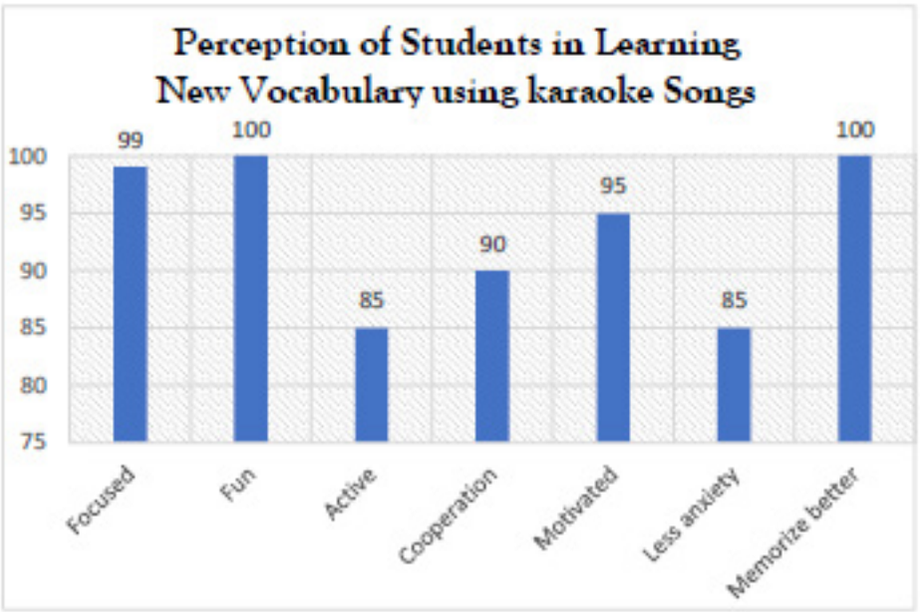
The data in Table 1 shows that respondents were excited to make vocabulary exercises related to karaoke songs introduced in Japanese language teaching classes. They did their best to try to learn the lyrics of karaoke songs even though they were ashamed to sing loudly. Due to time constraints, e-learning portals are used as a platform for respondents to upload and listen to karaoke songs repeatedly according to their convenience. Besides, the meaning of new vocabulary or lyrics has been distributed in the respondents to understand the karaoke songs.

Table 2: Vocabulary Proficiency Progress among Respondents

Result of students		Week 1	Week 14	Progress
Grade	Scale	Percentage (%)	Percentage (%)	Percentage (%)
A	80-100	50	70	50
B	60-79	20	25	40
C	50-59	10	5	10
D	45-49	10	0	0
E	40-44	10	0	0
Total		100	100	

The researcher had continuous monitoring the progress of the respondents by collecting their marks in vocabulary training in the form of an excel file and was summed up on the 14th weekend of semester 2 of the 2020/2021 session. The overall marks of the respondents showed continuous vocabulary proficiency progress from the first exercise to the last vocabulary exercise carried through the study in Table 2.

Figure 2: Perception of Students in Learning New Vocabulary



Findings in figure 2 show that almost all respondents feel focused on learning Japanese vocabulary in the classroom because they are directly involved in karaoke song singing activities. They feel fun and happy to be able to make movements related to the karaoke song they sang during the related vocabulary learning process. Besides, the respondents stated that they did not feel bored and lost focus as their senses moved actively throughout the singing activity. It contrasts with conventional classes that make the respondents sit and copy the notes given by the lecturer.

The use of various linguistic intelligence ensures the process involved in language learning through the karaoke songs. One of them is visualspatial intelligence. For example, they are reading lyrics in the karaoke song. Next is the kinesthetic or psychomotor intelligence. They are clapping or dancing to the beat of the karaoke song, and lastly interpersonal intelligence which is chanting as a whole group while singing the karaoke song. This process facilitates foreign language acquisition because the fun in the karaoke song helps foreign language learners develop their instincts to recognize the linguistic features of the target language through singing (Butzlaff, 2000)]. The affective aspect of the respondents also developed with the use of karaoke songs because the respondents had to show their emotions while singing the karaoke songs. The karaoke song contains various emotional elements such as happy, sad, enthusiastic, and other emotions that can touch the feelings of someone who listens to it.

The respondents stated that karaoke song is a useful motivational tool to reduce learning stress and anxiety. As shown by Burhayani (2013), the nature of fun songs, rhythmic music, and song lyrics can help create a relaxed, effective, and low-stress learning environment, and therefore foster positive emotional states among students. Thus, music and songs can function directly by motivating students to learn Japanese, lowering "affective filters" and bringing maximum stimuli and effective language acquisition (Butzlaff, 2000; Johnson & Memmott, 2006). The result is in line with the findings of Yamato (2006) and Hirano (2008) that Japanese songs make it easier for students to learn and remember what they learnt in learning Japanese because of the relaxed and fun Japanese learning environment.

CONCLUSION

The findings of the study revealed that using karaoke songs in learning new vocabulary in JFL class can increased motivation and interest among respondents in the classroom. The use of karaoke songs turned the learning process of Japanese vocabulary more relaxing and fun because the students feel fun and do not feel bored in the process of teaching and learning Japanese. The use of karaoke songs that attract rhythm helps students to memorize and remember Japanese vocabulary more effectively. Therefore, the use of karaoke songs in the teaching of Japanese vocabulary has a positive effect on improving the mastery of Japanese vocabulary of students in a Malaysian university. Even the cognitive, psychomotor, and affective aspects develop in line with the acquisition of student vocabulary throughout the process of learning Japanese vocabulary occurs.

REFERENCES

Abas, N.A, Sardi, J & Aziz, A. (2014) Development of Online Japanese Language Teaching Materials Design. *Proceedings of Third International Conference in Issues of Language Teaching to Non-Native Speakers*, 301- 310. Universiti Teknologi Mara Malaysia.

Abdullah, M. A. R. (2014). *Oral Communication Strategies among Malay Students in Malaysia*. Unpublished PhD Dissertation, Universiti Putra Malaysia

Abrate, J. H. (1983). Pedagogical Applications of the French Popular Song in the Foreign Language Classroom. *The Modern Language Journal*, 67.

Allen, J. (2006). *Words, Words, Words: Teaching Vocabulary in Grades 4–12*. New York: Stenhouse.

Ali, S. (1989). *An Examination of Case Particle Errors in the Written Work of Malay Learners of Japanese*. Unpublished M.A. Thesis, Universiti Malaya.

Brett, A., Rothlein, L. & Hurley, M. (1996). Vocabulary Acquisition from Listening to Stories and Explanations of Target Words. *The Elementary School Journal*, 96 (4).

Borchgrevink, H. (1982). Prosody and Musical Rhythm are Controled by the Speech Hemisphere. In M. Clynes (Ed.), Music, Mind and Brain. NewYork: Plenum Press.

Borisai, T., & Dennis, N. K. (2016). A Study of Using Pop Songs to Promote New Vocabulary Learning for Secondary School Students". *International Journal of Research Granthaalayah*, 4(1), 86-92.

Burhayani, E. (2013). The Effectiveness of Teaching Vocabulary through Songs to the Second Years Students of Ikatan Keluarga Kesejahteraan Tentara (IKKT) Elementary School West Jakarta. *Proceedings of 2nd International Seminar on Quality and Affordable Education*, 2 69-73. Universiti Teknologi Malaysia.

Butzlaff, R. (2000). Can Music be Used to Teach Reading? *Journal of Aesthetic Education*, 34.

Christison, M. A. (1995). *English through Poetry*. San Francisco: Alta Books Deutsch, D. (1972). Music and Memory. *Psychology Today*, 6.

Falioni, J. W. (1993). Music as Means to Enhance Cultural Awareness and Literacy in the Foreign Language Classroom. Mid-Atlantic *Journal of Foreign Language Pedagogy*, 7.

Farrug, D. (2018). How Music Helps Language Learning. Retrieved from language study: http://languagestudy.suite101.com/article.cfm/ why_use_music_to_learn_language.

Furuhata-Turner, H. (2013). Use of comic manga as a learning tool to teach translation of Japanese. *The Journal of Language Teaching and Learning*, 3(2), 72-83.

Gardner, H., & Hatch, T. Multiple intelligences go to school: Educational implications of the theory of multiple intelligences. *Educational Researcher*, 18(8), 4-9.1989

Hieda, N., & Shabudin, M. (2014). Sikap Mahasiswa UKM Terhadap Bahasa Jepun: Satu Kajian Kes. *GEMA ONLINE Journal of Language Studies* 14 (1):135- 150

Hirano, E. (2008). *The effects of Utilizing Japanese Songs for Acquiring Japanese Pitch as a Foreign Language*. Paper

presented at the Annual Meeting of the Central Association of Teachers of Japanese, University of Wisconsin–Madison. United States of America.

Japan Times. (2019). Numbers of Japanese Language Institutions Soars in Asia, Survey finds. *Japan Times.* Retrieve from https://www.japantimes.co.jp/news/2019/10/10/national/Japanese- language-schools-soaring Asia

Johnson, C. M. & Memmott, J. E. (2006). Examination of Relationships between Music Programs of Differing Quality and Standardized Test Results. *Journal of Research in Music Education*, 54(4).

Lazim, A. S. (2010*). Two Decade on Looking East Policy: Evaluation Aspect on Education (1982-2002).* Tanjung Malim: UPSI Publisher.

Li, X., & Brand, M. (2009). Effectiveness of Music on Vocabulary Acquisition, Language Usage, and Meaning for Mainland Chinese ESL learners. *Contributions to Music Education*, 36(1).

Medina, S. (2002). Acquiring Vocabulary through Story-Songs. *MEXTESOL Journal*, 23(1), 287.

Mori, N. (2009). Effects of Singing on the Vocabulary Acquisition of University Japanese Foreign Language Students." *Proceedings of the 25th Annual Conference of the Southeastern Association of Teachers of Japanese (SEATJ).* Durham, NC. Retrieved from http://web.duke.edu/apsi/events/Conferences/SEATJ2010Conference/ Proceedings.html.

Mustafa, Z. (2009). Error Analysis in Malay Students' Japanese Language Composition in Universiti Malaya. *Jurnal Bahasa dan Budaya Jepun*

Nagy, W. E. (1988). *Teaching Vocabulary to Improve Reading Comprehension.* Urbana: ERICC learning house on Reading & Communication Skills.

Nuessel, F. & Cicogna, C. (1991). The Integration of Songs and Music into the Italian Curriculum. *Italica*, 68(4),

Palermo, D. (1978). *The Psychology of Language*. Illinois: Scott, Foresman and Company.

Pressley, M., Levin, J. R., Hall, J. W., Miller, G. E., & Berry, J. K. (1980). The Keyword Method and Foreign Word Acquisition. *Journal of Experimental Psychology*, 6.

Serafine, M., Crowder, R., and Repp, B. (1984). Integration of Melody and Test in Memory for Songs. *Cognition*, 16 (3).

Shen, H. H. (2009). Size and Strength: Written Vocabulary Acquisition among Advanced Learners. *Chinese Teaching in the World,* 23 (1).

Thornbury, S. (2002). *How to teach vocabulary*. England: Pearson Education Limited.

Yamato, E. (2006). Nihon Drama Shichoo to Nihongo Gakushu (Watching Japanese Drama and Learning Japanese Language). *Nihongakukan*, 10.

Yoshikawa, H. (2007). Japan's Lost Decade: What Have We Learned and Where Are We Heading. *Asian Economic Policy Review*, 2 (2), 186- 203. Zimmerman, C. B. (1997). Do Reading and Interactive Vocabulary Instruction Make a Difference? An Empirical Study. *TESOL Quarterly*, 31(1).

360-Degree Panoramic Virtual Site Visit for Construction Technology Education

[1]Junyu CHEN, [2]Wai Kei KONG, [3]Minkoo KIM, [4]JoonOh SEO, [5]Hung-Lin CHI and [6]Michael C.H. YAM

[1]21065586R@connect.polyu.hk, [2]kong.wai-kei@polyu.edu.hk, [3]joekim@chungbuk.ac.kr, [4]joonoh.seo@polyu.edu.hk, [5]hunglin.chi@polyu.edu.hk, [6]michael.yam@polyu.edu.hk

[1, 2, 4, 5, 6]Department of Building and Real Estate, Faculty of Construction and Environment, The Hong Kong Polytechnic University, Kowloon, Hong Kong SAR
[3]Department of Architectural Engineering, College of Engineering, Chungbuk National University, Chungbuk, South Korea

Abstract: In Construction Technology Education, construction site visits play an important role for undergraduate students to get familiar with the real construction environment, combine the textbook knowledge with practice and develop their competence to embrace the industry innovations and challenges. Real construction site visits face challenges in getting the access to proper construction sites and ensuring the safety of visitors. This study first utilizes 360-degree panoramas to develop a project-live e-platform with game elements to provide an immersive environment and present the approximate complexity of construction sites. Secondly, the study evaluates the effectiveness and the degree of satisfaction of the 360-degree panoramic virtual site visit in Construction Technology Education through the implementation in relevant courses at the Hong Kong Polytechnic University. The students' knowledge acquisition and technology acceptance as well as their opinions are collected and well measured. Finally, feedback as obtained from in-class quizzes and questionnaire surveys is analyzed. According to the responses, the comparative analysis of teaching methods is conducted to not only present the distinction of the proposed 360degree panoramic virtual construction site visit from the available lecture-based approaches but also elicit the future improvement in teaching aids for Construction Technology Education.

Keywords: Construction Technology Education; 360-degree panoramas; virtual site visit; e-platform; Hong Kong

INTRODUCTION

Construction technologies have made contributions to the innovation in relevant aspects such as project delivery methods, resource optimization, machine utilization, scheduling control and on-site safety management across the world's different construction cultures. In the environment where both engineers and managers of the collaborative construction project team are required to have comprehensive professional knowledge to ensure the successful project execution (Peurifoy et al., 2018), the Construction Technology Education is essential for undergraduate students to develop

their competence to embrace the industry innovations and challenges. For the Construction Technology Education, discipline traditions and characteristics should be considered. Firstly, one challenge with the multidisciplinary subject is that it is difficult to integrate knowledge from all courses into one and provide students with a sound knowledge system (Wong et al., 2011). Secondly, in addition to using typical textbooks as references, Construction Technology courses at universities should include the local practices as examples for students' better understanding of the construction industry.

As future practitioners, the undergraduate students with a major in construction engineering are required to get familiar with the real construction environment and attain the abilities to combine acquired knowledge with practice before they enter the industry. Construction site visits can provide students with experiential learning opportunities to closely observe the construction activities, comprehend the construction sequences and know more about roles of different professions in the construction industry. However, construction sites often have a congested site layout and tight working schedule, which makes regularly visiting construction sites for the teaching and learning purpose difficult to implement (Wilkins & Barrett, 2000). Therefore, in addition to imparting sufficient professional knowledge, researchers and educators also make efforts to provide multiple practice-based topics and try to find an alternative teaching method to present the same information as real construction site visits for construction engineering courses at the tertiary level.

Ever since the early 21st century, visualization technique has been applied in construction engineering education with its numerous variants (Wang et al., 2018). Typically, Building Information Modeling (BIM) has recently been widely adopted to generate digital 3D or multidimensional models to assist the project design, simulate the construction sequence and manage the project schedule, cost, quality, safety and risks (Becerik-Gerber et al., 2012;Li et al., 2017; Ham et al., 2018). However, there are three main limitations when applying BIM technology to enable the enhancement of construction engineering education (Eiris et al., 2018, 2020). Firstly, it is hard to visualize every detailed element on construction sites in BIM models. Secondly, the development of BIM models may take much effort and time, especially when the models are aimed at providing comprehensive multidisciplinary knowledge across the whole construction project lifecycle. Thirdly, lecturers who adopt BIM as the main teaching medium may spend much time introducing the BIM software instead of the knowledge of construction technology (Wong et al., 2011). In summary, an alternative approach that can be used to achieve the same outcomes of real construction site visits is needed.

This research proposes a project-live e-platform for Construction Technology Education and evaluates its effectiveness and degree of satisfaction through a case study, using the implementation of Construction Technology courses at the Hong Kong Polytechnic University. The specific objectives are set as: (1) to develop an interactive e-platform containing construction site information using 360-degree panoramas; (2) to implement the virtual construction site visit in Construction Technology related curricula; (3) to conduct evaluation of students' learning outcomes in the aspects of test performance and the potential in solving practical problems; (4) to discuss the findings from the evaluation process and elicit better teaching and learning methods for Construction Technology Education.

LITERATURE REVIEW

A. Characteristics of Construction Technology Education

Construction Technology is one backbone course in the discipline of construction engineering at the tertiary level. As is shown in Table 1, current Construction Technology curricula in The Hong Kong Polytechnic University, Faculty of Construction and Environment are listed as a reference. In order for students majored in construction engineering to fully understand how high-rise buildings are erected, many prior efforts have been made to utilize visualization tools to achieve effective teaching and learning of Construction Technology. H. Li & Love (1998) developed a series of models as demonstrative and

explorative tools for students immersed in the building erection procedures. In this study, Virtual Reality (VR) was utilized and integrated with a set of software and hardware systems such as a 3D mouse, a pair of 3D glasses, a Pentium PC, AutoCAD R14 and 3D Studio Max, etc. And then, with the development of Building Information Modeling (BIM), a successor to the Computer-Aided Drafting (CAD), many approaches have been adopted to not only introduce BIM into the existing Construction Technology curricula as a visualization tool for teaching but also offer some standalone subjects for students to apply this technology in their future work (Wong et al., 2011).

More recently, e-platforms have been widely used to assist in conducting lectures or tutorials for education purposes in various courses such as Environmental Chemistry (Fung et al., 2019), Music Appreciation (Gan et al., 2021) and Astronomy (Rosenfield et al., 2018). With the advantages such as wide accessibility, large information capacity and transmissibility (Jain et al., 1998), e-platforms can also be applied as a computerized delivery method in Construction Technology Education. When traced back to the earlier applications, a joint effort was made by universities in Hong Kong to develop a web-based teaching and learning environment to provide virtual tours for Construction Technology Education (Wilkins & Barrett, 2000). With the advent of innovative visualization tools and newly-adopted construction technologies such as precast concrete construction and Modular Integrated Construction (MiC), the methods and materials for Construction Technology Education require regular update. However, few studies have been reported to apply more tentative approaches to develop a better learning environment for this discipline.

Table 1
A selected list of Construction Technology-related courses in The Hong Kong Polytechnic University

Department	Course Name	Intended Learning Outcomes
PolyU, Faculty of Construction and Environment, Department of Building and Real Estate	Construction Technology and Materials I	To learn about basic terminology, functional requirements, interrelationships of building materials, elements and components
	Construction Technology and Materials II; Intermediate Construction Technology & Materials	To possess knowledge of planning, execution, identifying materials and solving technological problems in construction projects
	Advanced Construction Technology	To keep up with updated technologies and conduct preliminary analysis on the selected construction technologies; to enhance communication skills and foster life-long learning
	Information Technology and Building Information Modelling for Construction	To understand and demonstrate the knowledge of building life cycle process and the BIM application during various stages of a building project

PolyU, Faculty of Construction and Environment, Department of Civil and Environmental Engineering	Construction Technology and Temporary Works	To acquire the knowledge of basic concepts, the development and the merits and constraints of construction technologies; to carry out practical design of temporary works
	Introduction to onstruction Technology and Management	To learn about the role of construction project manager, the principles of organization, the proper use of on-site equipment; to apply the critical path method and prepare technical reports
	Construction Technology	To apply construction techniques to and identify technological considerations of building construction in Hong Kong

B. Project-Based Learning (PBL) approach

Project-Based Learning (PBL) is an effective method that can engage students in active learning and improve their soft skills (e.g., teamwork) by posing questions, problems or scenarios (Vogler et al., 2018). Wu et al. (2019) designed a BIM-enabled platform to train students' global engineering collaboration skills through the project of building design for post-disaster reconstruction in India and Taiwan. The project-based teaching and learning method was proved to be helpful in the issues of poor communication, passive problem finding and limited spatial cognition in global engineering courses. Tsai et al. (2019) implemented an online course for BIM education using a seven-floor residence project as the case study. The authors pointed out that the combination of BIM with real-life projects can enhance students' understanding of this technology.

Off-Site Manufacturing (OSM) such as non-volumetric precast concrete construction and Modular Integrated Construction (MiC) techniques has been widely adopted in the construction industry (Goodier & Pan, 2010). With the main idea of producing concrete in reusable molds in factory and lifting into place, the construction projects employing precast concrete construction or MiC have advantages over those using traditional cast-in-situ methods in construction duration, safety and sustainability (Eastman & Sacks, 2008; Hussein & Zayed, 2021). Such fast-paced construction sites where the machinery keep running with all dynamics also require the on-site practitioners to possess the efficient collaboration skills and proficient knowledge in Construction Technology. However, few studies in Construction Technology Education were reported containing real-world project materials to demonstrate such updated construction technologies.

C. 360-degree panoramic environment

Visualization tools have ever-expanding applications in training and education (X. Li et al., 2018; Wang et al., 2018; Dhalmahapatra et al., 2021). Virtual Reality (VR) techniques such as BIM demonstrate simplified building components and the basic progress of the building project in the virtual models. Augmented Reality (AR) techniques enhance the real-world physical objects by linking them with digital information through a single user interface. 360-degree panoramas, which can be used to provide continuous 180-degree up-and-down and 360-degree round views for the users, are currently concerned as a counterpart of BIM models to present the information of construction sites. Gheisari et al. (2016) integrated 360degree panoramas and BIM to generate a semi-augmented-reality environment. The authors pointed out that the location-independency, natural immersion and the interactivity of the

augmented 360-degree panoramic environment would make it an alternative option to other VR and AR methods. Eiris et al. (2020) presented safety hazards in VR and 360degree panoramic environments respectively to compare their effectiveness in improving the trainees' ability of hazard identification and noted that 360-degreee panoramic scenes are more immersive and challenging for trainees' to identify safety hazards as they present the real complexity of construction sites. As for now, many studies are still focused on the usability of 360-degree panoramas in construction safety education. However, few studies have been reported to utilize the 360-degree panoramic environment to present information of real construction projects along with their progress so as to provide relevant knowledge of the applied construction technologies.

METHODOLOGY

In order to explore the effectiveness and the degree of satisfaction of the virtual construction site visit in tertiary Construction Technology Education and propose relevant recommendations, the research methodology is designed through three main steps, which is illustrated in **Figure 1**. First of all, this study develops a project-live e-platform with a 360degree panoramic environment. The study utilizes the site information of a public rental housing project, which is a high-rise building project in Hong Kong and adopted the precast concrete construction method. Within this e-platform, the authors construct an informative model for the teachers' instruction and a gamified model for the students' exploration (see **Figure 2**). At the second step, the evaluation of the effectiveness and the degree of satisfaction of the developed e-platform is divided into a pilot study and an experiment. Through the evaluation process, teachers conduct tutorials using the informative model and students are given access to the gamified model after class. In-class quizzes and questionnaire surveys are utilized to acquire the participant responses in different teaching and learning conditions. Finally, this study performs data analysis of the results acquired from the pilot study and the experiment. The results from in-class quizzes is analyzed descriptively to assess students' academic performance and potential in solving practical problems so as to evaluate the effectiveness of the e-platform. At the same time, the responses from questionnaire surveys are collected and summarized to evaluate the the degree of satisfaction in terms of the usefulness, the quality of content presentation and the degree of design satisfaction of the e-platform.

Figure 1:
Three steps of research methodology

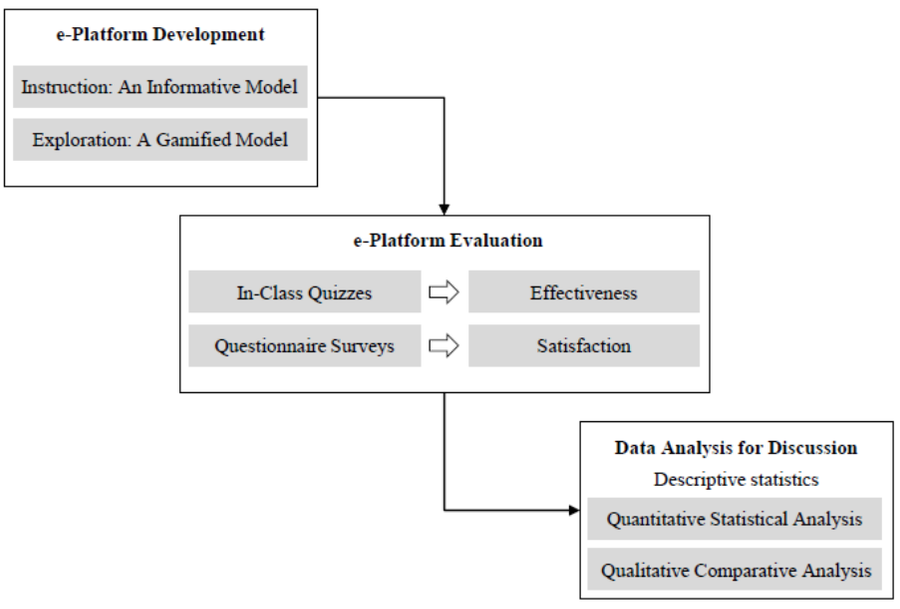
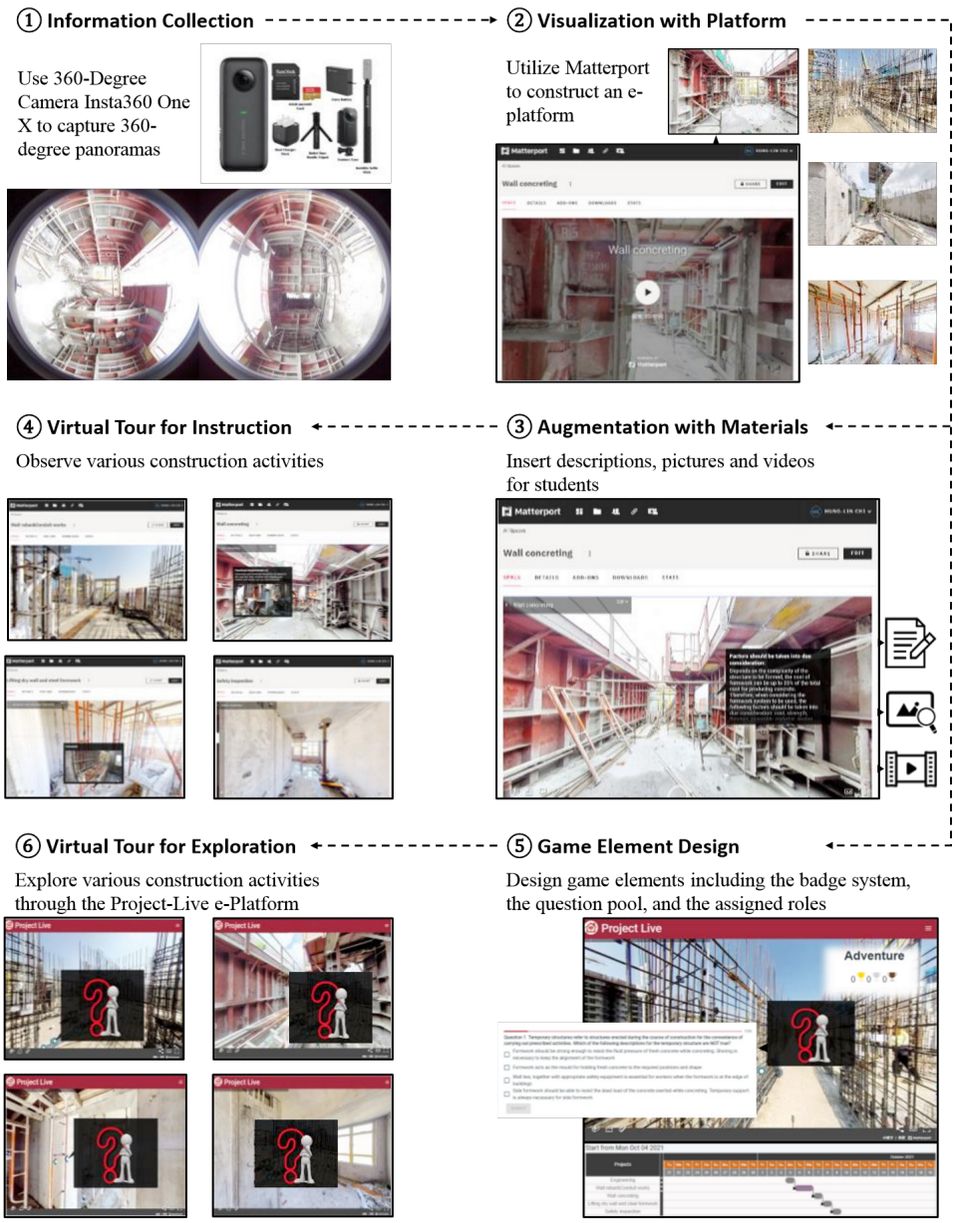


Figure 2:
Development of the 360-degree panoramic e-platform

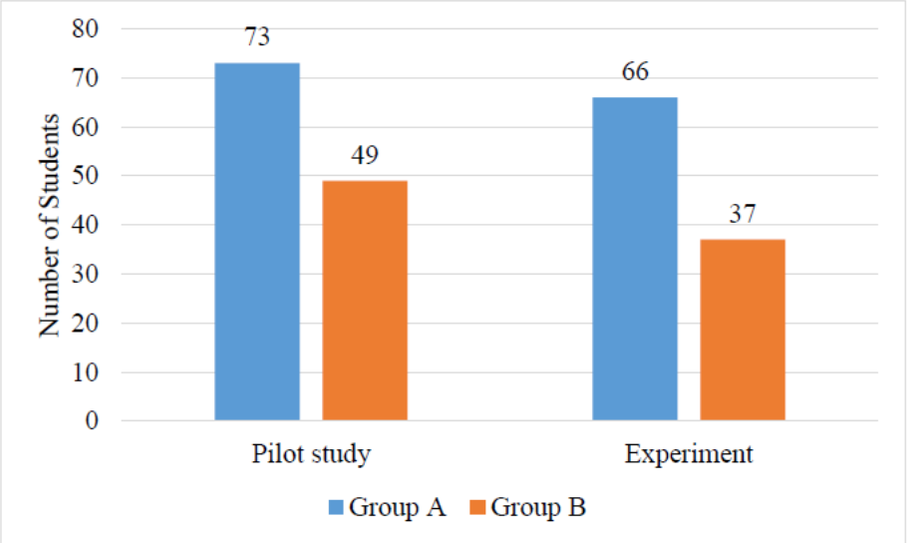


RESULTS AND DISCUSSION

A. Participants

In the research, there are 122 students enrolled in the pilot study and 103 students in the experiment. The students are all from the course Construction Technology and Materials I at The Hong Kong Polytechnic University, Department of Building and Real Estate. They are divided into two groups and the grouping information is illustrated in **Figure 3**. In Group A, the teacher-led virtual construction site visit using the informative model of the developed project-live e-platform is conducted first and then students are asked to take an in-class quiz. In Group B, the order of the virtual construction site visit and the in-class quiz is switched. The quiz questions set for the pilot study are mainly focused on textbook knowledge, students can find the answers of them from the teaching materials. Whereas, for the experiment, the quiz design is more practice-oriented and the students have to reflect on the applications of the construction technologies in work practices.

Figure 3:
Group information of participants



B. Results of in-class quizzes

Figure 4 and **Figure 5** illustrate the descriptive statistics for students who are divided into Group A and Group B in the pilot study and the experiment, respectively. In the pilot study, the average of total scores of five tested questions of students from Group A is higher than that of students from Group B. It is revealed in the results that the application of the virtual construction site visit has improved students' test performance by 13.4 percent. Students from Group A performed slightly better than students from Group B in Question Two, Question Four and Question Five. However, the Question One and Question Three have the inverse trend, with higher average scores in students from Group B. In the experiment, the design of in-class quiz questions is more practice-oriented than the pilot study. The results from descriptive statistics have shown that the students from Group A attain higher average scores of all tested questions than students from Group B. Overall, the implementation of the virtual construction site visit increases the average total score by 17.8 percent in the experiment.

Figure 4:
Descriptive statistics of in-class quiz results of the pilot study

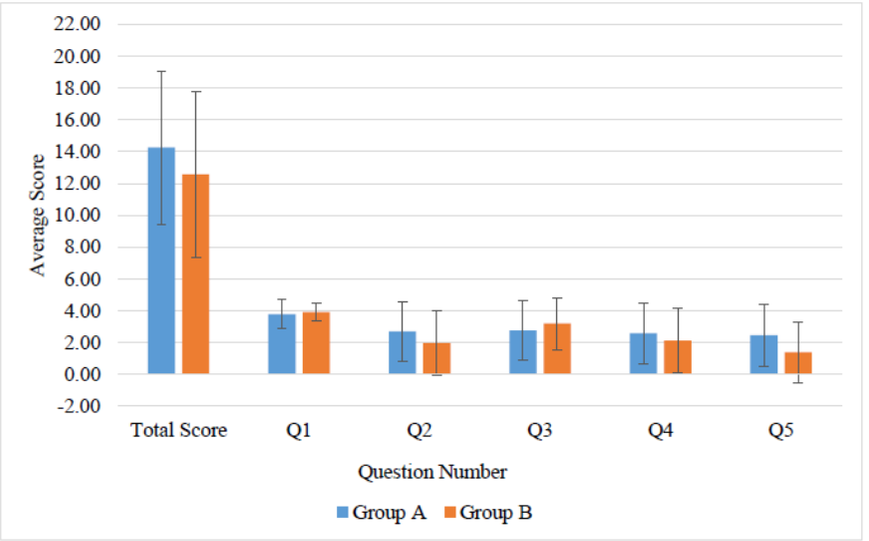
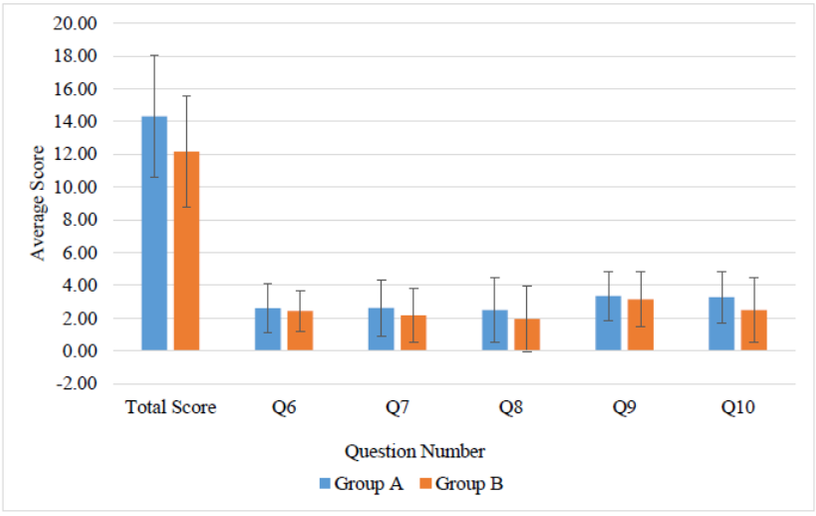


Figure 5:
Descriptive statistics of in-class quiz results of the experiment



C. Results of the questionnaire survey

Students' feedback is collected through an online questionnaire survey, which utilizes a five-point Likert scale to evaluate the degree of satisfaction of the developed e-platform. After participating in the teacherled instruction and exploring the e-platform on their own, students are asked to score from 1 (strongly disagree) to 5 (strongly agree) to the questions and suggest some recommendations for the future improvement. The questionnaire survey is designed to evaluate the degree of satisfaction of the developed e-platform from three aspects: the usefulness, the quality of contents and the quality of design. As illustrated in **Figure 6**, **Figure 7** and **Figure 8**, most students have a positive attitude to the virtual construction site visit using the e-platform. From the first aspect, the average score for Question One to Question Four attains 3.82, which is the highest average score among different aspects. The results indicate that almost all students agree with that the virtual construction site visit can help them achieve learning outcomes and make them become better learners. From the second aspect, the average score on the quality of contents is 3.67, which means many students do not have great satisfaction with the content presentation of the e-platform. One student suggests that higher resolution of pictures should be provided. From the third aspect, from the students' scoring on Question Eight to Question Ten, most students are satisfied with the e-platform design such as the interactive learning environment and the game elements within it. But some students respond that the e-platform may have a high requirement on devices.

Figure 6:
Results of the questionnaire survey on usefulness of the e-platform

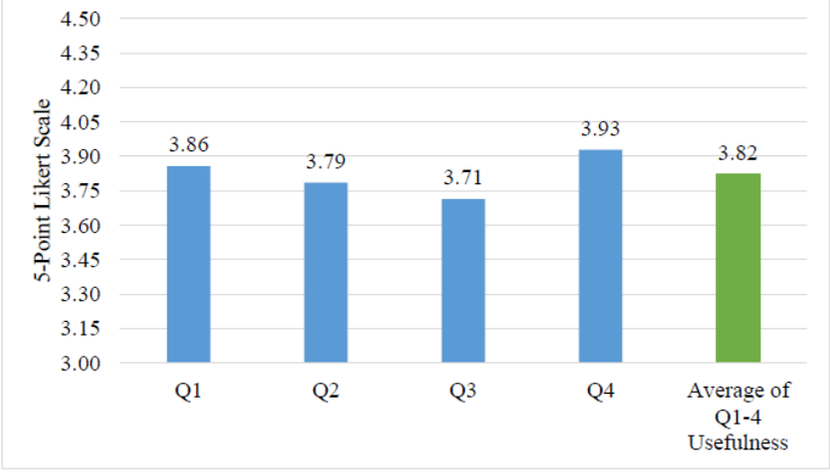


Figure 7:
Results of the questionnaire survey on quality of contents of the e-platform

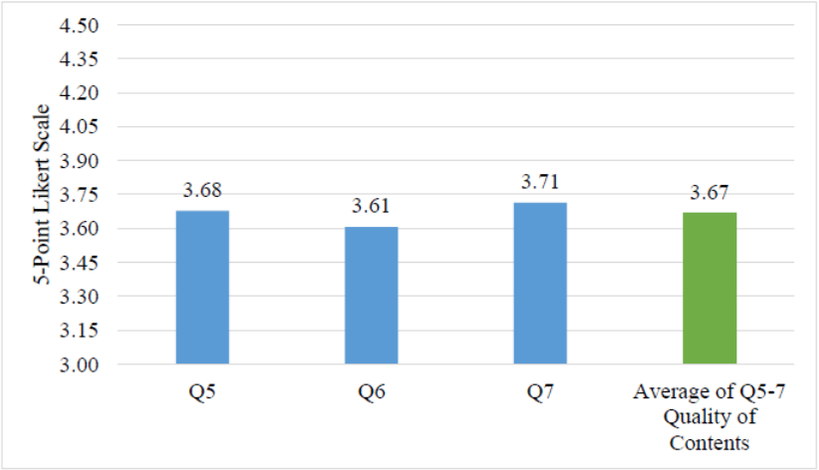
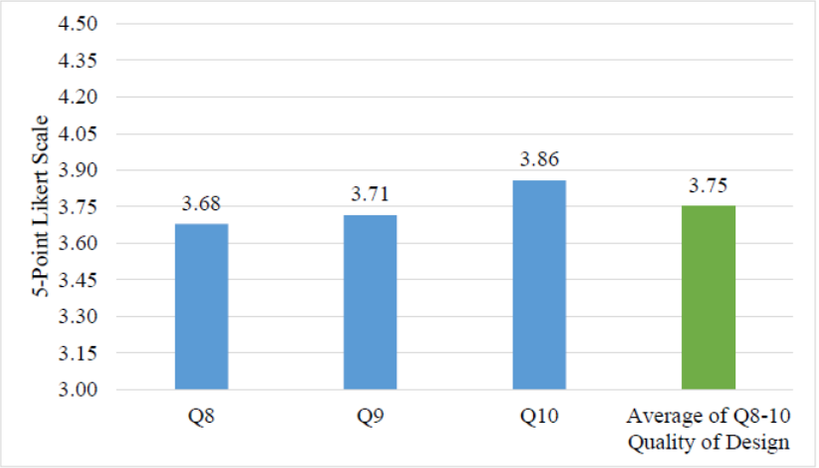


Figure 8:
Results of the questionnaire survey on quality of design of the e-platform



D. Discussion

The results obtained from the evaluation with students' participation first indicate the effectiveness of the virtual construction site visit in Construction Technology Education. Both in the pilot study and the experiment, the implementation of virtual construction site visit has increased students' test performance. Since Question One to Question Five are mainly based on textbook knowledge, the strengths of the developed eplatform are not distinct in some of such questions. In the experiment, the design of Question Six to Question Ten is more practice-oriented than the pilot study and students engaged in the virtual construction site visit have shown obvious advantages in such quizzes. By comparing the students from the pilot study and the experiment, it can be concluded that the developed project-live e-platform can benefit students' academic performance but have more influences on their potential in problem-solving.

On the other hand, the degree of satisfaction of the virtual construction site visit is assessed by the students' feedback after exploring various construction scenes created on the project-live e-platform. The feedback reveals that most of the students recognize the usefulness of the eplatform and feel satisfied with its content presentation and game element design. However, there are some drawbacks identified by the users. Firstly, the 360-degree panoramas captured on construction site have issues such as low resolution, over-exposure or too dark. Devices that can solve these problems are preferable in the future work to provide students with a more immersive environment of construction sites. Secondly, more efforts should

be made to ensure proper web operations. For example, the e-platform should be equipped with a message board for students to report problems, give suggestions and for administrators to respond in time.

CONCLUSION

In order to find an effective teaching tool in aid of the traditional lecture-based Construction Technology Education, the main work of this study is summarized as below:

1. This study first conducts literature review of available visualization tools such as BIM applied in courses related to the construction engineering.

2. According to the features of models generated by other VR or AR techniques, which may lead to much time and effort consumption, this study utilizes 360-degree panoramas as an alternative to visualize the information of real construction sites.

3. This study develops an e-platform with an informative model for instruction and a gamified model for exploration to provide an immersive teaching and learning environment based on a real public rental housing project in Hong Kong.

4. Through incorporating the virtual construction site visit into the course Construction Technology and Materials I, learning outcomes of 225 participating students are analyzed to assess the effectiveness and the degree of satisfaction of the developed project-live e-platform.

The findings of this study include that the immersive virtual construction site visit developed by 360-degree panoramas is beneficial to students' academic performance and potential in solving practical problems as practitioners in the construction industry. This study contributes to provide an appropriate visualization tool for the tertiary Construction Technology Education and resolve the difficulties in implementing construction site visits for learning purposes. Future work should consider students' technology acceptance and the impact of students' readiness on their responses. In addition, the developed e-platform in this study is computer-based, which creates inconvenience for users. Technical issues to provide the access on portable devices should be solved. Last but not the least, this study is focused on presenting the construction technologies. The structure and development process of the e-platform can also be used in other relevant disciplines such as Project Management, Structure Engineering and Building Services Engineering to provide a comprehensive system for multidisciplinary teaching and learning.

REFERENCES

Becerik-Gerber, B., Ku, K., & Jazizadeh, F. (2012). BIM-enabled virtual and collaborative construction engineering and management. *Journal of Professional Issues in Engineering Education and Practice*, *138*(3), 234–245. https://doi.org/10.1061/(ASCE)EI.1943-5541.0000098

Dhalmahapatra, K., Maiti, J., & Krishna, O. B. (2021). Assessment of virtual reality based safety training simulator for electric overhead crane operations. *Safety Science*, *139*(March 2020), 105241. https://doi.org/10.1016/j.ssci.2021.105241

Eastman, C. M., & Sacks, R. (2008). Relative Productivity in the AEC Industries in the United States for On-Site and Off-Site Activities. *Journal of Construction Engineering and Management*, *134*(7), 517–526. https://doi.org/10.1061/(asce)0733-9364(2008)134:7(517)

Eiris, R., Gheisari, M., & Esmaeili, B. (2018). Pars: Using augmented 360degree panoramas of reality for

construction safety training.

International Journal of Environmental Research and Public Health, *15*(11). https://doi.org/10.3390/ijerph15112452

Eiris, R., Gheisari, M., & Esmaeili, B. (2020). Desktop-based safety training using 360-degree panorama and static virtual reality techniques: A comparative experimental study. *Automation in Construction*, *109*(May

2019), 102969. https://doi.org/10.1016/j.autcon.2019.102969

Fung, F. M., Choo, W. Y., Ardisara, A., Zimmermann, C. D., Watts, S., Koscielniak, T., Blanc, E., Coumoul, X., & Dumke, R. (2019).

Applying a Virtual Reality Platform in Environmental Chemistry Education to Conduct a Field Trip to an Overseas Site. *Journal of Chemical Education*, *96*(2), 382–386. https://doi.org/10.1021/acs.jchemed.8b00728

Gan, L., Wang, D., Wang, C., Xiao, D., Zhang, M., Wang, Z., & Li, F. (2021). Design and implementation of multimedia teaching platform for situational teaching of music appreciation course based on virtual reality. *International Journal of Electrical Engineering and Education*. https://doi.org/10.1177/0020720920986090

Gheisari, M., Foroughi Sabzevar, M., Chen, P., & Irizzary, J. (2016). Integrating BIM and Panorama to Create a Semi Augmented Reality Experience of a Construction Site.pdf. *Routledge*, *12*(4), 303–316.

Goodier, C., & Pan, W. (2010). The future of UK computing. In *Physics*

Bulletin. RICS. https://doi.org/10.1088/0031-9112/23/1/003

Ham, N., Moon, S., Kim, J.-H., & Kim, J.-J. (2018). Economic Analysis of Design Errors in BIM-Based High-Rise Construction Projects: Case Study of Haeundae L Project. *Journal of Construction Engineering and Management*, *144*(6), 05018006. https://doi.org/10.1061/(asce)co.1943-7862.0001498

Hussein, M., & Zayed, T. (2021). Crane operations and planning in modular integrated construction: Mixed review of literature.

Automation in Construction, *122*(October 2020), 103466. https://doi.org/10.1016/j.autcon.2020.103466

Jain, A., Kensek, K., & Noble, D. (1998). An interactive Web-based teaching tool for simplified 3D analysis of solar rhythms. In *Automation in Construction* (Vol. 8, Issue 2, pp. 181–194). https://doi.org/10.1016/S0926-5805(98)00072-7

Li, H., & Love, P. E. D. (1998). Use of Visual Simulation in Construction Technology Education. In *Computer Applications in Engineering Education* (Vol. 6, Issue 4, pp. 217–222).

https://doi.org/10.1002/(SICI)1099-0542(1998)6:4<217::AIDCAE1>3.0.CO;2-B

Li, X., Wu, P., Shen, G. Q., Wang, X., & Teng, Y. (2017). Mapping the knowledge domains of Building Information Modeling (BIM): A bibliometric approach. *Automation in Construction*, *84*(September),

195–206. https://doi.org/10.1016/j.autcon.2017.09.011

Li, X., Yi, W., Chi, H. L., Wang, X., & Chan, A. P. C. (2018). A critical review of virtual and augmented reality (VR/AR) applications in construction safety. In *Automation in Construction* (Vol. 86, pp. 150–

162). https://doi.org/10.1016/j.autcon.2017.11.003

Peurifoy, R. L., Schexnayder, C. J., Schmitt, R. L., & Shapira, A. (2018). *Construction Planning, Equipment, and Methods*.

Rosenfield, P., Fay, J., Gilchrist, R. K., Cui, C., Weigel, A. D., Robitaille, T., Otor, O. J., & Goodman, A. (2018). AAS WorldWide Telescope:

A Seamless, Cross-platform Data Visualization Engine for Astronomy

Research, Education, and Democratizing Data. *The Astrophysical*

Journal Supplement Series, *236*(1), 22. https://doi.org/10.3847/15384365/aab776

Tsai, M. H., Chen, K. L., & Chang, Y. L. (2019). Development of a projectbased online course for BIM learning. *Sustainability (Switzerland)*,

11(20), 1–18. https://doi.org/10.3390/su11205772

Vogler, J. S., Thompson, P., Davis, D. W., Mayfield, B. E., Finley, P. M., & Yasseri, D. (2018). The hard work of soft skills: augmenting the project-based learning experience with interdisciplinary teamwork. *Instructional Science*, *46*(3), 457–488. https://doi.org/10.1007/s11251017-9438-9

Wang, P., Wu, P., Wang, J., Chi, H. L., & Wang, X. (2018). A critical review of the use of virtual reality in construction engineering education and training. In *International Journal of Environmental Research and Public Health* (Vol. 15, Issue 6). https://doi.org/10.3390/ijerph15061204

Wilkins, B., & Barrett, J. (2000). Virtual construction site: A web-based teaching/learning environment in construction technology.

Automation in Construction, *10*(1), 169–179. https://doi.org/10.1016/S0926-5805(00)00075-3

Wong, K. D. A., Wong, K. W. F., & Nadeem, A. (2011). Building information modelling for tertiary construction education in Hong Kong. *Electronic Journal of Information Technology in Construction*, *16*, 467–476.

Wu, T. H., Wu, F., Liang, C. J., Li, Y. F., Tseng, C. M., & Kang, S. C. (2019). A virtual reality tool for training in global engineering collaboration. *Universal Access in the Information Society*, *18*(2), 243–

255. https://doi.org/10.1007/s10209-017-0594-0

Unika SOEGIJAPRANATA
Talenta pro patria et humanitate

Proceeding
eLearning Forum Asia 2021

Augmenting the Virtual Environment: Technology | Innovation | Humanity

Semarang, 30 November - 1 December 2021

PeLS Philippine eLearning Society | SYMPLICITY | UNITED BOARD | eLearning Forum Asia

Online Learning

Editor:
Dr. Heny Hartono, SS, M.Pd
Cecilia Titiek Murniati, PhD

Website:
https://www.elfasia.org/2021/

Soegijapranata Catholic University

BARRIERS AND LEVELS OF MOTIVATION IN ONLINE LEARNING OF STUDENT NURSES IN A PRIVATE UNIVERSITY

Limsiaco, Christel Dawn C.,Juele, Bruce Raymond L, Leong, Jade Alexandra G. Licera, Colleen Kate D. , Macuja, Kryst Ian O.,Magallon, Andrea Jean B., Magbanua, Jaehazle C., Delariarte, Rosana Grace B.

Abstract: The sudden shift to online learning, brought about by the COVID-19 pandemic, can be a big challenge to students who are used to being in a physical classroom. This study determined the barriers and level of motivation on online learning among student nurses in a private university in Iloilo City, Philippines.

This descriptive-correlational research was conducted among 283 students from all levels in the College of Nursing, chosen through stratified random sampling. Two researchermade instruments were used to gather data on barriers and motivations towards online learning. For descriptive analysis, frequency, percentages and means were used. Inferential analysis utilized Chi square test and Pearson's r, both set at .05 alpha. This research was approved by the University Ethics Review Committee.

Results showed that technological and psychological issues were considered as "barriers" while geographical and socioeconomic issues were "somewhat a barrier". Generally, student nurses appeared to be "highly" motivated towards online learning. They were highly motivated because for them, studying nursing is not waste of time, enrolling in this course is a privilege, they want to finish requirements before deadline, to participate during lectures, it is what their parents wanted, they want to show that they can perform tasks despite the circumstances and they want to achieve good grades to maintain scholarships. They were slightly motivated by reading activities. There was a negative and significant relationship between psychological barrier and the level of motivation in online learning among student nurses. This inverse relationship seemed to show that student nurses who are facing more psychological barriers are less motivated and those who experience less psychological barriers are more motivated towards online learning. No significant relationships existed between socioeconomic, technological, and geographical barriers and the levels of motivation in online learning among the student nurses.

Student nurses face barriers on online learning to certain degrees. Despite these barriers there are multiple intrinsic and extrinsic motivations, the reasons why student nurses are driven in online learning. This study showed that motivating students is not only about technological concerns. It also requires the maintaining communication and strong relationships as to manage the student nurses' motivation to learning and deal with the barriers related to online learning. Understanding barriers and motivations might help student nurses become more passionate and satisfied with their online learning activities.

Key Words: On-line learning, Barriers to Online learning, Motivations to Online Learning COVID-19 , Student Nurses

ELearning Forum Asia 2021

Augmenting the Virtual Environment:
Technology – Innovation – Humanity

Online Learning

INTRODUCTION

Background and Rationale of the Study

The World Health Organization announced the outbreak of a global pandemic on March 11, 2020 which was the COVID-19 as it has spread to more than 100 countries. Different problems arose especially on food security, education, public health, employment, and labor particularly the health and safety of the workers. Additionally, 3.3 billion of the global workforce that was nearly 50% of the world's population were at risk of losing their livelihoods. Moreover, the loss of human lives around the globe has been dramatic with 1,349, 506 deaths (WHO, 2020).

The escalation in the confirmed cases and deaths of COVID-19 created issues such anxiety, stress and depression both in health workforce and in the general public as a whole (Etxebarria, 2020). About 1.6 billion of the children and youth discontinued attending school in 161 countries because of this pandemic. Based on the March 2020 statistics, this was nearly 80% of the enrolled students globally (Saavedra, 2020). School closures across 188 countries caused them to find other possible ways to deliver continuous education using technologies like the TV, radio and internet. Most of European Universities as well discontinued classes in March 2020 (European University Association, 2020). The Philippines is also no exception to the impact of this pandemic. This global crisis forced educational institutions in the country to discontinue face-to-face learning and suddenly shifted to online learning in accordance with CHED Memorandum Order No. 4 Series of 2020.

With the aim of suppressing the spread of the virus, students were at risk of falling behind because closure of schools reached more than one billion. Students in poor households who did not have the access to the internet and availability of gadgets needed in online learning amplified the effects of existing learning discrepancies (UNICEF, 2020).

Furthermore, at least 463 million students in the world were still cut off from schooling mainly because of insufficient in remote learning strategies or lack of equipment necessary to learn at home (UNESCO, 2020). In Europe, the unexpected change to remote education varied by size and governance models a disciplinary difference. Lack of internet access was a result of unavailability of needed technology and online learning cost too much. Online learning changed face-to- face interaction, reducing social interaction. Thus, these caused the learners a feeling of isolation (Bolliger et. al. 2010; Shaw & Polovina, 1999). Conditions like this made the education more challenging since this may cause loss of motivation of the learners (Bolliger et al., 2010; Inoue, 2007). Moreover, many students suffered because of having a hard time focusing on the screen for long periods of time. With online learning, students were more likely to be easily sidetracked by social media and other websites (Gautam, 2020).

On the other hand, in medical education, online learning enhanced availability of information, and promoted easy regulation and updating of content, cost-efficient, improvement of the learning process and accountability, wherein students were motivated to learn. Additionally, technological limitations were not seen by students to be the most important barriers. This shows that students were able to somehow manage to cope with these challenges (Baticulon et. al, 2020).

It was more difficult to learn remotely how to develop an institutional strategy, especially for large comprehensive institutions and disciplines that involved laboratory assignments, practical skills, and external collaboration (European University Association, 2020). Some students, particularly during periods when mobility was limited, lacked the necessary technology, including hardware and limited access to a network, to access online materials (Basilaia & Kvavadze, 2020).

Socio-economic status was highly associated with accessibility and this was where digital divide started. Students from low socio-economic households were slow to develop their academic skills when compared to those coming from higher socioeconomic families (Morgan, Farkas, Hillemeier, & Maczuga, 2009). Moreover, level of laptop use of students was negatively associated with measures of student learning

and this caused comprehension of course materials and course performance to be disrupted (Fried, 2008). One of the most significant barriers to student learning online was a lack of social connection. Furthermore, social connection was substantially linked to online learning enjoyment, efficacy, and the likelihood of taking another online course. (Muilenburg & Berge, 2005). Students in urban areas had the easiest access to most of the broadband providers and this put them in advantage in online learning. On the other hand, some students in rural areas had limited access to the internet due to their geographical capabilities. Thus, the gap widened between those who were able to benefit from digital technology and those who cannot (Rothberg, Bailey, & Ballard, 2012).

Students should be motivated regardless of online or face-to-face classes. Moreover, with or without the presence of the barriers they should be able to cope with the lessons and activities that came along with online learning. Students should be able to overcome the barriers in order to keep them motivated in online learning.

Countries implemented remote education systems to ensure that learning is constant. (UNICEF, 2020). In Europe, all higher education institutions offered some form of enhanced digital learning, and more than half of them provided or planned to provide online degree programs. (EUA, 2020). In some countries, a transition to online education was undertaken as an Emergency Remoted Teaching (ERT) method to assist higher education institutions in responding to COVID-19. (Hodges et. al, 2020).

Furthermore, Kuwait University purchased premium learning systems such as Blackboard Ultra and Microsoft Office 365. They had been utilizing this for a number of years now, and many faculty members were using this along with their conventional teaching. Higher Education Information in the Philippines established proactive strategies for the ongoing delivery of education despite the country-wide closures of schools in order to respond to the demands of the learners. (Ozbok et al., 2013).

Despite the assistance and efforts of the government to overcome barriers, NGO's, philanthropists, problems on barriers and learning motivation still exist. These barriers and learner's motivation have an impact on students attending online learning. Furthermore, students are still having problems that hinder quality learning and affect student motivation. Lack of peer group interactions, overload of schoolwork, new type of learning experience, lack of focus and limited social life, connectivity problems hamper the learning process, and limited studies and literature related to different barriers and learner's motivation hamper the learning process.

Most of the studies focused on finding treatments for this pandemic such as formulating vaccines and limited studies were conducted with regards to motivation of students in online learning specifically among student nurses specifically, in a private university which were vital aspects to the outcome of learning. For this reason, the researchers conducted this study.

Objectives of the Study

General Objective:

This study was conducted to determine the barriers and levels of motivation in online learning of student nurses in a private university.

Specific Objectives: Specifically, this study sought to:

1. describe profile of student nurses in terms of monthly family income, device availability, and geographical location;

2. determine the online learning barriers of student nurses in online learning in terms of socioeconomic, technological, psychological, and geographical issues;

3. determine the levels of motivation in online learning of student nurses in a private university, and
4. determine the relationship between the online learning barriers in terms of socioeconomic, technological, psychological, and geographical issues and the levels of motivation in online learning of student nurses in a private university.

Theoretical and Conceptual Framework of the Study

This study was anchored on the Self-Determination Theory, a theory of motivation that aimed to explain individuals' goal-directed behavior (Deci & Ryan, 2012)

The theory proposes universal, innate psychological needs: (1) Competence is defined as one's belief in one's capacity to perform well in a certain activity, such as online coursework.; (2) Autonomy refers to the ability to make decisions on one's own. Individuals' perceived autonomy is strong when they believe they are taking online classes because they want to, rather than because they are being pressured by others (parents, coaches) or external reasons (expectations). (3) Meaningful interactions and a sense of shared experience describe psychological relatedness. As a result, activities that allow people to create and enjoy strong relationships inspire them. As a result, people are driven by activities that help them meet those three demands. Those are delightful activities that are driven by internal motivation.

Extrinsic or controlled motivation, on the other hand, refers to behaviors that result in precise results in terms of rewards or avoided punishments, but with a low level of perceived autonomy. There is a continuum of behavioral restrictions within extrinsic motivation that represents the degree to which the activity has been incorporated into the individual's sense of self. The following items are included in the continuum: (1) External regulation, in which external incentives such as praise, rewards, and avoidance of punishment control behavior; (2) Introjected regulation occurs when external factors are internalized and the individual acts to boost self-esteem (e.g., by demonstrating ability) or reduce guilt and prevent failure. (3) Identified regulation, in which the individual recognizes and values the conduct; and (4) Integrated regulation, in which the conduct is fully integrated into personal values and beliefs and appears to be the most autonomous type of extrinsic motivation.

In this study, it was assumed that barriers may influence level of motivation. Presence of barriers such as socioeconomic, technological, psychological, and geographical barriers might decrease the level of motivation. On the other hand, levels of motivation may not be influenced by the barriers because there were some learners who were success-driven and consider these barriers as only challenges and tried to overcome them. Supposing, socioeconomic barrier had a positive impact on the level of motivation due to the capacity in providing essential needs for online learning. On the contrary, it may also have a negative impact on the level of motivation due to the inability to provide necessary resources for online learning. In terms of technological barriers, student nurses with more available device/s for online learning were assumed to have higher motivation than student nurses with less available device/s for online learning due to sufficient medium for learning. However, student nurses with less available device/s may also have higher motivation due to their willingness to cope with the lessons and the desire to learn and pass.

For student nurses who stayed in urban areas, it was assumed that they might have higher motivation than those who stayed in rural areas due to easy access for need in online learning. In contrast to that, student nurses who stayed in rural areas may also have higher motivation due to the support of the parents in providing the needs for online learning.

The relationship of these barriers to the level of motivation is presented in Figure 1.

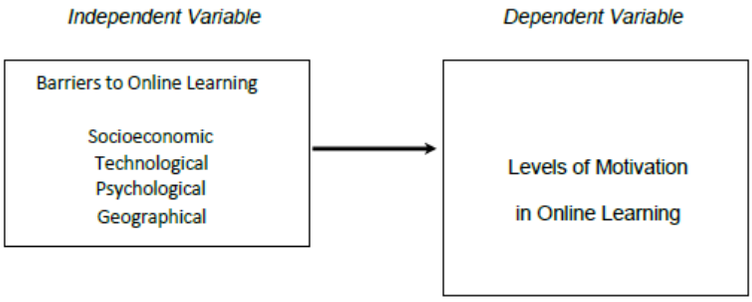


Figure 1. The relationship between barriers to online learning and levels of motivation in online learning.

Hypothesis of the Study

There was no relationship between the online learning barriers in terms of socioeconomic, technological, psychological, and geographical issues and the levels of motivation in online learning of student nurses in a private university.

Operational Definitions of Variables and other Key Terms

The following terms were defined conceptually and operationally for a better understanding:

Independent Variables:

Availability. Availability is whether someone or something can be accessed or used. (yourdictionary, 2020)

As used in the study, it referred to the gadgets or devices used during online learning. It was classified as none, one, and more than one devices *Barrier.* It is an obstacle that prevents movement or access (Oxford languages, 2020).

As used in the study, barriers were the things that prevented the student nurses from learning. The types of barriers in the study were socioeconomic, technological, psychological and geographical barriers. It was classified as not a barrier (mean: 1.001.59), somewhat a barrier (mean: 1.60-2.59), barrier (mean: 2.60-3.59), strong barrier (mean: 3.60-4.59) and very strong barrier (mean: 4.60-5). Not a barrier meant that the respondent did not consider it as an obstacle in online learning. Somewhat a barrier meant that the respondent considered it as somewhat an obstacle in online learning. Barrier meant that the respondent considered it as an obstacle in online learning. Strong barrier meant that the respondent considered it as a strong obstacle in online learning and very strong barrier meant that the respondent considered it as a very strong obstacle in online learning.

Geographical Barriers. It is based on or derived from the physical features of an area. (Oxford Languages, 2020)

As used in the study, it was defined as the residence of student nurses in attending online learning. It was classified as urban and rural areas. Student nurses classified under urban area were those living within the city. Student nurses classified under rural area were those living outside the city. As classified in the study, the barriers were described using the following scales; 1.00 – 1.59 is not a barrier, 1.60 – 2.59 is somewhat a barrier, 2.60 – 3.59, a barrier, 3.60 – 4.59 is strong barrier, and 4.60 – 5.00 is very strong barrier.

Psychological Barriers. It refers to a person's psychological state, which has a significant impact on their

capacity to communicate (Businessjargons, 2020).

As used in the study, psychological barrier was a term that triggered the mental and emotional status of the student nurse that may prevent from learning. As classified in the study, the barriers were described using the following scales; 1.00 – 1.59 is not a barrier, 1.60 – 2.59 is somewhat a barrier, 2.60 – 3.59, a barrier, 3.60 – 4.59 is strong barrier, and 4.60 – 5.00 is very strong barrier.

*Socioeconomic Barriers***.** The societal dynamics that prevent those born into lower social classes from advancing through the ranks of society throughout the course of their lives, or even generations (Willdanthropologist, 2012).

As used in the study, socioeconomic barriers were defined as the family monthly income of the student nurses. It was classified to low, average, and high. Low for student nurses had a family monthly income of below Php 20, 000. Moderate for student nurses had a family monthly income of Php 20, 000 – Php 50, 000 and high for student nurses had a family monthly income above Php 50, 000. As classified in the study, the barriers were described using the following scales; 1.00 – 1.59 is not a barrier, 1.60 – 2.59 is somewhat a barrier, 2.60 – 3.59, a barrier, 3.60 – 4.59 is strong barrier, and 4.60 - 5.00 is very strong barrier.

*Technological Barriers***.** It is described as limited access to useful, relevant, and appropriate hardware and software. (Connor & Donoghue, 2016)

As used in the study, technological barrier was a term that prevented learning through accessibility and availability of the device that the student nurse was using. It was classified as device/s availability. Device availability was classified to student nurses having none, one or more than one electronic device. As classified in the study, the barriers were described using the following scales; 1.00 – 1.59 is not a barrier, 1.60 – 2.59 is somewhat a barrier, 2.60 – 3.59, a barrier, 3.60 – 4.59 is strong barrier, and 4.60 – 5.00 is very strong barrier.

Dependent Variable:

Learner's Motivation. It can be intrinsic, in which case students are interested in the course content, or extrinsic, in which case students are interested in receiving a course grade or credit. (Global Dictionary, 2020)

As used in the study, learner's motivation was a term used to describe the learner's interest in online learning. It was classified as not motivated (mean: 1.0-1.59) which meant the student nurses had no desire or drive to engage in online class, slightly motivated (mean: 1.60-2.59) which meant that the student nurses had little desire or drive to engage in online class, motivated (mean: 2.60-3.59) which meant that the student nurses had the desire or drive to engage in online class, highly motivated (mean: 3.60-4.59) which meant that the student nurses had strong desire or drive to engage in online class, and very highly motivated (mean:4.60-5.0) which meant that the student nurses had very strong desire or drive to engage on online class. *Online learning.* It is a course that is delivered via the internet. They are frequently managed using a learning management system, which allows students to keep track of their course syllabus and academic achievement while also connecting with their classmates and instructor (Topchat dictionary, 2020).

As used in the study, online learning was a term used as a medium of learning. It was the independent variable of the study and the basis for barriers and learner's motivation.

Other terms:

*Family monthly income***.** It is the total gross income of all household members who are 15 or older (Kagan & Catalano, 2017).

As used in the study, it referred to the total monthly income of the whole family of the student nurses who were living together. It was classified as low, average or high income.

Rural. It is the characteristic of the countryside rather than the town. (Oxford Languages, 2020)

As used in the study, it referred to the student nurses living outside Iloilo City.

Urban. It is the characteristic of, or constituting a city. (Merriam Webster, 2020)

As used in the study, it referred to the student nurses living within Iloilo City.

Significance of the Study

This study held significance for the field of nursing education and specifically, for nursing research. The result of this study will benefit the following:

*The students***.** The outcome of this study will help them gain knowledge about the barriers and their motivation for learning in online learning and its impact to them.

They can also share their experience about these.

The teachers. The outcome of this study may potentially help teachers provide an environment that will enhance student learning. The teachers can become flexible and compassionate to the students.

*The college, school administrators and CHED***.** The outcome of this research will serve as a basis to the administrators to develop guidelines and policies that can potentially help solve educational issues such as barriers to online learning and provide insights of new ways to facilitate learning to students.

*The parents***.** The outcome of this study will guide them to provide an environment that can enhance learning and motivation to their children.

The future researchers. This research may be used as a springboard for the discovery of new studies.

Scope and Limitation of the Study

This study focused on the barriers and learner's motivation of student nurses. The subjects of the study were the 283 student nurses coming from the all levels of the College of Nursing a private university, who were officially enrolled for School Year 2020-2021.

The descriptive-correlational research focused on the barriers to online learning as independent variable and levels of motivation as dependent variable.

Data for this investigation were gathered through a researcher-made rating scale. The instrument was accompanied by a brief information sheet to obtain data on the researchers' demographic characteristics. The instrument underwent face and content validation and reliability testing using the Cronbach Alpha.

Data gathering was done online. To describe the data gathered, the frequency, mean and percentages were used. Items were also ranked from the highest to the lowest to facilitate analysis. For inferential analysis, the Chi Square test was used. The Statistical Package for the Social Sciences (SPSS) software,

Version17, was used to perform all statistical calculations.

Review of Related Literature

COVID-19 and Its Influence on Education

Coronavirus, a huge group of viruses which respiratory illness can occur in people and animals, there were at the minimum of two confirmed viruses that serious Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) coronaviruses, for example, have caused severe disease. COVID19 is a latest coronavirus strain that had precedingly been never recognized in people even though it is common with key features of cough and fever as respiratory symptoms. Almost fifty percent of the globe's three billion three hundred million worldwide employees were on the verge of suffering with their occupation. For the majority, no wages mean hunger, decreasing intake of nutritious food or less food (WHO, 2020). As of 9:39 a.m. CET on December 22, 2020, there had been 76,023,488 confirmed cases of COVID-19 worldwide, with 1,694,128 deaths. (World Health Organization, 2020). In Asia, The COVID-19 pandemic has caused a lot of inconveniences in people's lives momentarily. In response to the pandemic surge in the region, governments restrict social gatherings and work to track and isolate as many cases as possible. The Philippines is now at a very high level of COVID-19.

The Coronavirus pandemic has brought about problems in face-to-face education, food access, public health, job of the people and labor sector; especially those working in the health sector. (WHO, 2020). As a consequence of more than 1 billion school establishments temporarily closing due to health protocols to hold the escalation of COVID-19, the students are at risk of falling behind. Countries have been implementing different educational programs to accommodate the new normal and continue education. Unfortunately, several students all over the world, particularly those in lower-income households, experience challenges with online learning. Thus, expanding result of the occurring teaching inequalities in the educational system. The lack of access to needed technology for remote learning and due to a scarcity of funds to finish their studies, numerous students may be forced to take a gap year or never return to school, ruining years of educational progress. (UNICEF,2020).

In March 2020, the majority of European institutions opted to close campuses and to end face-to-face study. According to the European University Association's (EUA) survey on "Digitally enhanced learning and teaching," About 95% of universities offered distance learning whereas 4% offered study at some facilities. Courses and learning methods that needed laboratory tasks, hands-on experience, and such faced more difficulties in shifting to remote education. Nevertheless, according to an EUA 2013 survey, higher education institutions provided options to continue education amidst the pandemic, such as blended learning, digital learning, remote learning, online degree programs, and among others. The new learning system enabled students, professors, and other school faculties to follow the safety protocols, including minimizing people gathering on campus. Furthermore, to improve the success of online learning, institutions were attempting to balance asynchronous and synchronous learning.

Countries and some academic institutions that shifted to online learning may have had previous experience utilizing online learning as a result of having ample foundation for the transition, along with the experience that may be due to other unforeseeable circumstances such as natural disasters. Other countries implemented "Emergency Remote Training" (ERT) to support higher education institutions in providing instructions and requirements for online learning to efficiently facilitate the continuation of education (Hodges et al, 2020). A study showed that as a consequence of this pandemic, many schools worldwide were able to make provisions and issue new laws to facilitate the population in the transition to various learning methods in the new normal (Basilaia and Kvavadze, 2020). However, a full transition to online learning required proper planning and thorough preparation which included training the faculty with the technology and platform that will be used and communicating effectively. On the other hand, students may not have enough online resources or conventional technology to utilize. This was evident in

the fact that many institutions had not fully prepared for largescale online learning.

In the Philippines, months after the negative reactions from the mass when it came to using online learning during the lockdown, CHED Chairperson, Prospero De Vera, certified flexible learning can accommodate more students and schools. He further explained that compared to the accustomed online learning that needed constant access to the internet, not everyone had access to flexible learning. It can cater to each learners' situation when it came to step, location, activity, and outcomes of education with satisfactory design and delivery (Parrocha, 2020). Pre-recorded lectures and timeindependent exams were examples of asynchronous, delayed-time activities, which were used in conjunction with synchronous, time-based and real-time lectures result assessments. (Oztok et al., 2013). De La Salle University (DLSU) Remote flexible learning was used, as well as alternative choices for meeting course requirements. (DLSU, 2020). Adamson University decided to suspend online learning however, asynchronous learning that pupils were able to learn at their own footstep should be continued. (Villarin, 2020). University of Santo Tomas (UST) also pursued flexible learning, assessment and grading of student work (University of Santo Thomas, 2020).

As for the Central Visayas Campus of the Philippine Science High School, online learning was carried out too to lessen physical contact between students and teachers at the school. With the new normal, online learning has become a norm and significant part of the academe. Thus, students were still individuals to continue their education from the convenience of their own home

The University of the Philippines Visayas' (UPV), to slow the spread of COVID19, more people were turning to online learning because it was intimidating to the students and teachers (Burgos, 2020). The chairperson of UPV University Student Council (USC), Adrian Camposagrado, stated that a common hindrance among students was the lack of stable internet access for online learning. Complaints were made by the students that they had poor internet connections at the dormitories at the UPV main campus in Miag-ao, Iloilo province. Furthermore, others raised concerns regarding not having internet access at all or weak signals in their hometowns.

Barriers to Online Learning

*Socio-economic Barrier***.** Accessibility is strongly linked to socioeconomic level, and here is where the digital divide begins. Students from low-income homes learned academic abilities at a slower rate than students from higher-income homes. Poor households lacked access to academic learning materials that might help students study in a favorable atmosphere. (Bradley, Corwyn, McAdoo, & García Coll, 2001). Among the students that were conducted, the study concluded that students with economic problems were more likely to have difficulty obtaining online academic resources (Añover, Ng, & Pellicia, n.d.). Due to inadequacy of study places at their homes and academic internet resources, during the lockdown, students from disadvantaged socioeconomic backgrounds spent some time learning at home. (Andrew, Cattan, Costa Dias et al., 2020). According to studies, there was a link between socioeconomic status and resource accessibility; the lower a family's socioeconomic position, the more likely their access to education and resources were severely limited.

The shift to online learning made it difficult for teachers and students to figure out which method to utilize for adjustments, and the lack of interaction with students had a significant impact on education during the pandemic (Tanhan, 2020). This process had been more demanding for people, particularly low-income families; some researchers discovered that those with poor socio-economic status were not treated properly even during normal times (Emir Öksüz & Brubaker, 2020; Tanhan & Francisco, 2019).

Regardless of the disadvantages of online learning, there were certain advantages, such as providing teachers with a more effective means of teaching classes to learners. Teachers can become more efficient educators by incorporating Internet resources into their lesson plans and applying them to their classrooms.

Another benefit of online learning was that it allowed students to take classes from wherever they wanted. In addition, rather than being limited by physical limits, schools were be able to reach out to a larger network of learners. Online lectures can also be recorded, preserved, and shared for future reference, which can assist students by allowing them to access learning material at their leisure. The next benefit of online learning was the lower cost. Because online learning eliminated the cost points of student transit, student food, and, most crucially, student rents, it was significantly more inexpensive and convenient than physical learning. Additionally, all academic materials and resources were accessible over the internet, resulting in a paperless learning environment that was both cost effective and ecologically sustainable. Students were less likely to miss lessons because online learning can be done from home or anywhere else (Gautam, 2020).

According to a study by Anover et al. (2014), There was a correlation between a family's income and their difficulty in material retrieval for online classes. As per the data, fifty-four percent (54%) of the 356 students surveyed who had taken online courses came from low socioeconomic status families, who were more likely to have difficulty accessing online course material and resources and required more assistance in accessing this educational material in online or hybrid courses, indicating a larger problem.

The Philippines' medical education shifted as a result of COVID-19's economic impact. Students' responses indicated the widespread extent of the problem: loss of jobs for working students that helped them pay for their school; family funds had to be divided between essential needs and internet subscriptions; family-owned businesses had to be liquidated; and scholarships had to be cancelled. Students from low socioeconomic status felt less capable of participating in online learning, according to the results. Online learning, on the other hand, had been proved to be comparable, if not superior, than traditional ways of curriculum delivery. It was cost-effective in low- and middle-income nations and had the probability to resolve faculty shortages by extending the reach and efficiency of medical educators (Baticulon et al. 2020).

Technological Barrier. The use of laptops was adversely associated with assessing the student's learning and it caused disruption in understanding of course performance and material (Nortvig et. al, 2018). The computers are used by the students for communications such as instant messaging with their friends, receiving and sending emails, online shopping, paying of bills, downloading and uploading copyrighted materials, surfing the internet, playing computer and online games, and downloading objectionable materials. Cellular phones have been utilized by the students to cheat in examinations. Cellular phones have many features such as digital cameras that have been used by the students to capture a photo of the answer keys.

In online learning, technology had a big role, from providing drill and practice to providing tools and inventive or creative environments for the learners to solve a problem (Januszewski & Molenda, 2007). Scholars were fascinated in determining the best tools or equipment that may be employed for successful online learning (Dunbar, 2004), and believed that the success of students was due to their technical and nonacademic abilities. Grundmann (2010) also stated that the lack of experimental and practical learning experience inside the structure of courses online might be a significant drawback, especially for scientific students who demanded hands-on experience. However, the effectiveness of science-related educational outcomes was shown to be unaffected by the mode of instruction, whether virtual or traditional.

Regardless of the clear advantage in online learning, there were still issues to deal with in the future. Other barriers included multimedia technologies that caused instructions to be delayed or conveyed incorrectly, as well as bad internet access. Virtual learning failures can be caused by a variety of factors, including administration, teaching methods, and students. For online learners, a lack of support and services such as tutoring, computer literacy, and technical help may be an issue. Online learning was not just dependent on the technology, but also on the instructors' preparation. If teachers did not correctly plan their online lectures, it may result in bad outcomes. (Srichanyachon 2014).

Baticulon, et al. (2020), conducted a study entitled "Barriers to Online Learning in the Time of COVID-19: A National Survey of Medical Students in the Philippines." The objective of this research was to explore obstacles to virtual learning from the viewpoint of med students in a developing country. On the 11th to the 24th of May this 2020, the researchers sent an e-survey in the Philippines intended to the med students. Using a combination of multiple-choice, Likert scale, and open-ended queries, demographics, university information, availability and access to electronic resources, learning styles, living environment, self-assessment of capacity for and factors contributing to virtual learning, and suggested measures were acquired. Descriptive statistics were used to analyze the information gathered. To compare the results among student groups, nonparametric tests were utilized. A smartphone was used by 93% of the 3670 med students, while the 83% were using a desktop or a laptop. A postpaid internet access was used by 79%, while 19% used prepaid mobile internet to access internet resources. Under the aforementioned conditions, only 1505 students (41%) indicated they were physically and mentally capable of participating in their virtual classes. Barriers were identified in five categories: technology, individual, household, institutional, and community.

Another study was conducted by Fabito, et al. (2020) researched the obstacles experienced by computer students at a private institution in the Philippines during the Enhanced Community Quarantine (ECQ) imposed on the entire Luzon region as direct response to the COVID-19 outbreak. To understand more about students' experiences with online learning, a survey was conducted using MS Forms Pro. The study was opened from the 16th up until the 18th of March, 2020, and received over 300 responses. According to descriptive statistics, students' top three issues and challenges were (1) the difficulty of trying to clarify topics or discussions with professors, (2) the lack of a study or working area for engagement in various online activities, and (3) the lack of a good Internet access for participating in online activities. It may be inferred that neither students nor instructors were fully ready to compete in the entire online setting. Furthermore, some staff members may have been unable to adapt to the needs of pupils.

Becker, et al. (2013), conducted a report entitled "A learner perspective on barriers to e-learning." The data obtained for this study, which was done in Australia, was gathered using a quantitative technique and a self-administered questionnaire. The utilization of technology was determined to be prominent among the study's conclusions about e-learning hurdles. This aspect encompasses both physical and psychological difficulties that were seen to be impediments to using e-learning.

Psychological Barrier. Caballero, et al. (2015), conducted a study entitled "I am Offline: Measuring Barriers to Open Online Learning in the Philippines" According to the study, social connections were viewed as "something of a barrier." Individuals of the online lrh6yearning platform seemed to be feeling isolated as a result of this finding. The apparent "barrier" of "lack of interaction/communication among co-learners" indicated isolation. In terms of social interaction, "online learning appears impersonal" was seen as "somewhat of a barrier" by those with the lowest scores. As a result, users appeared to be relatively isolated. According to this report, the preeminent obstacle to students learning online was a "lack of social engagement." The report went on to say that social contact was substantially linked to online learning satisfaction, efficacy, and the possibility of taking another course online. As a result, boosting social involvement in online learning led to a more effective and enjoyable learning environment.

Song et al (2004, in Caballero, et al. 2015) also found out that research participants who were unsatisfied with online learning as opposed to traditional classroom learning expressed worry about a loss of fellowship within the online context.

Furthermore, students can also learn a lot when they were accompanied by their peers. However, online learning reduced physical contact between students, peers, and professors, leading to a sense of isolation among students (Gautam, 2020).

The Muilenburg and Berge study (2005) explored that Online education satisfaction, efficiency, and the willingness to take another online course were all highly connected to social contact. The most

important hurdle, according to participants, was a lack of social contact. Enhancing virtual social contact would provide students with a more pleasant and enjoyable educational experience that they would desire to reexperience. A large part of why individuals opt to continue learning online was to overcome the lack of interpersonal connection in online courses.

Geographical Barrier. Learners in many rural areas face natural and environmental limits, resulting in fewer educational resources than urban children. (Cheng, Liu, Ko and Lin 2007). Students in rural areas face a variety of issues when it comes to broadband access and adoption. Availability, expense, and lack of technical skills and expertise are among the problems. The lack of Internet connectivity at home is the main difference between rural and urban residents. There was a direct link between broadband connectivity and education, job opportunities, and economic viability for individuals and the community at large (Rothberg, Bailey, & Ballard, 2012).

Teachers and students in rural areas had significant obstacles because they lacked essential knowledge, education, and skills for community development, selfimprovement, and the fight against COVID19. (Dube, 2020). Rural schools undoubtedly had tough difficulties for them; predicaments that most needed systemic commitment and innovative ideas. Rural areas were confronted with significant barriers to high learner accomplishment, and they were operating under less than ideal policy conditions. (Dieltiens, 2008, p. 40).

The unexpected outbreak of a fatal disease termed Covid-19 caused by the CoronaVirus (SARS-CoV-2) paused the entire world when the World Health Organization (WHO) declared it a pandemic. The education system across the globe was also threatened by this situation and forced academic institutions to turn to online learning to continue education. Despite the potential benefits of online learning, multiple obstacles to the successful use of the modern learning tool in the COVID-19 pandemic in socio-economic, technical, psychological, and geographical areas threatened many private higher education institutions.

Such challenges and issues related to modern technology vary from downloading errors, installation problems, login issues, audio and video issues, and so on. Students often find online learning to be dull and uninvolving. The degree to which obstacles to learning is viewed is inversely linked to the level of ease and trust in the adaptation of online learning technologies and the motivation for online learning. The challenge in this difficult times is not whether online teaching-learning methodologies will give quality education, but rather how academic institutions will be able to accept online learning as the new normal on such a large scale.

Motivation to Learn in Online Environment

Learning and motivation are inextricably linked. Learning is also reinforced by an awareness of students' needs and desires, which, when correctly accessed, will motivate pupils to take action.

External motivation, as well as recognition and praise for successful effort, were two main crucial points. Some examples of it that were observed among college students included continued eligibility for scholarships, loans, or job promotions. Traditionally, as a form of validation, grades were given to students to symbolize the level of achieved course objectives. However, apart from grades, there were a lot more to be considered to find and apply the appropriate kind of motivation for student learning; it varied and depended on the norm in terms of the interests per group of learners. An extrinsically motivated student manifested behaviors that were driven by external rewards, for example- looks for affirmation and other external signals of value (Sansone & Smith, 2000).

Intrinsic motivation, another key factor in Learners' motivation, generally consists of learning or to gain something for yourself about a specific topic or experience. It is usually observed in students with intrinsic motivation to manifest behaviors and activities both academically and psychosocial that result in

self-satisfaction. A few examples were intrinsically motivated students tended to process reading material more deeply, get better marks, and exhibit greater perseverance than students with extrinsic motivation. (Vansteenkiste, Simons, Lens, Soenens, Matos, & Lacante 2004).

Because of the learning environment they were in, online students had been found to be more intrinsically motivated. To engage themselves, they must typically rely on intrinsic drive and the accompanying attributes of interest and self-regulation (Martens, Gulikers, and Bastiaens 2004).

The vast majority of the observed feedback regarding the learners' perspective in technology depicted that it was intrinsically motivating because it provided a variety of attributes that were known to enhance intrinsic drives, such as challenge, interest, novelty, and fantasy. (Lepper & Malone, 1987).

As technology became conventional, the novelty aspect wore off, thus faded intrinsic motivation. Moreover, technical challenges caused frustration and might lead to a reduction in intrinsic motivation. (Keller & Suzuki, 2004).

According to the findings, it was probable that driven learners were actively taking part in class, perform better, engage in challenging tasks, and in the face of adversity, demonstrate resilience. (Schunk, Pintrich, & Meece, 2008).

Contemporary perspectives associated motivation with cognitive and affective processes, such as thoughts, opinions, feelings, and goals, emphasizing the learnerlearning environment correlation (Brophy, 2010). Performance goal motivation was closely linked to exterior elements like grades and how a student was perceived by other students and the teacher. The urge to surpass classmates and give the impression of being competent was the performance approach objective, and the covet to avoid appearing incompetent was known as performance avoidance goal (Elliot et al, 2005). When undergraduate college students demonstrated accomplishment goals, they showed improved interest in content and retention (Harackiewicz et al, 1998).

The desire to study to satisfy one's curiosity and increase one's competence was termed achievement goal (Brophy, 2010, Lanthrop 2011). Students who focused on achieving their goals were intrinsically driven. According to a study, students stayed on a task longer if they were determined to achieve their goals than those not committed to achieving their goals (Rawsthorne and Elliot, 1999). According to one study, there was improved interest in information and retention when introductory level undergraduate college students displayed accomplishment goals. Furthermore, students who had both an accomplishment and a performance goal orientation not only remembered more knowledge, but also received higher grades than their counterparts. (Harackiewicz et al, 1998, Lanthrop, 2011).

Influence of Barriers on Motivation

Learning motivation is a key factor in determining the effectiveness of learning and achieving high learning outcomes. This affected the academic performance of economically disadvantaged pupils through triggering psychological issues. There was higher risk of dropping out on students who belonged to the lower socioeconomic status

(Jang et al., 2016; Aidinopoulou and Sampson, 2017; Sergis et al., 2018; Petersen et al. (2009). Therefore, school teachers had an urgent need to look for ways to boost these kids' learning motivation, as well as encourage learning interest and a motivation for continual learning, by looking at psychological aspects that influenced their academic success.

Selvi (2010), conducted a study entitled "Motivating factors in online classes". The goal of this study was to figure out what characteristics boosted student enthusiasm in an online course that was taught by the researchers. Thoughts on things that boosted their motivation were asked of the students as well

as what they may do to enhance their motivation. The learning-teaching process, teacher qualifications, participants' attention, online learning environment/technical infrastructure, and time management all had an effect on motivation in online courses as shown on the results of the study. It was also said that their motivation should be enhanced by the online learning environment/technical infrastructure, the learning-teaching process, and measures and evaluation.

The goal of technological-based activities should be to pique people's interest and improve their willingness to engage. It was important to address motivation at work in online learning systems, assuming that the original desire of an average student for learning was sufficient, as determined by such a qualitative subjective assessment. (Yang & Wu, 2012).

Multiple implications on student motivation was seen in the technology environment which led to greater results. For instance, the total motivation to work motivation ratio in electronic systems may be seen. When students worked in online learning, technical faults and failures had been identified as the most irritating issues. (Woodrow 2017).

Synthesis of Related Literature

The COVID-19 outbreak had a huge effect on our educational system, not just in the Philippines but also in other countries around the world. Owing to the installation of safety precautions to contain the spread of the virus, schools were forced to suspend semesters and others chose to temporarily close due to the global catastrophe. There had been a significant change from face-to-face classes and toward online learning. Although online learning had advantages and benefits, the academe had faced issues as a result of schools' unexpected shift in learning mode in compliance with CHED Memorandum Order No. 4 Series of 2020. This new academic set-up produced confusion over student and faculty adjustment as educational institutions adjusted to the new normal, as these institutions lacked preparation, particularly through faculty training, simulations, and practices prior to implementation (Basilaia and Kvavadze, 2020). Several studies revealed perceived socioeconomic, technological, psychological, and geographic barriers. Online learning issues included, but were not limited to, a shortage of gadgets, the quality of internet access, misunderstandings in transmitting teaching methods, financial considerations, social isolation, and others [Srichanyachon (2014), Gautam, (2020), Dube, (2020)]. These barriers affected the student's motivation in online learning as suggested by some studies and researchers (Jang et al., 2016;

Aidinopoulou and Sampson, 2017; Sergis et al., 2018 . Petersen et al. (2009).As a result of a study, motivated learners were more participative, active, had higher academic achievement, and were more resilient when faced with a difficulty in this new way of learning (Schunk, Pintrich, & Meece, 2008). Students reported that technical issues and other obstacles with online learning had a detrimental impact on their motivation to learn (Keller & Suzuki, 2004). In comparison to traditional classrooms, the new learning technique produced a rise in stress, worry, and despair as a result of the pandemic (Etxebarria, 2020). Studies related social contact and collaborative learning approaches to be a vital aspect of learning in order for students to be more engaged and motivated to learn (Chen-Yuan, 2000). Although there were many obstacles and concerns with online learning, academia cannot ignore its importance, especially in this time of global crisis and the disadvantage of momentarily disrupting daily routine and structure. As a result of these studies, recommendations were made to make online courses more dynamic, interesting, and engaging in order to be more effective and increase learner motivation (Yang & Wu, 2012).

Methodology

This chapter discusses the research design, study population and sampling procedure, research instrumentation, validity and reliabilty, data collection, data processing and statistical analysis.

Research Design

This study used a quantitative, descriptive-correlational design. In this study, the researchers described the barriers and learner's motivation in online learning among the target population as well as the relationship of the variables; hence, the descriptivecorrelational research design was considered appropriate.

A descriptive research design describes the nature of the issue under investigation, answers questions, and satisfies curiosity about certain occurrences after a study of existing trends, practices, and situations that apply to the phenomenon under investigation. Concerned about current circumstances, their meaning, and relevance (Tan, 2020). For the purpose of this study, descriptive research was used to obtain and describe the barriers and learner's motivation of student nurses in online learning in a private university. It involves the collection of quantitative information that describes demographic characteristics, online learning barriers, and learner's motivation.

Correlational research is a form of study that includes observing two variables in order to find a statistically significant link between them (Formplus Blog, 2020). In this study, correlational research was used to determine the relationship between variables. The data generated was summarized in some way to give readers an idea of the typical values of data, and how they varied.

Study Population and Sampling Procedures

The target population was the 971 student nurses who were enrolled for online learning from level 1-4. The respondents of the study were the 283 student nurses from level 1 to 4 of the College of Nursing of a private university; selected through the stratified random sampling technique and by simple random sampling.

n= N/(1+Ne2)

N= 971

$n = 971/1+ (971) (0.05)^2$

n= 283. 2968636 or 283

Level 1 $a.) P = \frac{283}{971} x\ 330 = 96$

Level 2 $b.) P = \frac{283}{971} x\ 317 = 92$

Level 3 $c.) P = \frac{283}{971} x\ 271 = 79$

Level 4 $d.) P = \frac{283}{971} x\ 53=16$

Table 1. Distribution of Respondents According to Year Level

Year Level	Number of Students by Year Level	f	%
Level 1	330	96	33.9
Level 2	317	92	32.5
Level 3	271	79	27.9
Level 4	53	16	5.7
Total	971	283	100

The 283 participants consisted of 96 (33.9%) first year students, 92 (32.5%) second year students, 79 (27.9%) third year students, and 16 (5.7%) fourth year students.

A stratified sampling technique was used to gather participants from the different subgroups in level 1, 2, 3 and 4. In order to get the number of students per year level, the sample size was divided to the total population and was multiplied to the stratum.

List of students from level 1-4 was obtained from the office of the college of nursing with permission from the Dean. The names of the students were listed in a piece of paper, rolled and placed in a bowl and picked up by simple random sampling and the list of respondents was made. The respondents were contacted via email, messenger or

Facebook accounts and consent forms were sent along with the questionnaire. If below 18, an assent form was sent to the parents or guardian. Questionnaires were sent to the respondents and collected by the researchers online.

The following students were included as participants: (1) those who agreed voluntarily participated in the study by sending back the signed informed consent; (2) those who were able to read, understand, and give the needed data in the questionnaire, and(3) those who were officially enrolled in any year level of the BSN Program for the S.Y. 2020-2021 in the College of Nursing of a private university.

Students who belonged to other departments; those who were not officially enrolled in the College of Nursing; those who participated in the pilot testing of the research instruments, and those who failed to refuse to participate were not included in the study.

Research Instruments

A researcher-made data gathering instruments were employed to gather data needed for the study.

Part One was provided to gather such information as respondent's name (optional), year level, family monthly, device availability and geographical location.

Part Two was a checklist consisted of 20 statements about the different barriers on online learning.

The participants were asked to respond to each item by indicating a checked mark on the space provided. There were five choices to which respective numerical weights were assigned

Response	Description	Weight
Not a barrier	Not an obstacle	1
Somewhat a barrier	An obstacle to a slight degree	2
Barrier	A real obstacle in online learning	3
Strong Barrier	An obstacle to a big degree	4
Very Strong Barrier	An obstacle to a very powerful degree	5

The barriers were described using the following scales of means

Scale of Means	*Description*
1.00 – 1.59	Not a barrier
1.60 – 2.59	Somewhat a barrier
2.60 – 3.59	A barrier
3.60 – 4.59	Strong barrier
4.60 – 5.00	Very strong barrier

Part Three was a checklist consists of 10 statements that measured the learner's motivation of student nurses

The participants were asked to respond to each item by indicating a checked mark on the space provided.

There were five choices to which respective numerical weights were assigned

Response	Description	Weight
Strongly disagree	The respondent firmly opposed the statement	1
Disagree	The respondent opposed the statement	2
Neutral	The respondent was undecided	3
Agree	The respondent supported the statement.	4
Strongly agree	The respondent firmly supported the statement regarding online class.	5

The levels of motivation were described using the following scales of means:

Scale of Means	*Description*
1.00 – 1.59	Not motivated
1.60 – 2.59	Slightly motivated
2.60 – 3.59	Motivated
3.60 – 4.59	Highly motivated
4.60 – 5.00	Very highly motivated

In the absence of a standardized instrument that measured the perceived barriers and level of motivation on on-line learning, this instrument was formulated based on related literature on the challenges of online learning, barriers, effectiveness of online teaching and virtual learning, attitude, and perception and motivations towards knowledge and skills acquisition via e-learning.

Validity and Reliability of Instruments

The study instruments were presented to a panel of jurors for face and content validation composed of a grammarian from the College of Education, guidance counselor of the College of Nursing, and IT experts from the College of Computer The instruments were tested to see if they could elicit the proper

information in accordance with the study topic's expectations.

The instruments were then pilot-tested to 30 randomly selected student nurses of a private university. The results of the pilot testing were analyzed using Cronbach alpha.

Statistical Package for Social Sciences (SPSS) Version 17 was used to calculate the Cronbach Alpha coefficient.

The obtained Cronbach alpha for barriers was .928 and .818 for motivation. The overall Chronbach was .886. No item in the instrument had Cronbach alpha below .70.

According to Statistics Solutions (2021), a Cronbach alpha of.70 and above is considered good,.80 and above is considered better, and.90 and above is considered best. Following this rule, the items included in the data gathering instruments were reliable for their respective administration and the purpose for which they were constructed.

Data Collection

This study was conducted online. The respondents were contacted via messenger or Facebook accounts. Consent forms were sent and the respondents were instructed to send back the form with their signatures. After which, the researchers sent the link for the questionnaire to the respondents. In addition, an assent form was sent to the parents or guardian for respondents below 18. The raw data that were reflected in the google forms were collected and tallied. The scores were converted to frequency and percentages and placed on tables which were furthermore analyzed.

Ethical Consideration

Letter of consent was sent to the President of the University and Dean of the College of Nursing to ask permission in carrying out the research. Then a letter of consent was sent to the respondents to request for their participation in the study. Moreover, parent's consent was obtained for those students who were below 18 years old.

The researchers attested that they had no relationship with the respondents and further stated that they had no conflict of interest. Moreover, the researchers guaranteed to maintain the anonymity and confidentiality of the respondents.

Data Processing and Statistical Analysis of the Data

The data were gathered and encoded using the Statistical Package for Social Sciences (SPSS). The statistics were analyzed and interpreted according to the objectives. Descriptive statistics including measure of frequency, central tendency (mean), and percentages were used to summarize the data that were gathered from the sample.

Frequency. It was used to determine the distribution of number of responses to the questions in the questionnaire.

Mean. It is the sum of the observed values in the distribution divided by the number of observations. In this study, it was used to measure the average of barriers and the level of motivation among student nurses in online learning in a private university.

Percentage. A hundredth part of any quantity is represented by a relative value. One percent (symbolized1%) denotes a hundredth portion; consequently, 100 percent denotes the complete amount, whereas 200 percent denotes double the amount.

Chi square**.** It was used to determine the relationship between the barriers (nominal) and levels of motivation (ordinal) variables.

Pearson's product moment or Pearson's r was used to determine if there is a significant relationship between data in the interval and ratio scales, including the relationship between the degree of barriers and levels of motivation.

Results and Discussion

Descriptive Data Analysis

The profile of respondents, barriers and levels of motivation in online learning of student nurses in a private university were determined in this study. The frequency, percentages, mean and standard deviation were utilized.

Table 2 shows the personal information of student nurses. In terms of family income, 124 (43.8%) belonged to middle-income families, 120 (42.4%) belonged to higher income families while 39 (13.8%) belonged to lower income families. Moreover, about 246 (86.9%) of the respondents had more than one device while 37 (13.1%) had only one device. Furthermore, there were 151 (53.4%) of the respondents lived in rural areas while 132 (46.6%) respondents lived in the urban areas.

Table 2 shows the profile of the respondents.

Table 2: *Distribution of the Respondents*

Category	f	%
A. Total Population	283	100
B. Monthly family income		
Lower	39	13.8
Middle	124	43.8
Higher	120	42.4
C. Device availability		
One	37	13.1
More than 1	246	86.9
D. Geographical Location		
Urban	132	46.6
Rural	151	53.4

Barriers to Online Learning

Results in the socioeconomic barrier showed that "online learning and tuition fees" had the highest frequency and percentage (f = 39, percentage = 13.78%) in the "very strong barrier" Likert scale among the four (4) other socioeconomic barriers. Overall, out of 283 respondents, 129.4 (45.72%) identified socioeconomic barriers as "Not a Barrier".

Data can be seen in table 3.

Table 3 *Socioeconomic Barriers*

	f	%
Online learning tuition and fees		
Not a barrier	52	18.37%
Somewhat a barrier	90	31.80%
Barrier	64	22.61%
Strong Barrier	38	13.43%
Very strong barrier	39	13.78%
Total	283	100%
Parent's monthly income		
Not a barrier	97	34.28%
Somewhat a barrier	116	40.99%
Barrier	36	12.72%
Strong Barrier	20	7.07%
Very strong barrier	14	4.95%
Total	283	100%
Parent's source/s of income		
Not a barrier	123	43.46%
Somewhat a barrier	97	34.28%
Barrier	36	12.72%
Strong Barrier	14	4.95%
Very strong barrier	13	4.59%
Total	283	100%
Parents' employment status		
Not a barrier	146	51.59%
Somewhat a barrier	88	31.10%
Barrier	32	11.31%
Strong Barrier	8	2.83%
Very strong barrier	9	3.18%
Total	283	100 %
Parent's educational attainment		
Not a barrier	229	80.92%
Somewhat a barrier	36	12.72%
Barrier	12	4.24%
Strong Barrier	4	1.41%
Very strong barrier	2	0.71%
Total	283	100%
Overall Socioeconomic Barriers		
Not a Barrier	167	59.01%
Somewhat a Barrier	63	22.26%
Barrier	36	12.72%
Strong Barrier	12	4.24%
Very Strong Barrier	5	1.77%
Total	**283**	**100%**
Mean= 1.95	SD= 0.85	Description: Somewhat a Barrier

Socioeconomic issues were considered "somewhat a barrier" with a mean=1.95 and a SD=0.85. According to the study of Añover et al. (2014) students with economic disadvantages were highly exposed to experiencing difficulties on accessing academic materials online. In this study, socioeconomic concerns may not be a very strong barrier since only about 14% of the participants had lower monthly family income and about 86% had more than one device.

Results in the technological barrier showed that "strength of internet connectivity" had the highest frequency (92) and percentage (32.51%) in the "very strong barrier" in the Likert scale in technological barriers. 79.2 (27.99%) from the overall respondents associated technological barriers as "Somewhat a Barrier" to online learning.

Data can be viewed in table 4.

Table 4 *Technological Barriers*

	f	%
Strength of internet connectivity		
Not a barrier	21	7.42%
Somewhat a barrier	57	20.14%
Barrier	55	19.43%
Strong Barrier	58	20.49%
Very strong barrier	92	32.51%
Total	283	100%
Internet access		
Not a barrier	32	11.31%
Somewhat a barrier	86	30.39%
Barrier	64	22.61%
Strong Barrier	52	18.37%
Very strong barrier	49	17.31%
Total	283	100%
Cost of online learning technology		
Not a barrier	50	17.67%
Somewhat a barrier	72	25.44%
Barrier	77	27.21%
Strong Barrier	44	15.55%
Very strong barrier	40	14.13%
Total	283	100%
Availability of needed technology		
Not a barrier	92	32.51%
Somewhat a barrier	76	26.86%
Barrier	53	18.73%
Strong Barrier	35	12.37%
Very strong barrier	27	9.54%
Total	283	100%
Methods used for online learning		
Not a barrier	40	14.13%
Somewhat a barrier	105	37.10 %
Barrier	72	25.44%

Strong Barrier	41	14.50%
Very strong barrier	25	8.83%
Total	283	100%
Overall Technological Barriers		
Not a Barrier	56	19.79%
Somewhat a Barrier	74	26.15%
Barrier	75	26.50%
Strong Barrier	44	15.55%
Very Strong Barrier	34	12.01%
Total	283	100%
Mean= 2.88	SD= 1.05	Description: Barrier

Technological issues were considered a "barrier" with a mean=2.88 and a SD=1.05. Results of this study supported the findings of Baticulon, et al. (2020) which also included technological issues as one of the categories of barriers or difficulties encountered by medical students on online learning. This indicated that the provision of fast and reliable internet connectivity is a greater concern among the respondents.

Results in the psychological barrier showed that "time management" had the highest frequency (53) and percentage (18.73%) among the "very strong barrier" in the Likert scale in psychological barriers. Overall, from the 283 respondents, about 98.8 (34.9%) indicated that psychological barriers were "Somewhat a Barrier" to online learning.

Data is shown in table 5.

Table 5 *Psychological Barriers*

	f	%
Time management		
Not a barrier	14	4.95%
Somewhat a barrier	103	36.40%
Barrier	68	24.03%
Strong Barrier	45	15.90%
Very strong barrier	53	18.73%
Total	283	100%
Stress management strategies		
Not a barrier	28	9.89%
Somewhat a barrier	94	33.33%.
Barrier	78	27.56%
Strong Barrier	40	14.13%
Very strong barrier	43	15.19%
Total	283	100%
Attitude towards online learning		
Not a barrier	28	9.89%
Somewhat a barrier	120	42.40%

Barrier	72	25.44%
Strong Barrier	31	10.95%
Very strong barrier	32	11.31%
Total	283	100%
Influence of self-perception in online le arning		
Not a barrier	32	11.31%
Somewhat a barrier	122	43.11%
Barrier	62	21.91%
Strong Barrier	38	13.43%
Very strong barrier	29	10.25%
Total	283	100%
Moral support from family		
Not a barrier	169	59.72%
Somewhat a barrier	55	19.43%
Barrier	26	9.19%
Strong Barrier	17	6.01%
Very strong barrier	16	5.65%
Total	283	100%
Overall Psychological Barriers		
Not a Barrier	76	26.86%
Somewhat a Barrier	93	32.86%
Barrier	59	20.85%
Strong Barrier	29	10.25%
Very Strong Barrier	26	9.18%
Total	283	100%
Mean= 2.63	SD= 0.97	Description: Barrier

Psychological issues were considered a "barrier" with a mean=2.63 and a SD=0.97. The result which showed that psychological issues such as moral support of the family, stress coping mechanisms, time management, reduced social interaction were considered as barriers to online learning. This was pointed out in the study of Caballero, et al. (2015) the single most important barrier to students learning online was lack of social interaction.

Results in the geographical barrier showed that "environmental disturbance in online learning (background noises)" had the highest frequency (42) and percentage (14.84%) among the "very strong barrier" in the Likert scale in geographical barriers. Overall, out of 283 respondents, about 96.4 (34.07%) identified geographical barriers as "Not a Barrier" to online learning.

Data is presented in table 6.

Table 6 *Geographical Barriers*

	f	%
Environmental disturbance in online learning (background noises)		
Not a barrier	38	13.43%
Somewhat a barrier	69	24.38%
Barrier	67	23..67%
Strong Barrier	67	23.67%
Very strong barrier	42	14.84%
Total	283	100%
Distance of the house to the cell site		
Not a barrier	91	32.16%
Somewhat a barrier	58	20.49%
Barrier	57	20.14%
Strong Barrier	42	14.84%
Very strong barrier	35	12.37%
Total	283	100%
Time difference for students who live o utside the country		
Not a barrier	140	49.47%
Somewhat a barrier	47	16.61%
Barrier	38	13.43%
Strong Barrier	30	10.60%
Very strong barrier	28	9.89%
Total	283	100%
Location of the house		
Not a barrier	98	34.63%
Somewhat a barrier	86	30.39%
Barrier	47	16.61%
Strong Barrier	30	10.60%
Very strong barrier	22	7.77%
Total	283	100%
Number of inhabitants inside the house		
Not a barrier	115	40.64%
Somewhat a barrier	85	30.04%
Barrier	38	13.43%
Strong Barrier	23	8.13%
Very strong barrier	22	7.77%
Total	283	100%
Overall Geographical Barriers		
Not a Barrier	96	33.92%
Somewhat a Barrier	95	33.57%
Barrier	47	16.61%
Strong Barrier	30	10.60%
Very Strong Barrier	15	5.30%
Total	283	100%
Mean= 2.42	SD= 0.96	Description: Somewhat a Barrier

Geographical issues were considered a "barrier" with a mean=2.42 and a SD=0.96. As shown in the data, the nursing students still found geographical issues as "somewhat a barrier." Students in rural areas faced a variety of issues when it came to broadband access and adoption. Availability, expense, and lack of technical skills and expertise were among the problems. The lack of Internet connectivity at home was the main difference between rural and urban residents according to Rothberg, Bailey, & Ballard (2012).

Table 7 Overall Barriers

	f	%
Not a Barrier	99	34.98%
Somewhat a Barrier	82	28.98%
Barrier	54	19.08%
Strong Barrier	28	9.89%
Very Strong Barrier	20	7.07%
Total	283	100%

This table revealed that 29.33% considered the overall barriers as "not a barrier" and 11.31% considered overall barriers as a "very strong barrier" to online learning.

Results of this study showed that the participants considered technological issues and psychological issues as "barriers" to online learning. On the other hand, geographical issues and socioeconomic issues were considered 'somewhat a barrier" to learning.

The narrow dispersion of the means, as shown by standard deviations ranging from 0.85 to 1.05, indicated that the nursing students tended to be homogenous in terms of their barriers to online learning.

Level of Motivation towards Online Learning Among the Nursing Students

Results of the study showed that when taken as an entire group (M = 3.62, SD = .48), the nursing students were "highly" motivated towards on-line learning. A closer look at the data revealed that students were "very highly motivated" because "this course was not a waste of time" (M=4.26, SD=.90, rank 1). They were "highly motivated due to the following: "enrolling in this course as privileges (M = 4.16, SD = .98, rank 2); finishing requirements before deadline (M = 4.12, SD = .90, rank 3); participating during lectures (M = 3.96, SD = 1.0, rank 4); being enrolled in course because it was what their parents wanted (M = 3.81, SD = 1.26, rank 5), the ability to perform tasks despite the circumstances.(M = 3.79, SD = .94, rank 6); a strong drive to achieve good grades and/or maintain eligibility for scholarships and financial assistance (M = 3.64, SD = .92, rank 7); Student nurses were "moderately motivated" in "participating in discussions (M = 3.34, SD = .94, rank 8); and retaining focus and interest during lectures (M = 2.75, SD = .99, rank 9). They were "slightly motivated "in reading activities because they had to (M = 2.40, SD = .85, rank 10) ." The data are summarized in Table 8.

Table 8 *Level of Motivation towards Online Learning among Nursing Students*

Aspects	SD	Mean	Description	Rank
I think this course is not a waste of time.	.90	4.26	Highly Motivated	1
I consider enrolling to this course a privilege.	.98	4.16	Highly Motivated	2

I am dedicated to finishing requirements before the deadline.	.90	4.12	Highly Motivated	3
I like participating during lectures.	1.0	3.96	Highly Motivated	4
I enrolled in this course because it is what my parents wanted.	1.26	3.81	Highly Motivated	5
I have the ability to perform my tasks despite the circumstances.	.94	3.79	Highly Motivated	6
I have a strong drive to achieve good grades and/or maintain eligibility for scholarships and financial assistance.	.92	3.64	Highly Motivated	7
I am eager to participate during discussions.	.94	3.34	Motivated	8
I am able to retain my focus and interest during lectures.	.99	2.75	Motivated	9
I take on the reading activities because I have to.	.85	2.40	Slightly Motivated	10
Over-all Mean	.48	3.62	Highly Motivated	

Ranking first among the "high motivators" was the course being not a waste of time implied that student put a high value on the course. This supported the finding in this study that being in the course is a privilege which is a high motivator among the nursing students.

Second was the students enrolling to this course as a privilege. This may be due to the fact that they had gone through a very rigid admission process to the College of Nursing. Having been admitted to the College of Nursing was an opportunity that should not be wasted, thus, the high motivation. Other high motivators, like finishing requirements on time, participating in lectures, enrolling in the course because it was what their parents wanted, ability to perform task despite circumstances, and a strong desire to obtain good grades, implied that nursing students were intrinsically motivated. This supported the findings of the study conducted by Martens, Gulikers, and Bastiaens (2004), because of the learning environment they are in, online students have been found to be more intrinsically motivated. They are typically required to rely on intrinsic motivation and the associated characteristics of curiosity and self-regulation to engage themselves.

Result showed that 52.29% of the respondents were highly motivated, 34.8% were motivated, 10.95% were very highly motivated, 2.47% were slightly motivated and none (0%) was not motivated when taken as whole.

Table 9 *Levels of Motivation Among Student Nurses When Taken As A Whole*

Level of Motivation (Taken as a Whole)	f	%
Very Highly Motivated	31	10.95%
Highly Motivated	148	52.29%
Motivated	97	34.28 %
Slightly Motivated	7	2.47%
Not Motivated	0	0
Total	**283**	**100%**
Mean	**56.6**	**20%**

Inferential Data Analysis

This section revealed the correlational data and their respective analyses and interpretations. The significance of the barriers and levels of motivation in online learning of student nurses in a private university was determined using Chi square to determine the relationship between the barriers (nominal) and levels of motivation (ordinal) variables and Pearson's R to determine the significant relationship between data in the interval and ratio scales, including the relationship between the degree of barriers and levels of motivation.

Relationship between Barriers and Levels of Motivation on Online Learning among Student Nurses

Socioeconomic Barriers and Levels of Motivation

As shown in table 10, a little more than half of the student nurses who considered socioeconomic issues "not a barrier" (55.69%) were highly motivated. A little less half (44.44%) of them who said that socioeconomic issues were "somewhat a barrier" were highly motivated. Half of those who considered socioeconomic issues "as a barrier" were highly motivated. Likewise, half of the student nurses who considered socioeconomic issues "as strong barriers" were also highly motivated. While more than half (60%) of those who considered socioeconomic issues as very strong barriers were highly motivated. In the overall socioeconomic issues, a little more than half (52.30%) were highly motivated. The data revealed that there was no significant relationship between socioeconomic barriers and motivation (p = .410, not significant) as supported by the coefficient r = .049 which indicated that there was a negligible relationship. It opposed the study of Bradley *et. al.* (2001) which stated that students from low-income homes learn academic abilities at a slower rate than students from higher-income homes.

Table 10 Relationship Between Socioeconomic Barriers and Levels of Motivation

Socioeconomic Barriers	Levels of Motivation									
	Slightly Motivated		Motivated		Highly Motivated		Very Highly Motivated		Total	
	f	%	f	%	f	%	f	%	f	%
Not a Barrier	5	2.99%	54	32.34%	93	55.69%	15	8.98%	167	100%
Somewhat a Barrier	2	3.17%	24	38.10%	28	44.44%	9	14.29%	63	100%
Barrier	0	0%	14	38.89%	18	50%	4	11.11%	36	100%
Strong Barrier	0	0%	4	33.33%	6	50%	2	16.67%	12	100%
Very Strong Barriers	0	0%	1	20%	3	60%	1	20%	5	100%
Total	**7**	**2.47%**	**97**	**34.28%**	**12**	**52.30%**	**31**	**10.95%**	**283**	**100%**
r=.049 (negligible relationship)				p= .410 (not significa nt)						

Technological Barriers and Levels of Motivation

A little more than half of the student nurses who considered technological issues "not a barrier" (53.57%) were highly motivated. More than half (59.46%) of them who said that technological issues

were "somewhat a barrier" were highly motivated. A little less than half (49.33%) of those who considered technological issues "as a barrier" were highly motivated. A little less than half (47.73%) of the student nurses who considered technological issues as strong barriers were highly motivated. Similarly, a little less than half of those who considered technological issues "as very strong barriers" were highly motivated. In general, a little more than half (52.30%) were highly motivated in the overall technological issues with a coefficient r = -.050. There was no significant relationship between technological barriers and motivation (p=.406, not significant), as supported by the coefficient r = -.050 which indicated that there was a negligible relationship. It contradicted the study of Srichanyachon (2014), for online learners, a lack of support and services such as tutoring, computer literacy, and technical help may be an issue.

Table 11 *Relationship Between Technological Barriers and Levels of Motivation*

Technological Barriers	Levels of Motivation									
	Slightly Motivated		Motivated		Highly Motivated		Very Highly Motivated		Total	
	f	%	f	%	f	%	f	%	f	%
Not a Barrier	2	3.57%	16	28.57%	30	53.57%	8	14.29%	56	100.0%
Somewhat a Barrier	2	2.70%	22	29.73%	44	59.46%	6	8.11%	74	100.0%
Barrier	0	0%	30	40%	37	49.33%	8	10.67%	75	100.0%
Strong Barrier	1	2.27%	18	40.91%	21	47.73%	4	9.09%	44	100.0%
Very Strong Barriers	2	5.88%	11	32.35%	16	47.06%	5	14.71%	34	100.0%
Total	7	2.47%	97	34.28%	148	52.30%	31	10.95%	283	100.0%
r=-.050 (negligible relationship)				p= .406 (not significant)						

Psychological Barriers and Levels of Motivation

Majority of the student nurses who considered psychological issues "not a barrier" (65.79%) were highly motivated. A little more than half (51.61%) of them who said that psychological issues were "somewhat a barrier" were highly motivated. Half (50.85%) of those who considered psychological issues "as a barrier" were highly motivated. Moreover, less than half (41.38%) of the student nurses who considered psychological issues "as strong barriers" were motivated. While less half (42.31%) those who considered psychological issues "as very strong barriers" were motivated and highly motivated. In psychological issues, a little more than half (52.30%) were highly motivated when taken as a whole with a coefficient r=-.241. A significant relationship was obtained between psychological barrier and motivation (p= .000, significant) as supported by the coefficient r=-.241 which indicated that there was a negative low correlation. The results seemed to show that the lower the psychological barrier, the higher the level of motivation in online learning of student nurses in a private university. This means that the more the nursing students lack the moral support from their significant others, the lower the motivation of the students toward online learning. This supported the study of Caballero, et al. (2015), which stated that the leading obstacle to students learning online is a "lack of social engagement." The report goes on to say that social contact is linked to online learning satisfaction, efficacy, and the possibility of taking another course online.

Table 12 *Relationship Between Psychological Barriers and Levels of Motivation*

Psychological Barriers	Levels of Motivation									
	Slightly Motivated		Motivated		Highly Motivated		Very Highly Motivated		Total	
	f	%	f	%	f	%	f	%	f	%
Not a Barrier	1	1.32%	11	14.47%	50	65.79 %	14	18.42 %	76	100 %
Somewhat a Barrier	1	1.08%	38	40.86%	48	51.61 %	6	6.45%	93	100 %
Barrier	0	0%	25	42.37%	30	50.85 %	4	6.78%	59	100 %
Strong Barrier	3	10.34 %	12	41.38%	9	31.03	5	17.24 %	29	100 %
Very Strong Barrier	2	7.69%	11	42.31%	11	42.31 %	2	7.69%	26	100 %
Total	7	2.47%	97	34.28%	148	52.30 %	31	10.95 %	283	100 %
r=-.241 (Negative low correlation)				p= .000 significa nt						

Geographical Barriers and Levels of Motivation

A little more than half (55.21%) of the student nurses who considered geographical issues "not a barrier" were highly motivated. A little less half (45.26%) of them who said that geographical issues were "somewhat a barrier" were highly motivated. A little more than half (55.32%) of those who considered geographical issues "as a barrier" were highly motivated. In addition, more than half (60%) of the student nurses who considered geographical issues "as strong barriers" were highly motivated. While a little more than half (53.33%) of those who considered geographical issues "as very strong barriers" were highly motivated. Overall, in geographical issues, a little more than half (52.30%) were highly motivated when taken as a whole with a coefficient r = .054. There was no significant relationship between geographical barriers and motivation (p=.368, not significant) as supported by the coefficient r = -.054 which indicated that there was a negligible relationship. This counters the study conducted by Cheng *et. al.* (2007) stating that learners in many rural areas face natural and environmental limits, resulting in fewer educational resources than urban children.

Table 13 *Relationship Between Geographical Barriers and Levels of Motivation*

Geographical Barriers	Levels of Motivation									
	Slightly Motivated		Motivated		Highly Motivated		Very Highly Motivated		Total	
	f	%	f	%	f	%	f	%	f	%
Not a Barrier	4	4.17%	26	27.08%	53	55.21%	13	13.54%	96	100.0%
Somewhat a Barrier	1	1.05%	41	43.15%	43	45.26%	10	10.53%	95	100.0%
Barrier	0	0%	19	40.43%	26	55.32%	2	4.26%	47	100.0%
Strong Barrier	1	3.33%	8	26.67%	18	60%	3	10%	30	100.0%

Very Strong Barriers	1	6.67%	3	20%	8	53.33%	3	20%	15	100.0%
Total	7	2.47%	97	34.28%	148	52.30%	31	10.95%	283	100.0%
r=-.054 (Negligible relationship)				p= .368 (not significant)						

Overall Barriers and Levels of Motivation

A little more than half (57.58%) of the student nurses who considered the overall issues as "not a barrier" were highly motivated. One half of them who said that overall issues were "somewhat a barrier" were highly motivated. A little more than half (55.32%) of those who considered geographical issues "as a barrier" were highly motivated. In addition, a little more than half (51.86%) of the student nurses who considered overall issues "as strong barriers" were highly motivated. Moreover, little less than half (46.43%) of those who considered geographical issues "as very strong barriers" were also highly motivated. Overall, in geographical issues, a little more than half (52.30%) were highly motivated when taken as a whole. There was no significant relationship between barriers and motivation (p=.103, not significant) when taken as a whole as supported by coefficient r=-.097 which indicated that there was a negligible relationship.

Table 14 *Relationship Between Overall Barriers and Levels of Motivation*

Overall Barriers	Levels of Motivation									
	Slightly Motivated		Motivated		Highly Motivated		Very Highly Motivated		Total	
	f	%	f	%	f	%	f	%	f	%
Not a Barrier	3	34.48%	27	27.27%	57	57.58%	12	12.12%	99	100.0%
Somewhat a Barrier	2	2.44%	31	37.80%	41	50%	8	9.76%	82	100.0%
Barrier Strong	0	0%	22	40.74%	28	51.86%	4	7.41%	54	100.0%
Barrier Very	1	3.57%	10	35.71%	13	46.43%	4	14.29%	28	100.0%
Strong Barriers	1	5%	7	35%	9	45%	3	15%	20	100.0%
Total	7	2.47%	97	34.28%	148	52.30%	31	10.95%	283	100.0%
r=-.097 (negligible relationship)				p= .103 (not significant)						

In this regard, the null hypothesis which stated that there were no significant relationships between the online learning barriers in terms of socioeconomic, technological, and geographical and the levels of motivation in online learning of student nurses in a private university was accepted. While the null hypothesis which stated that there was no significant relationship between psychological barrier and the levels of motivation in online learning of student nurses in a private university was rejected.

Summary, Conclusions, Implications and Recommendations

Summary of the Problem, Method and Findings

The aim of the study was to determine the barriers and levels of motivation in online learning of student nurses in a private university.

This study sought to describe the online learning barriers of student nurses in terms of socioeconomic, technological, psychological and geographical. Additionally, to describe the level of motivation in online learning of student nurses in a private university and determine the relationship between the online learning in terms of socioeconomic, technological, psychological and geographical and the levels of motivation in online learning among student nurses.

This study utilized a quantitative, descriptive-correlational design. The respondents of the study were the Levels 1, 2, 3 and 4 student nurses of a private university.

Online learning barriers and the levels of motivation of student nurses were gathered using a structured questionnaire. The respondents were selected using a stratified random sampling. Informed consent along with the questionnaires were sent to the respondents and collected by the researchers online.

This study utilized Chi square to determine the relationship between the barriers (nominal) and levels of motivation (ordinal) variables. Pearson's product moment or Pearson's r was used to determine if there was a significant relationship between data in the interval and ratio scales, including the relationship between the degree of barriers and levels of motivation.

The findings of the present investigation included the following:

Student nurses faced issues that posed as barriers on online learning to certain degrees. Technological and psychological issues were considered as "barriers" while geographical and socioeconomic issues were "somewhat a barrier".

Generally, student nurses appeared to be "highly" motivated towards online learning despite these barriers they faced.

Student nurses were highly motivated by the fact that nursing was not a waste of time.

Other highly motivators included "enrolling in this course as privileges finishing requirements before deadline participating during lectures, being enrolled in course because it was what their parents wanted (pleasing the parents), the ability to perform tasks despite the circumstances and a strong drive to achieve good grades and/or maintain eligibility for scholarships and financial assistance

They were slightly motivated by reading activities because they had to.

There was a significant relationship between psychological barrier and the levels of motivation in online learning of student nurses in a private university. No significant relationships existed between socioeconomic, technological, and geographical and the levels of motivation in online learning of student nurses in a private university.

Conclusion

Results showed that technical divide is real. Students experience technological, psychological, geographical and socio-economic barriers during on-learning.

Student nurses are both intrinsically and extrinsically motivated. Extrinsic motivations include looking at the enrolling in the course is not a waste of time, a privilege, and parents' choice. The dedication to finish requirements on time and to get good grades and maintain scholarships characterize

the motivation to avoid punishments and yield rewards. These personal beliefs and values appear to have been integrated into the student nurses' sense of self.

On the other hand, intrinsic motivations can be gleaned from the pleasure they get in participating in lectures and performing tasks. The nursing students generally find online classes as an engaging activity for the pleasure of accomplishing or creating something.

Students feel less motivated when they are made to read because they have to. It appears that students need more stimulating online experiences that would challenge their creativity, innovativeness and critical thinking.

There is no significant relationship between technological barriers, geographical barriers and motivation. In other words, despite the demands brought about by on-line learning, student nurses are able to very much willing to learn.

The significant relationship between psychological barrier and motivation shows that psychological issues can affect motivation. This may further mean that the student nurses' level of motivation can be influenced by the psychological issues they are facing with. Student nurses may actually experience anxieties during the pandemic and thus may decrease their drive and motivation for online learning.

Implication for Theory and Practice

Results of the study led to certain implications for theory and practice in relation to barriers and motivations toward online learning.

*For Theory***.** As revealed in the present study, the student nurses in these study were highly motivated due to intrinsic and extrinsic reasons. These findings lend support to the Self-Determination Theory (SDT) of Deci and Ryan. According to this notion, a person is motivated by a desire to progress and learn. People's behavior is complicated, and they are rarely motivated by a single source of incentive. When pursuing a goal, people frequently draw on a variety of sources of motivation. Competence, autonomy or freedom of choice, and psychological relatedness are proposed as universal, innate psychological demands in the theory. A sense of shared experience and meaningful relationships describe psychological relatedness. As a result, activities that allow people to create and enjoy strong relationships inspire them. As a result, people are driven by activities that help them meet those three demands. Those are delightful activities that are driven by internal motivation.

The student nurses in this study seemed to show that there were multiple motivations in their goal to become professional nurses, the reason why they are driven in online learning. They are intrinsically motivated by the gratification they get from online learning activities, as well as extrinsically motivated by the need to receive compliment and incentives (such as good grades), like participating in lectures and performing tasks.

These motivations are also aligned to the three innate psychological needs of the Self-determination Theory – Competence and Autonomy (e.g. the student nurses' ability to perform tasks); and Psychological relatedness (participating in lectures).

While SDT states that Autonomy or freedom of choice is high when individuals are not pressured by other people, like parents and teachers. This study found out that student nurses are slightly motivated when they are made to read because they have to or as required. However, this study found out that student nurses whose parents chose the course are highly motivated. Student nurses may have channeled their motivation towards the psychological relatedness aspect, where in they want to enjoy good relationships with their parents by doing good in their studies.

Student nurses' ability to perform in a variety of areas of their lives, including online learning, is influenced by their self-determination. Understanding these reasons might help student nurses become more motivated, passionate, motivated, and satisfied with their online learning activities.

For practice. This study also showed that student nurses experienced several barriers to online learning on varying degrees: technological and psychological issues as barriers, geographical and socioeconomic issues as somewhat a barrier.

Results of this study lend support to the studies conducted by Baticulon et al. (2020) and Caballero, et al. (2015) on identifying barriers to online learning.

According to Januszewski & Molenda (2007), in online learning, technology had a big role, from providing drill and practice to providing tools and inventive or creative environments for the learners to solve a problem. According to Becker et. al. (2013) the use of technology on e-learning was found to be significant. Therefore, technological needs such as appropriate software, and a computer with good internet access were essential. In a study conducted by Gautam, (2020), it was stated that online learning reduces physical connections between students, peers, and teachers, resulting in a sense of isolation among students. In addition, Muilenburg and Berge (2005) explored that social interaction was strongly linked to online learning satisfaction, online learning efficiency, and the desire to take another online course. As viewed by students overall, the lack of social contact was the most serious barrier. Hence, in online learning, building strong rapport with each other and the professor through video calls and collaborative activities encouraged students to take part in online learning.

Geographical and socioeconomic were "somewhat barriers" to online learning. Students in rural areas faced a variety of issues when it came to broadband access and adoption. The lack of Internet connectivity at home was the main difference between rural and urban residents. There was a direct link between broadband connectivity and education for individuals and the community at large (Rothberg, Bailey, & Ballard, 2012). Students with low socio-economic status households developed slower academic skill than those students with high socio-economic status households. Poor families had less access to academic learning materials which can promote a positive learning environment (Bradley, Corwyn, McAdoo, & García Coll, 2001). In relation to the geographical and socioeconomic barriers, the lack of resources needed to provide a sense of comfort and personal security in online learning may influence the level of motivation of students.

In comparison to a classroom-based course, online learning necessitates a higher level of motivation and self-discipline. In a classroom, one or more professors and classmates can hold a student accountable for their course work. On the other hand, online courses demand us to define our own objectives, keep track of our progress, and adhere to deadlines. Because it is impossible to study well in solitude, online courses provide discussion boards, email, and one-on-one assistance.

This pandemic has shown that motivating students is not only about technological concerns such as hardware and connectivity, software platforms. It also requires the maintaining communication and strong relationships also as to manage the student nurses' motivation to learning and deal with the barriers related to the pandemic. As such, more understanding of the learning factors that influence success in online learning can be facilitated.

Recommendations

Based on the aforementioned findings and conclusions, the following recommendations were presented:

1. The student nurses should be commended for staying highly motivated towards their studies, even in times like the pandemic. The sudden shift in the teachinglearning modalities is

unprecedented, and for them to be able to concentrate and stay motivated are good signs that student nurses are committed, flexible and focused on their learning.

2. For the University administration, policies and guidelines have to be made clear and widely disseminated. No student shall be left behind. The administration might consider conducting a needed assessment survey among students to identify technological, psychological, geographical and socio-economic issues pertaining to online learning.

   It is also recommended that open communication routes between administrators, instructors, and students be established (for example, through online town hall meetings and convocations). There must be clear guidelines and expectations, as well as ongoing monitoring and provisions for improving or worsening the pandemic situation.

   The University may consider offering more tuition discounts and offer scholarships to mitigate the economic impact of the pandemic.

3. The College of Nursing may consider providing clear guidelines such as providing make up classes, extension of deadlines or giving reasonable extra time to complete tasks, and supplementary pre-recorded lecture videos for students to make up for the delay of requirements and those who were unable to attend synchronous classes because of technological or connection problems. Alternative learning activities may be available if you are unable to attend synchronous sessions. Assessment activities and other coursework can be kept proportionate to and associated with desired learning outcomes. For the teachers, it is suggested that every session be made interactive and stimulating by providing students with learner-centered teaching that could help them be productive and exhibit their critical thinking skills and creativity.

4. The University Guidance Committee may think about providing students with proactive psychosocial support. Mental wellness programs focusing on positive coping mechanisms and motivational strategies may be conducted virtually.

   It is recommended to continue conducting online events that would engage the student body like quiz bees, virtual battle of the bands, the search for the next Centralian star, and the praise jam during the Christ Emphasis

5. Student learning is a partnership between the school and the home. Parents are encouraged to provide a stimulating home environment that would include open communication lines, provide emotional support, encouragement, and recognition to boost the confidence and motivation of their children to participate and perform well in online learning. Additionally, the parents to establish a home environment that is safe and comfortable for the students to focus and participate in class without being fear of being criticized. If budget warrants, it would be helpful for parents to invest in technological support, as flexible learning is here to stay.

6. Further research is recommended to address barriers and motivation to learning. Future researchers may include other variables and universities in other regions for wider coverage. In this way, a more complete picture of barriers and levels of motivation will be properly ascertained.

7. Copies of this research will be disseminated to the University, if only to make University officials see the actual picture in terms of the perceived barriers and levels of motivations among their student nurses.

REFERENCES

Añover, V., Ng, K., & Pellicia, M., (n.d.) A Study of the effects of students' socioeconomic status on the online learning environment. Retrieved on December 7, 2020 from https://www.researchgate.net/publication/344096899 _A_Study_on_the_Impact_o fSocioeconomic_Status_on_Emergency_Electronic_Learning_during_the_Coron avirus_Lockdown

Balinbin A. (2020), Expensive, slow internet pulls down Philippine digital ranking.

Retrieved on December 7, 2020 from https://www.bworldonline.com/expensive slow-internet-pulls-down-philippine-digital-ranking/

Basilaia G, Kvavadze D. Transition to online education in schools during a SARS_CoV_2 coronavirus (COVID_19) pandemic in Georgia. Pedagogical Res. Retrieved on December 18, 2020 from https://www.researchgate.net/profile/Giorgi_Basilaia/publication/340560537_Tran sition_to_Online_Education_in_Schools_during_a_SARS-CoV-2_Coronavirus_COVID-19_Pandemic_in_Georgia/links/5e90a5d04585150839cf4397/Transition-toOnline-Education-in-Schools-during-a-SARS-CoV-2-Coronavirus-COVID-19-Pandemic-in-Georgia.pdf

Baticulon, R., Alberto, N.R., Baron, M.B., Mabulay, R.E., Rizada, L.G., Sy, J.J., Tiu, C.J., Clarion, C., Reyes. J.C. (2020). Barriers to online learning in the time of COVID-19: A national survey of medical students in the Philippines. Retrieved on September 15, 2020 from https://www.researchgate.net/publication/343051730_Barriers_to_online_learning_in_the_time_of_COVID19_A_national_survey_of_medical_students_in_the_Philippines

Becker, K., Newton, C and Sawang, S. (2013). "A learner perspective on barriers to e- learning. Retrieved on May 28, 2021 from https://files.eric.ed.gov/fulltext/EJ1013664.pdf

Bradley, R. H., Corwyn, R. F., McAdoo, H. P., & García Coll, C. (2001). The home environments of children in the United States Part I: Variations by age, ethnicity, and poverty status. Child Development, 72, 1844-1867. Accessed on 15 July. doi:10.1111/1467-8624.t01-1-0038. Retrieved on December 7, 2020 from https://www.researchgate.net/publication/344096899_A_Study_on_the_Impact_of_Socioeconomic_Status_on_Emergency_Electronic_Learning_during_the_Coronavirus_Lockdown

Brophy, J. (2010). Motivating students to learn (3rd ed.). New York, NY: Routledge.
Retrieved on December 7, 2020 from https://files.eric.ed.gov/fulltext/EJ1079770.pdf

Burgos, N. (2020). Avoiding COVID-19 through online classes faces stumbling block: Slow internet. Retrieved on December 18, 2020 https://newsinfo.inquirer.net/1243208/avoiding-covid-19-through-online-classesfaces-stumbling-block-slow-internet/amp

Caballero, RD., et al (2015). "I am offline": Measuring barriers to open online learning in the Philippines. Retrieved on December 21, 2020 from (PDF) "I am offline": measuring barriers to open online learning in the Philippines. (researchgate.net)

CHED Memorandum Order No.05 Series 2020. Guidelines on the suspension of operations of degree program of private higher education institutions. Retrieved on November 17, 2020 from https://ched.gov.ph/wp-content/uploads/CMO-No.-5-s.-2020-Guidelines-on-the-Suspension-of-Operations-of-Degree-Programs-of-Private-Higher-Education-Institutions.pdf

CHED Memorandum Order No.9 Series 2020. Guidelines on the allocation of financial assistance for state universities and colleges for the development of smart campuses provided in section 10 (i) of RA 11494. Retrieved on November 17, 2020 from https://ched.gov.ph/wp-content/uploads/CMO-No.-9-s.-2020-Guidelines-on-the-Allocation-of-Financial-assistance-for-State-Universities-and-Colleges-for-the-Development-of-Smart-Campuses-provided-in-Section-10-i-of-

RA-11494.pdf

Cheng, S.S., Liu, E., Ko, H.W., Lin, C.H (2007), Learning with online tutoring: Rural area students' perception of satisfaction with synchronous learning Retrieved on December 7, 2020 from http://www.mecs-press.org/ijmecs/ijmecs-v4-n5/IJMECS-V4-N5-7.pdf?fbclid=IwAR30Kb_tE8afPL0-39hUFJkit_DGEF6cMana3irrMUhY7PPjDLgD8AVrvd0

Cronbach's Alpha. https://www.statisticssolutions.com/cronbachs-alpha/

Crawford J, Butler_Henderson K, Jurgen R, et al. COVID_19: 20 countries' higher education intra_period digital pedagogy responses. J Appl Learn Teach. Retrieved on December 18, 2020 from https://eprints.utas.edu.au/34123/ Debacker, T. and Nelson, M. (2000). Motivations to learn science: differences related to gender, class type, and ability. Journal of Education Research, 93(4), 245-254. December 7, 2020 from https://core.ac.uk/download/pdf/188063268.pdf

Deci, E. L., & Ryan, R. M. (2012). *Self-determination theory.* In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (p. 416–436). Sage Publications Ltd. https://doi.org/10.4135/9781446249215.n21

De La Salle University (2020b). Lasallians R.E.A.C.H. Retrieved on December 18, 2020 from https://www.dlsu.edu.ph/lasallians-reach/

De Vera, P. (2020b). Universities, Colleges Gear Up For Opening Of Classes in August. Quezon City, PH: CHED. Retrieved on December 18, 2020 from https://ched.gov.ph/universities-colleges-gear-up-for-opening-of-classes-inaugust/

Department of Education (2020). Learning while staying at home: Teachers, parents support DepEd distance learning platform. Pasig City, PH: DepEd. Retrieved on December 18, 2020 from https://www.deped.gov.ph/2020/03/21/learning-whilestaying-at-home-teachers-parents-support-deped-distance-learning-platform/

Dieltiens, V. 2008. As long as the rain still falls we must cultivate: Africanist challenges to liberal education. Journal of Education, 45, 29-42 Retrieved on December 7, 2020 from https://hipatiapress.com/hpjournals/index.php/remie/article/download/5607/pdf Dube, B. (2020). Rural online learning in the context of COVID-19 in South Africa: Evoking an Inclusive education approach. Retrieved on December 7, 2020 from https://hipatiapress.com/hpjournals/index.php/remie/article/download/5607/pdf Elliot, A., Shell, M, Henry K. and Maier, M. (2005). Achievement goals, performance contingencies, and performance attainment: an experimental test. Journal of Educational Psychology, 97(4), 630-640. Retrieved on December 7, 2020 from https://core.ac.uk/download/pdf/188063268.pdf?fbclid=IwAR3NHdX9EzKNTxRTBvrq49l7YR990bTB23P82O3iabm82_Tucaoy0WU7QEc

Etxebarria, N. Santamaria, M.D., Gorrochategui, M., Mondragon, N. (2020). Stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak in a population sample in the northern Spain. CSP Reports in Public Health. p 2. Retrieved on November 20, 2020 from https://www.scielo.br/pdf/csp/v36n4/en_1678-4464-csp-36-04-e00054020.pdf

European University Association. 2020.European higher education in the Covid-19 crisis. [online] Retrieved on December 18, 2020 from <https://eua.eu/downloads/publications/briefing_european%20higher%20educati on%20in%20the%20covid-19%20crisis.pdf>

Fabito, B. S., Trillanes, A. O., & Sarmiento, J. R.(2021). Barriers and challenges of computing students in an online learning environment: Insights from one private university in the Philippines. International Journal of Computing Sciences Research, 5(1), 441-458. doi:10.25147/ijcsr.2017.001.1.51 Retrieved on December 7, 2020 from https://www.stepacademic.net/ijcsr/article/view/179/80 Y.H (2004) Collaborative online learning: interaction patterns and limiting factors, Open Learning: The Journal of Open, Distance and e-Learning, 19:2, 135-149, DOI: 10.1080/0268051042000224743

Gautam, P. (2020). Advantages and disadvantages of online learning. Retrieved on December 7, 2020 from https://elearningindustry.com/advantages-and- disadvantages-online-learning

Harackiewicz, J., Barron, K. and Elliot, A. (1998). Rethinking achievement goals: when are they adaptive for college students and why? Educational Psychology, 33(1), 1-21. Retrieved on December 7, 2020 from https://core.ac.uk/download/pdf/188063268.pdf?fbclid=IwAR3NHdX9EzKNTxRTBvrq49l7YR990bTB23P82O3iabm82_Tucaoy0WU7QEc

Hew, K. F., & Cheung, W. S. (2008). Attracting student participation in asynchronous online discussion: a case study of peer facilitation computers & education, 51(3), 1111-1124. Retrieved on December 7, 2020 from https://www.researchgate.net/publication/321992187_Online_learners'_motivation_in_online_learning_the_effect_of_onlineparticipation_social_presence_and_co llaboration

Hillsdale, NJ: Lawrence Erlbaum Associates. Martens, R. L., Gulikers,J.,& Bastiaens, T. (2004). The impact

of intrinsic motivation on e-learning in authentic computer tasks. Retrieved on December 7, 2020 from https://www.researchgate.net/publication/315033704_The_Importance_of_Motiv ation_in_Online_Learning

Hodges C, Moore S, Lockee B, Trust T, Bond A. The difference between emergency remote teaching and online learning. In: Educause Review; 2020. USA. Retrieved on December 18, 2020 from https://er.educause.edu/articles/2020/3/the-difference-betweenemergencyremote-teaching-and-online-learning

Inoue, Y. (2007). Online education for lifelong learning: A silent revolution. In Y. Inoue (Ed.), Online education for lifelong learning (pp. 1-28). Hershey, PA: Information Science Publishing.

Jang H., Kim E. J., Reeve J. (2016). Why students become more engaged or more disengaged during the semester: a self-determination theory dual-process model. Learn. Instr. 43 27–38.

Jun Xin Lee, Ahmad Hathim Ahmad Azman, Jing Yi Ng, Noor Akmal Shareela Ismail (July 8, 2020). Reflection of connectivism in medical education and learning motivation during COVID-19. Retrieved on September 15, 2020 https://www.researchgate.net/publication/342794459_Reflection_of_connectivis m_in_medical_education_and_learning_motivation_4_during_COVID-19

Keller, J. M., & Suzuki, K. (2004). Learner motivation and e-learning design: A multinationally validated process. Journal of Educational Media, 29(3), 229-239. Retrieved on December 7, 2020 from https://www.researchgate.net/publication/315033704_The_Importance_of_Motivation_in_Online_Learning

Lathrop A. (2011). Impact of student motivation in online learning activities. Retrived on May 30, 2021 from https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1027&context=agronh ortdiss

Lee, C.Y., (2000), Student motivation in the online learning environment. Retrieved on December 7, 2020 from http://joemls.dils.tku.edu.tw/fulltext/37/37-4/367-375.pdf

Lepper, M. R., & Malone, T. W. (1987). Intrinsic motivation and instructional effectiveness in computer-based education. In R. E. Snow & M. J. Farr (Eds.), Aptitude, learning and instruction (Vol. 3: Conative and affective process analyses, pp. 255-286). Retrieved on December 7, 2020 from https://www.researchgate.net/publication/315033704_The_Importance_of_Motivation_in_Online_Learning

Lynch, M. M. (2001, November-December). Effective student preparation for online learning. The Technology Source. Retrieved on December 9, 2020 from http://www.technologysource.org/article/effective_student_preparation_for_online_learning

Maslow, A. H. (1943). Theory of motivation. Psychological Review, 50(4), 370-396. doi:10.1037/h0054346

Maslow, A. H. (1965). Self-actualization and beyond. Brookline, MA: Center for the Study of Liberal Education for Adults. Retrieved from ERIC database. (ED012056)

Milheim, K. (2012). Toward a better experience: Examining student needs in the online classroom through Maslow's Hierarchy of Needs model. MERLOT Journal of Online Learning and Teaching. Retrieved on December 9, 2020 from https://jolt.merlot.org/vol8no2/milheim_0612.pdf

Muilenburg, L. Y., & Berge, Z. L. (2005). Student barriers to online learning: A factor analytic study. Distance Education 26(1), 29–48. Retrieved on December 7, 2020 from _AM_OFFLINE_MEASURING_BARRIERS_TO_OPEN_ONLINE_LEA.pdf

Nambiar D. (2020). The impact of online learning during COVID19: students' and teachers' perspective. International Journal of Indian Psychology. Retrieved on December 7, 2020 from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3679489

Nortvig, A. M., Petersen, A. K., and Balle, S. H., 2018. A Literature review of the factors influencing E learning and blended learning in relation to learning outcome, student satisfaction and engagement. The Electronic Journal of e-Learning, 16(1), pp. 46-55. Retrieved on December 7, 2020 from https://files.eric.ed.gov/fulltext/EJ1175336.pdf?fbclid=IwAR324HWPjvZUlnkWFH5JOWXoV8_eU1HoRSW-ptIfAGM4EKzgEO4Scbo6QAg

Oztok, M., Zingaro, D., Brett, C., and Hewitt, J. (2013). Exploring asynchronous and synchronous tool use

in online courses. Comput. Educ. Retrieved on December 18, 2020 from https://www.sciencedirect.com/science/article/abs/pii/S0360131512001935?via%3Dihub

Parrocha, A. (2020). HEIs may hold limited face-to-face classes in MGCQ Areas. Quezon City, PH: Philippine News Agency. Retreived on December 18, 2020 from https://www.deped.gov.ph/2020/03/21/learning-while-staying-at-hometeachers-parents-support-deped-distance-learning-platform/

Perneger,T.V., Courvoisier, D.S.. Hudelson, P.M. and Gayet-Ageron, A. : Sample size for pre-test of questionnaires. Vol. 24, No. 1, Special Section: Quantitative Methods (January 2015), pp. 147-151 https://www.jstor.org/stable/44848922

Petersen I. H., Louw J., Dumont K. (2009). Adjustment to university and academic performance among disadvantaged students in South Africa. Educ. Psychol. 29 99–115. 10.1080/01443410802521066

Philippine Science High School Central Visayas Campus. Distance learning as alternative mode of instructions. Retrieved on December 18, 2020 from https://cvisc.pshs.edu.ph/latest/463-distance-learning-as-alternative-mode-ofinstruction

Rawsthorne, L. and Elliot, A. (1999). Achievement goals and intrinsic motivation: a metaanalytic review. Personality and Social Psychology Review, 3(4), 326-344. Retrieved on December 7, 2020 from https://core.ac.uk/download/pdf/188063268.pdf?fbclid=IwAR3NHdX9EzKNTxRTBvrq49l7YR990bTB23P82O3iabm82_Tucaoy0WU7QEc

Rothberg, A.,Bailey, J., Ballard,K. (2012) "E- learning in rural environments" Retrieved on December 7, 2020 from http://www.mecs-press.org/ijmecs/ijmecsv4-n5/IJMECS-V4-N5-7.pdf?fbclid=IwAR30Kb_tE8afPL039hUFJkit_DGEF6cMana3irrMUhY7PPjDLgD8AVrvd0

Saavedra, A. (2020). Educational challenges and opportunities of the coronavirus (COVID-19) pandemic. Retrieved on November 20, 2020 from https://blogs.worldbank.org/education/educational-challenges-and-opportunitiescovid-19-pandemic

Sansone, D., & Smith, J.L. (2000). Interest and self-regulation: The relation between having to and want to. In Sansone & J. M Harackiewicz (Eds.), Intrinsic and extrinsic motivation: The search for optimal motivation and performance (pp. 341-372). San Diego, CA: Academic Press.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). Motivation in education (3rd ed.). Upper Saddle River, NJ: Pearson Merrill Prentice Hall. Retrieved on December 7, 2020 from https://files.eric.ed.gov/fulltext/EJ1079770.pdf

Selvi, L. (2010). Motivating factors in online classes. Retrieved on May 31, 2021 from https://doi.org/10.1016/j.sbspro.2010.03.110

Shaw, S., & Polovina, S. (1999). Practical experiences of, and lessons learntfrom, internet technologies in higher education. Educational Technology & Society, 2(3), 16-24.

Suhendi, Andang & Purwarno, Purwarno. (2018). Constructivist Learning Theory: The contribution to foreign language learning and teaching. 10.18502/kss.v3i4.1921. Retrieved on October 6, 2020 from https://www.researchgate.net/publication/324950046_Constructivist_Learning_Theory_The_Contribution_to_Foreign_Language_Learning_and_Teaching

Srichanyachon, N., 2020. The barriers and nedds of online learner. [online] Retrieved on December 18, 2020 from < https://www.researchgate.net/publication/276839765_The_Barriers_And_Needs_Of_Online_Learners/link/563be8d208ae45b5d286a0e0/download>

Udan, J. (2011). Theoretical Foundations of Nursing. First Edition page 299. United Nations Children's Funds. 2020. Education and COVID-19. Retrieved on December 18, 2020 from Education and COVID-19 - UNICEF DATA

University of Santo Tomas (2020). Institutional continuity plan during extended and postECQ. Manila, PH: University of Santo Tomas. Retrieved on December 18, 2020 from http://graduateschool.ust.edu.ph/announcement/institutional-continuity-planduring-extended-and-post-ecq/

Villarin, J. R. T. (2020). Enhanced community quarantine. Quezon City, PH: Ateneo de Manila University. Retrieved on December 18, 2020 from http://www.ateneo.edu/enhanced-community-quarantine

Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., Matos, L., & Lacante, M. (2004). Less is sometimes

more: Goal content matters. Journal of Educational Psychology, 96, 755-764.

WHO, 2020. WHO coronavirus disease (COVID-19) Dashboard. Retrieved on December 22, 2020 from https://covid19.who.int/

Woodrow, L. (2017) Motivation in Language Learning. In: Breeze R., Sancho Guinda C. (eds) Essential competencies for English-medium university teaching. Educational Linguistics, 27. Springer, Cham. https://link.springer.com/content/pdf/10.1007%2F978-3-319-40956-6_16.pdf

World Health Organization. (2020). Impact of COVID-19 on people's livelihoods, their health and our food systems. Retrieved on December 18, 2020 from Impact of COVID-19 on people's livelihoods, their health and our food systems (who.int)

Xie, K., & Ke, F. (2011). The role of students' motivation in peer-moderated asynchronous online discussions. British Journal of Educational Technology, 42(6), 916-930. Retrieved on December 7, 2020 from https://www.researchgate.net/publication/321992187_Online_Learners'_Motivatio n_in_Online_Learning_The_Effect_of_OnlineParticipation_Social_Presence_and_Collaboration

Yang, Y. T. C., and Wu, W. C. I. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study. computers & education, 59(2), 339-352.

APPENDICES

Central Philippine University	RESEARCH ETHICS COMMITTEE		
	CERTIFICATION OF APPROVAL	REC Form No.	07-2
		Version No.	00
		Effectivity Date	March 03, 2021

This is to certify that the following protocol and related documents have been granted approval by the Central Philippine University Review Ethics Committee for implementation.

REC Protocol No.	21-54-01-UG-LIMSIACO ET.AL	Sponsor Protocol No.	N/A
Principal Investigator/s	CHRISTEL DAWN C. LIMSIACO, BRUCE RAYMUND JUELE, ET.AL		
Sponsor	N/A		
Title	BARRIERS AND LEVELS OF MOT IVATION IN ONLINE LE ARNING OF STUDENT NURSES IN A PRIVATE UNIVERSITY		
Protocol Version No.	N/A	Version Date	N/A
Other Documents			

Type of review	[X] Expedited [ ] Full board	Duration of Approval From (date): June 07, 2021 To: June 07, 2022	Frequency of continuing review: 1 YEAR

Review Date: June 07, 2021

Investigator Responsibilities after Approval:

- Submit progress report during the conduct of the study as may be required by the CPU REC
- Submit a final report within 6 weeks after the completion of the study
- Report protocol deviation/violation
- Comply with all relevant international and national guidelines and regulations
- Abide by the principles of good clinical practice and ethical research

Diadem Pearl S. Equiña, MD.
Chair, CPU-REC
Date: June 07, 2021

R EVIEW, C ONTINUING E DUCATION and C ONSULTANCY C ENTER
Central Philippine University
Jaro, Iloilo City
Tel. No. 329-1971 local 1008 email: rceccsec@cpu.edu.ph
Website: rcecc.cpu.edu.ph

June 10, 2021

C E R T I F I C A T I O N

This is to certify that the paper entitled **"BARRIERS AND LEVELS OF MOTIVATION IN ONLINE LEARNING OF STUDENT NURSES IN A PRIVATE UNIVERSITY"** by **Mr. JUELE, Bruce Raymond L., Ms. LEONG, Jade Alexandra G., Ms. LICERA, Colleen Kate D., Ms. LIMSIACO, Christel Dawn C., Mr. MACUJA. Kryst Ian O., Ms. MAGALLON, Andrea Jean B., and Ms. MAGBANUA, Jaehazle C.** have undergone Turnitin Similarity Checking.

PINKY E. LUTERO
Staff In-charge

June 10, 2021

CERTIFICATION

This is to certify that the paper entitled ***"BARRIERS AND LEVELS OF MOTIVATION IN ONLINE LEARNING OF STUDENT NURSES IN A PRIVATE UNIVERSITY"***, by Mr. JUELE, Bruce Raymond L., Ms. LEONG, Jade Alexandra G., Ms. LICERA, Colleen Kate D., Ms. LIMSIACO, Christel Dawn C., Mr. MACUJA, Kryst Ian O., Ms. MAGALLON, Andrea Jean B., Ms. MAGBANUA, Jaehazle C. have undergone statistic checking.

TONY RAY CANAMAN
Statistician

August 15, 2021

CERTIFICATION

This is to certify that the research paper entitled "BARRIERS AND LEVELS OF MOTIVATION IN ONLINE LEARNING OF STUDENT NURSES IN A PRIVATE UNIVERSITY", by Mr. JUELE, Bruce Raymond L., Ms. LEONG, Jade Alexandra G., Ms. LICERA, Colleen Kate D., Ms. LIMSIACO, Christel Dawn C., Mr. MACUJA, Kryst Ian O., Ms. MAGALLON, Andrea Jean B., Ms. MAGBANUA, Jaehazle C. has been grammatically checked and edited.

This certification is issued as a requirement for the said research paper.

Thank you very much.

CERTIFIED BY:

Gleason B. Parcia M.A. Ed

The acceptance of online inverted classroom model and peer assisted learning among ophthalmology graduate students

[1,2]Pear F. Pongsachareonnont, MD, MPH*, [1,2]Disorn Suwajanakorn, MD,
[2]Parima Hirunwiwatkul, MD, [1,2] Wijak Kongwattananon, MD,
[1,3] Anita Manassakorn, MD, [1,2]Kittisak Kulvichit, MD, MSc,
[2]Wasee Tulvatana, MD, MSc.

[1.]Vitreoretinal Research Unit, Faculty of Medicine, Chulalongkorn University, Thailand
[2.]Department of Ophthalmology, Faculty of Medicine, Chulalongkorn University and King Chulalongkorn Memorial Hospital, Thailand
[3.]Glaucoma Research Unit, Faculty of Medicine, Chulalongkorn University, Thailand

*Corresponding author

Abstract: Critical Appraisal required a wide range complexity skill, as well as the indeterminate character of contents. It is important for a critical appraisal classroom to emphasize the outcome that students can understand what they read in preference rather than to demonstrate only what is in articles. Moreover, along with the pandemic situation, a virtual classroom has become necessary worldwide, including in Chulalongkorn University as well. The aims of this study were to evaluate an acceptance and satisfaction among ophthalmology students and faculty members of an integrated online inverted classroom and peer assisted learning methods. The study started with multiple interventions to the classroom including transformation from face-to-face classroom to virtual class, integration of peer assisted learning classroom with participation of highly qualified experts, combining flipped classroom method and adding dialogic teaching by an in-charge instructor. Class participants were asked to complete the surveys related to quality of class, acceptance of the remote teaching platform, attitude toward class environment and open end questions for quality improvement. The surveys were acquired at baseline (time0), half way of the course (time1) and after the completion of the course (time2). The results showed 35% of participants prefer in-class study at time1 then the number dropped down to 17% at time2. Along with this, about 26% preferred to abandon the virtual class at time1 which declined to only 11% at time2. The class satisfaction rose up from 76% at time0 to 95% at time1. Also, less than 10% of participants enjoyed the class while the proportion increased to 58% after the class intervention. Interestingly, there was an 86 % reduction of the members who reported monotonous class discussion at time1 compared to time0, followed by an incline of this rate at time2. More than 85% of class members reflected the useful discussion content of a statistician class participation. In summary, our study demonstrated an increase of positive acceptance of virtual classroom in the course of time. The multidisciplinary audiences helped to enhance the practical class contents in this critical appraisal course. Furthermore, class activities should be modified after the students gain higher skills to maintain the delightful study environment.

2 ELearning Forum Asia 2021

Augmenting the Virtual Environment: Technology – Innovation – Humanity

Online Learning

Key words: Critical appraisal, peer assisted classroom, flipped classroom

Introduction

Critical Appraisal (CA) skills are important in clinical practice for healthcare personnel. We cannot deny that, nowadays, technology and advanced research knowledge are published every day. Published information requires careful evaluation before the implementation to an evidence based healthcare practice. It is important for a critical appraisal classroom to emphasize the outcome that students can understand what they read in preference rather than to demonstrate only what is in articles. A skill in critical appraisal required a wide range complexity skill, as well as the indeterminate character of contents.

CA in post-graduation teaching are challenges. Evidence has been shown that critical appraisal teaching was related to participant's knowledge. (Parkes, Hyde, Deeks, & Milne, 2001) The CA curriculum includes journal club, workshop, seminar and mentorship teaching. The post-graduation classroom usually contains small group discussion, one-on-one teaching and problem-based learning. (Coomarasamy, Taylor, & Khan, 2003) The journal club in several weeks duration in conjunction with multiple classroom formats has an effect on student level of knowledge in clinical epidemiology. (Norman & Shannon, 1998)

Flipped classroom or inverted classroom is known as a teaching technique which requires learning to acquire knowledge independently prior to joining the classroom. Then, to obtain the target knowledge, it is followed by class interaction with the instructor and taught in a face-to-face environment. (Kraut et al., 2019) However, along with the pandemic situation, a virtual classroom has become necessary worldwide, including in Chulalongkorn University.

The aims of this study were to evaluate acceptance and satisfaction among ophthalmology students and faculty members of an integrated online inverted classroom and peer assisted learning methods.

Methods

This study was a prospective survey of participants in the critical appraisal class of academic year 2020 which was conducted at Department of Ophthalmology, Chulalongkorn University, Bangkok, Thailand from July, 2020 to June, 2021. The study was approved by the institutional review board of the Faculty of Medicine, Chulalongkorn University (IRB COA 1073/2020). All participants were asked for consent by action of the survey response.

The study started by using a feed-back information from class participants of CA class (journal club) in the academic year 2019 (pre-intervention class). The main comments from the 2019 class were that the classroom was boring and duration was too long, the presenters' repeated contents, and one-way communication techniques were mostly applied. Then, in academic year 2020 (Intervention class), the classroom was modified with multiple interventions to the classroom including transformation from face-to-face classroom to virtual class, integration of peer assisted learning classroom with participation of highly qualified experts, combining flipped classroom method and adding dialogic teaching by an in-charge instructor. The methods used in the classroom were in the same fashion throughout the course.

The pre-intervention class in each session was composed of article presentations together with critical appraisal by first year ophthalmology residents. Then followed by reviews of supporting articles and critical appraisal of the main article by senior year ophthalmology residents. One way communication methods were used in this section. After both first year and senior year residents gave their presentation, the assigned mentor would give his/her comments about the main articles and asked questions to the presenter. Each session was composed of 2 articles reading in 150 minutes. Participants were all ophthalmology residents, fellows and faculty.

In the intervention class, we had changed the teaching methods with the integration of a virtual classroom. The class duration was reduced to only 120 minutes with 2 articles appraised. The class interventions included; changed from face-to-face classroom to virtual classroom by using Zoom® platform due to the COVID-19 pandemic regulation, flipped classroom method for students to studied in related topic, integration of peer assisted learning classroom with participation high qualifies experts, class-instructor were required to add a dialogic teaching to the students who presented articles and participants. At least one biostatistics statistician and one highly expert ophthalmologist researcher were required to join in all class sessions and make discussion. All class participants were encouraged to give a comment or discussion. Each class started with a 10-minute article reading then the first year and senior year ophthalmology residents appraised their idea on the article within 10 minutes time and followed by experts, presenters and participants discussion with the facilitation of class-instructors. The same time steps were applied in each article. There were 15 classes in an academic year course and all of the classes followed the same fashioned.

Class participants were asked to complete the surveys related to quality of class, acceptance of the remote teaching platform, attitude toward class environment and open end questions for quality improvement. The surveys were acquired at baseline which took after the pre-intervention class had ended and before starting of the intervention class (time0), 50% of the course (time1) and after the completion of the course (time2). Data collection included participants' demographic, choices preference of classroom type, class atmosphere, class satisfaction, opinion about biostatisticians joining the class, satisfaction of online learning platform and future direction of the classroom after COVID-19 pandemic. The surveys were collected using google form online surveys with all participants were anonymous. The survey was distributed in emails of all students and faculty and the responses were voluntary and anonymous. All respondents were asked to give a consent about this study before answering the survey.

Data were described in percentages, proportion and means. Microsoft excel® was used for data interpretation, graph production and analysis.

Results

There were about 62 faculties and postgraduate trainees in our ophthalmology department who received the survey. The demographic and survey respondent characteristics are described in **Table 1**.

Table1
Demographic of respondents

		Pre-intervention period (Time0)	50% of the course (Time1)	After course completion (Time2)
Total number (N)		34	43	46
Level	Students (%)	24 (71%)	28 (65%)	25 (55%)
	Faculty staff and expert ophthalmologist (%)	10 (29%)	15 (35%)	21 (45%)
Sex	Male	38.2%	39.5%	34.8%
Age	Less than 30 years	61.8%	62.8%	47.8%

The satisfaction of class and class atmosphere from respondents at time0, time1 and time2 are shown in table 2.

Table 2
Percentages of class satisfaction

Type of questions	Pre-intervention period (Time0)	50% of the course (Time1)	After course completion (Time2)
"I enjoy this class"	5.9%	58.1%	43.5%
"The student's presentation is too long"	17.6%	2.3%	13%
"This class is boring"	14.7%	2.3%	2.2%
"I hope the classes duration are shorter"	47.1%	11.6%	21.7%
"I wish the classes have more discussion"	38.2%	39.5%	23.9%
"I don't want any changes in the classes"	8.8%	16.3%	23.9%
"I wish this class used an online application for question and answer"	23.5%	16.3%	6.5%
"I want the instructor asking more questions"	5.9%	11.6%	10.9%
"I want class participants show more active participation"	17.6%	16.3%	10.9%
"I've gained knowledge from this class"	81.7%	100%	97.9%
"There is no class interaction"	11.8%	14%	6.5%

For acceptance of online classroom platforms, about half of respondents expressed that online class had gained equally benefit as face-to-face classroom. There were 11.6% at time1 and 19.6% at time2 who expressed that online classroom is better than face-to-face classroom. In another way, 34.9% at time1 and 17.4% at time2 felt that face-to-face classroom is better than online classroom (**figure1**). After the COVID-19 pandemic situations, about 70% of respondents prefer to have a mixed online and face-to-face classroom. None of the respondents wanted to have only an online classroom at time1 while there was 10.9% at time2. Details of post-covid preferable classrooms is shown in **figure2**.

For the class participation of the bio-stat specialist, 88.4% at time1 and 95.7% at time2 expressed that there were benefits for classes. About 97.7% at time1 and 100% at time2 wanted to have a bio-stat expert in this classroom in the next academic year.

Discussion

CA teaching with structured journal clubs in medical education has been used for more than 100 years and still widely used.(Linzer, 1987) The effectiveness of the CA class based on curriculum development and classroom implement.(Coomarasamy et al., 2003) The use of small group teaching in the classroom facilitate the student to gain knowledge , along with team working in journal reading and problem solving are stimulate the active learning atmosphere.(Edwards, White, Gray, & Fischbacher, 2001; Green &

Johnson, 2007) Each literatures have need of its own appraisal process and none of them are exactly similar. This leads to the concept of CA teaching that considered to teach a specific higher cognitive process and aims to emphasize the thinking idea for learners as well as implementing the knowledge. (Barnett & Francis, 2012) With the blending of inverted classroom and traditional classroom, the learners may gain skills in higher cognition tasks. The learner also had greater interest, enjoyment and performed higher task skills when compared to a traditional classroom. Combination with e-learning systems can also add benefits to these methods. (Kraut et al., 2019) In our study, the class enjoyment increased 10 folds compared to pre-intervention classrooms. It is interesting that only few percentages of respondents felt bored about the intervention classroom at time1 and time2, compared to nearly 15% at baseline. Although the number of respondents who desired a shorter class duration declined from about 47% at time0 to about11% at time1, the percentages increased to about 21% at time2. The explanation of this rebound phenomenon is that students have gained knowledge and reach higher competency, when the time passes by, and they apparently do not require that long class duration to achieve the class satisfaction and understanding the class contents. We suggest changing patterns and methods of teaching in the classroom during a certain duration of course, in order to adjust with the learner's competency.

The teacher and learner's roles are part of interaction in the classroom activity. (Nunan, 1989) High background in research and prior teaching in critical appraisal were associated to the improvement of knowledge in CA class. (Edwards et al., 2001; Parkes et al., 2001) By integrating biostatistician along with experiences researcher in CA classroom might affect on the knowledge context of class and class engaging. By having the experts in the classroom, this supported the peer teaching system which in this context was the "near-peer teaching" situation. It happens when teachers and advanced learners teach one another in the classroom. (Ten Cate & Durning, 2007) In this context, senior students and highly expert's participants are involved as peers in the classroom. However, there is controversy whether CA teaching has the benefit of real patient care. (Coomarasamy et al., 2003; Parkes et al., 2001) The expert class participants and senior students are assumed to have higher knowledge and experiences. These groups of participants helped to create an intelligent learning environment or as known as "Cognitive tutors" which resulted in a problem-solving environment and learners could gain their knowledge from this. They also facilitate learning by the expression of their thought and support the complexity of problem solving. (Corbett, Koedinger, & Hadley, 2001) The learner from this study might understand the benefit of these participants as more than 80% responded the gain of benefit for having a biostatistician in class and nearly 100% of class participants want to have this expert in the next academic year class.

Virtual classroom or internet-based courses may inhibit class interaction and social bonding compared to face-to-face classroom type, however, it provides flexibility and independence of place and time. The virtual classroom could create dynamic interaction of class participants from the course conversation and enhance the class communication/discussion because students had less peer pressure and less recognition compared to a physical classroom. Factors related to the learner satisfaction on online- based class are software program, perceived usefulness of class, flexibility, class interaction and instructors teaching skill. (Arbaugh, 2000) In our study, the number of class participants who prefer to have an online classroom was increased double at time2 compared to time1, while the percentage of the participants who preferred physical classroom was reduced about half of time1 at time2. This can reflect that class participants get more acceptable in the virtual classroom in a matter of time. The change of class participants' behavior had been changed over time. As we can see that participants might be more comfortable with the class interaction as reflected that only 6% of class wants more class interaction while the pre-intervention and time1 numbers were about two fold. Adding to this, the percentages of respondents who wanted more class discussion and more class active participation reduced at time2 which correlated to the result from class interaction questions.

The limitation of this study is that data from only respondents who cooperate to respond to this survey were collected as well as the characteristics of class participants who did not respond to the surveys were not identified. Moreover, the survey respondents from baseline, time1 and time 2 might not be the exact same person and this study could not evaluate an individual response along with the change over time

periods. Furthermore, this study focuses only participants' perspective in class effectiveness while the real outcomes of knowledge gain were not measured.

In summary, our study demonstrated an increasing positive acceptance of virtual classroom journal clubs in the course of time. The multidisciplinary and expert audiences help to enhance the practical class contents in this critical appraisal course. Furthermore, class activities should be modified after the students gain higher skills to maintain the delightful study environment.

Figure1
The comparison of classroom types (%)

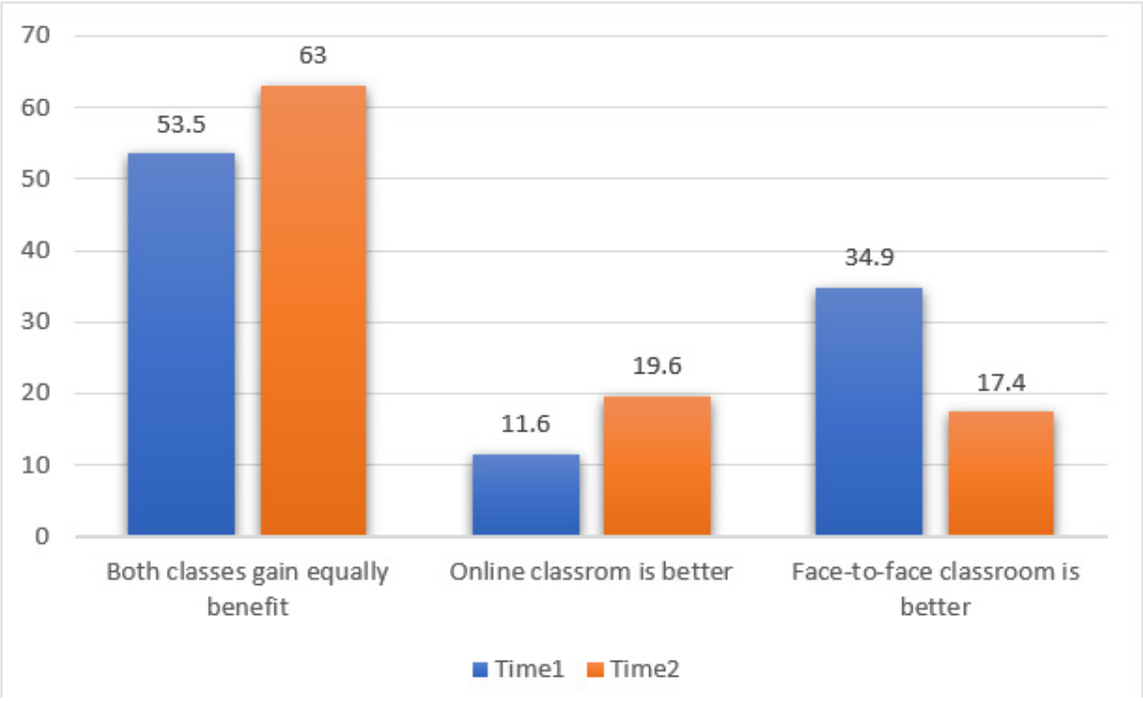
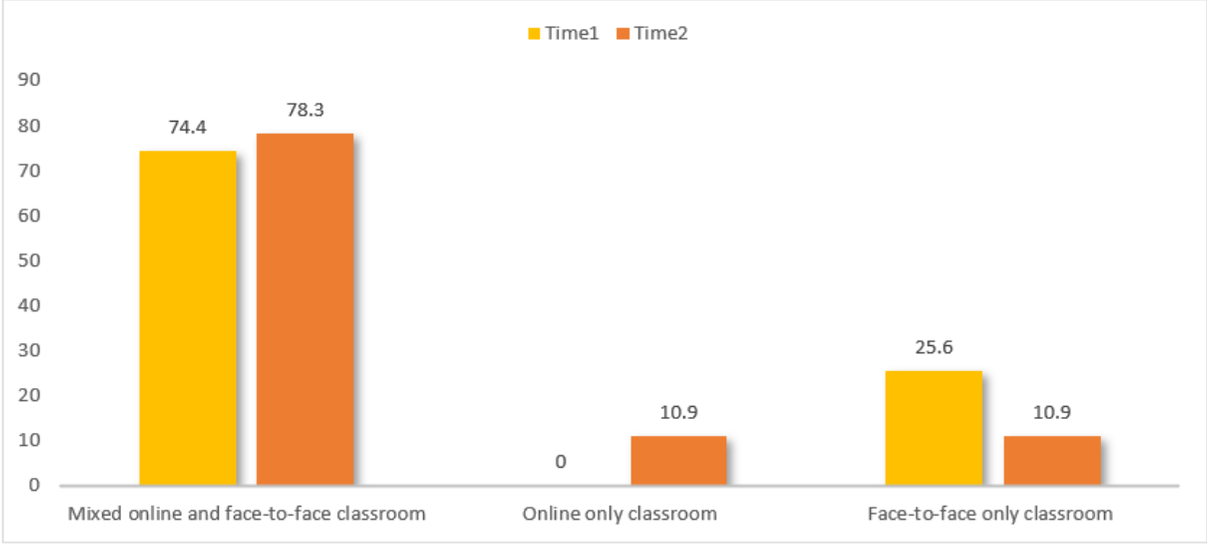


Figure2
Post-Covid19 preference classroom types (%)



References

Arbaugh, J. B. (2000). Virtual classroom characteristics and student satisfaction with internet-based MBA courses. *Journal of management education, 24*(1), 32-54.

Barnett, J. E., & Francis, A. L. (2012). Using higher order thinking questions to foster critical thinking: A classroom study. *Educational Psychology, 32*(2), 201-211.

Coomarasamy, A., Taylor, R., & Khan, K. (2003). A systematic review of postgraduate teaching in evidence-based medicine and critical appraisal. *Medical teacher, 25*(1), 77-81.

Corbett, A. T., Koedinger, K., & Hadley, W. S. (2001). Cognitive Tutors: From the research classroom to all classrooms *Technology enhanced learning* (pp. 215-240): Routledge.

Edwards, R., White, M., Gray, J., & Fischbacher, C. (2001). Use of a journal club and letter□writing exercise to teach critical appraisal to medical undergraduates. *Medical education, 35*(7), 691-694.

Green, B. N., & Johnson, C. D. (2007). Use of a modified journal club and letters to editors to teach critical appraisal skills. *Journal of allied health, 36*(1), 47-51.

Kraut, A. S., Omron, R., Caretta-Weyer, H., Jordan, J., Manthey, D., Wolf, S. J., . . . Kornegay, J. (2019). The flipped classroom: a critical appraisal. *Western Journal of Emergency Medicine, 20*(3), 527.

Linzer, M. (1987). The journal club and medical education: over one hundred years of unrecorded history. *Postgraduate medical journal, 63*(740), 475-478.

Norman, G. R., & Shannon, S. I. (1998). Effectiveness of instruction in critical appraisal (evidence-based medicine) skills: a critical appraisal. *Cmaj, 158*(2), 177-181.

Nunan, D. (1989). *Designing tasks for the communicative classroom*: Cambridge university press.

Parkes, J., Hyde, C., Deeks, J. J., & Milne, R. (2001). Teaching critical appraisal skills in health care settings. *Cochrane Database of Systematic Reviews*(3).

Ten Cate, O., & Durning, S. (2007). Dimensions and psychology of peer teaching in medical education. *Medical teacher, 29*(6), 546-552.

Roots Program in Indonesia: Transferring the Module of Knowledge and Activities from Offline to Online during Pandemic Covid-19

Rika Saraswati

rikasaraswati@unika.ac.id

Law Department, Faculty of Law and Communication, Soegijapranata Catholic University, Semarang, Indonesia

Abstract: The Indonesian Ministry of Education, Culture, Research and Technology has a program namely Roots (Akar) to reduce bullying against students at schools. Prior to the Indonesian ministry implementing the program at national level, a hard copy (paper) version of the supporting module was created and the implementation of the module undertaken 'face to face'. However, the implementation of the module has been transferred to an online method due to the Covid-19 pandemic. This paper is written in order to examine the purpose of the Roots program, the different modes for training (i.e. offline and online), and the challenges that may have faced the facilitator when transferring the substance of the training and related activities from offline to online method. The Roots program targeted selected teachers as facilitators and selected students as agents of change who would be to spread positive values and norms in order to prevent bullying at schools. The module and activities can be implemented in three ways, namely: offline, online and via a hybrid. The choice depends on a school's geographical situation and conditions such as its availability of technology and appropriately trained personnel as well as the depth of the problem on that site.

Keywords: Roots program, offline, online

2 ELearning Forum Asia 2021

Augmenting the Virtual Environment: Technology – Innovation – Humanity

Online Learning

INTRODUCTION

Bullying of Indonesian children at school has long existed in Indonesia. It was recorded in 2010s by the Indonesian Commission on Children Protection (KPAI) until 2020 and the data demonstratesthatmanyIndonesian children became the victims and/or perpetrators of bullying in educational institutions (Elga Andina, 2014, p.1-10; KPAI, 2020). The children had experienced bullying either in its traditional forms (physic, verbal, social/ relational, sexual) or in new forms made possible by technological change, i.e through social media (cyberspace) which provided the 'space' for a new form of bullying that has become known as 'cyberbullying', which can embody many of the traditional forms but via the internet, with psychological violence including online abuse, misrepresentation, gaslighting, humiliation, ridicule, and/or social exclusion from peer group activities and friendship groups, and threats of physical harm to students or family members or their property — any and all of which can cause immense suffering by victims and even lead to their suicide (Muhammad Haekal, 2020; Yayasan Sejiwa, 2008).

The government can be seen to be beginning to pay attention to the issue of bullying in 2015 the Minister of Education and Culture issued MoEC Regulation No. 82 of 2015 which required that schools provide a 'violence free' environment for students (Rika Saraswati and Hadiyono, 2021, p.1-15). However, there had been little serious action taken by the Indonesian government to prevent the recurrence of bullying in schools and to change this destructive behavior. While there have been some disjointed efforts over the years. It can be said that the governmental response in terms of programs to protect children from bullying in it various forms has been very poor. The response was very different from that of the Norwegian government in Norway after three school teenagers committed suicide due to continual bullying by their friends. There the Ministry of Education and Research (then known as the Ministry of education and Church Affairs) responded by conducting a national-scale campaign to eliminate bullying in schools through a bullying prevention program in schools known as the Olweus Bullying Prevention Program (OBPP) (Dan Olweus and Susan P. Limber (2010, 377-401). This program was implemented in 2500 schools in Norway in the period 1983-1985. It was designed to achieve the following goals: reducing the problem of bullying that students often experience at school, preventing the emergence of new bullying, and improving student group relationships at school. To achieve this goal, schools in Norway have worked hard to improve the environment in their schools to reduce the opportunities for bullying, eliminate rewards for bullying behavior, and build a sense of community among students and adults (teachers, education personnel, parents, and other employees) in the school community. The program is evidence based with research confirming its effectiveness (outcomes are positive, although this is to varying degrees among different populations/cohorts) (Susan P. Limber, et.al. 2018, p.56-72; Dan A. Olweus, Weijun Wang et al (2018); Noran Fauziah Yaakub, Fatimah Haron & Goh Chee Leong, 2010, p. 595-598).

A third of Indonesia's population are children (In 2019 the number of children in Indonesia reached 84.4 million (43.2m boys and 41.1m girls) (Kementrian Pemberdayaan Perempuan dan Perlindungan Anak, 2020), and the government has the responsibility to protect them from all forms of violence, especially bullying in schools. The Indonesian government has made various efforts, most of which took the form of amending existing regulations and creating new ones. However, the existing laws and regulations do not seem to have changed the situation because bullying remains exists. Therefore, the Government of Indonesia is trying to change its policy by initiating a program that is designed to give children and people greater awareness of the danger of bullying by promoting positive behaviour. This program is known as Roots (Akar). The government's responsibility is to protect Indonesian children, the implementation of Roots is not only its responsibility but must become national priority. The responsibilty is regulated under Indonesia's Child Protection Law No. 35 of 2014 and the Minister of Education and Culture (MoEC) Regulation No. 82 of 2015 on Prevention and Overcoming of Violence in the Education Units.

Prior to the Indonesian government implementing the program on a national level in 2021, Roots programs have been carried out in Java and Sulawesi on the initiative of United Nation of Children Fund (UNICEF) iin conjunction with various institutions and agencies. In 2018, a youth- driven anti-bullying intervention model was developed and implemented in South Sulawesi and Central Java, using the Roots program. The Program focused on building a positive school climate through student-led activities. This program was implemented in collaboration with the Ministry of Women's Empowerment and Child Protection, as well as support from the Swiss National Committee for UNICEF and local partners. The project will be implemented gradually from 2021 to 2024. In 2021–2022 it will be undertaken in 1,800 sekolah menengah pertama (SMP/junior schools), sekolah menengah atas (SMA/senior high schools), and Sekolah Menengah Kejuruan (SMK/vocational schools).

This program is considered successful in reducing the number of bullying – as a promising low-cost anti-bullying intervention which has been developed and implemented in 56 schools (24,191 students) in the United States (Elizabeth Levy Paluck, Hana Shepherd, and Peter M. Aronow, 2016). This program is aimed at strengthening a positive school climate by students and is organized through the Government of Indonesia's cooperation with UNICEF Indonesia. This module for facilitators was developed by Princeton University in 2013. Based on that fact, the Indonesian government then has

tried to apply it to schools by training teachers selected in 2021. However, considering that a COVID-19 pandemic has persisted into 2021, the training which was originally conducted face to face, then was held online. This implementation certainly poses challenges for all parties because not only is it related to the preparation of materials or modules on- line, but the implementation of the training itself has been in the form of delivering materials and activities online.

METHOD

A qualitative approach was adopted in a participatory research study by the author who has become one of the selected national facilitators that had been trained by the Indonesian ministry and had then trained selected teacher facilitators. The training was conducted online in 14-16 and 18-20 July, 23-25 August 2021, and 28 August-1 September 2021. Secondary data was obtained through selected documentary on the Roots program and bullying issues. Data will be analysis descriptively.

FINDING AND DISCUSSION

The Roots Indonesia Program is a bullying prevention pilot program that has been developed by UNICEF Indonesia with the Government of Indonesia, andacademics, as well as education and child protection practitioners in 2017–2020 (Lucy Bowes et.al., 2019). The aim of the Roots Indonesia Program is to focus on the role of students in schools as 'agents of change' to spread messages and good behavior to their peers. The expectation is that completion of the program could be associated with a reduction in bullying to 30% of the original level. To attain that goal, the government has held national facilitator training for one hundred (100) national facilitators to train selected teacher facilitators who each will be trainers to 30 students in their own schools-the selected and trained students will be future agents of change (timesindonesia.co.id, 2021).

At the beginning of training in 2017–2018, training was undertaken face to face and the medium of training was mostly hard copy (i.e. paper) based. However, the pandemic has altered the way in which knowledge and activities are communicated from paper based to online based. The Ministry of Education, Culture, Research and Technology ('the Ministry') has worked hard the entire module and to organize the training. There are 15 topics in the module and they must be transfereed to the selected teacher facilitators.

Table 1. The activities and method using between offline and online

NO	Subtance	Aims	Activities	Medium	
				offline	online
	Introducing the rogram	To introduce Roots program To introduce the role of students as agent of change	Telling their feelings, put their 'hope card' into the change box	name tags, rope, paper, paper box, facebook or whatsapp	*e-Course,* zoom platform, jamboard (an collaborative digital whiteboard, can be online), power point, facebook, whatsapp
2	Increasing trust among the selected students as agents of change	• To know each other • To know the impact of their behaviour as creating or reducing conflict	Telling their feelings, paper box, chatting person to person, group discussion	Name tags paper, paper box	*e-Course,* zoom platform, breakout room jamboard, power point

3	Understanding Bullying	• To explain what bullying is and to distinguish between myth and fact; • To recognize the types of bullying and the differences between boys' and girls's experiences; • To cultivate empathy for students who bullied.	Exploring students' understanding on bullying and the different or the similar experience of boys and girls.	Nametags paper, paper box	*e-Course*, zoom platform, jamboard video, power point
4	Leadership and assertive communication	• To Explain the characteristics of a good leader and leadership; • To practise speaking • skills in front of a large • group; • Tto practise assertive skills	Students identify characterist ics of a good leader and leadership, and practise speaking assertive skills	Sheets of paper, 14 pencils/pen, sticks, big paper	*e-Course*, zoom platform, jamboard video, power point
4	Leadership and assertive communication	• To Explain the characteristics of a good • leader and leadership; • To practise speaking • skills in front of a large • group; • Tto practise assertive skills	Students idetify characterist ics of a good leader and leadership, and practise speaking assertive skills	Sheets of paper, 14 pencils/pen, sticks, big paper	*e-Course*, zoom platform, jamboard video, power point
5	Seeing from a different perspective and build healthy relationships	• To learn about the types of bullying • To develop empathy for students who have been or are bullied; • To practise healthy relationship behaviours by giving praise.	Students learn about bullying, develop their empathy for student who have been or are bullied, and practise healthy relationship	role play, comic book, digital tools (computer, LCD monitor), paper, sticky paper,	*e-Course*, zoom platform, jamboard video, power point
6	Student effect and their response in conflict	Recognizing their influence and how to start changing their own behavior and respond to situations in a more positive way	Students learn in responding conflict and use their influence to change others behaviour in a positive ay	Large sheets of paper, tape for positive behavior card, markers, positive behavior card	*e-Course*, zoom platform, jamboard video, power point

7	Connecting changes which were driven by students' behaviour	• To validate their positive behavior card • To discuss students' experiences in practicing positive behaviors to change the school environment	Students validate their positive behavior cards on the basis their experiences .	Video 'One Child Can Make Changes' (https://www.youtube.com/watch?v=G-PeeZ6v-iNgY), positive behavior cards.	*e-Course*, zoom platform, jamboard video, power point
8	Developing an anti bullying agreement	• To make an agreement on what one can do and cannot do • To create a U-report survey to get responses from all students to a commitment which is made.	Students pread positive behaviour by making an agreement among all students	Posters, flipchart white board positive change behavior cards, U-report	*e-Course*, zoom platform, jamboard video, ppt, U-report
9	Developing role play to increase students understanding on bullying issue	To play and develop role play in order to increase their understanding on bullying issue on the basis of students' experiences	Students understand ing and practising bullying circle.	Story list	*e-Course*, zoom platform, jamboard video, power point
10	Making the action bigger by involving all student	• To plan/organize students participation and social relations/ relationship • to communicate effectively and develop a critical thinking • to develop anti-violence and bullying	Students organize other students to participate and take bigger actions in anti violence and bullying movement	Positive behavior sheet, markers/ pens/pencils /stabilo for activities	*e-Course*, zoom platform, jamboard video, power point
11	Visi for Roots Day	• To create a vision and theme for Roots Day • To discuss and decide what Roots Day will be like	Students discus the vision will be choosen and used in Roots Day	Examples of colorful flyer, signed blank paper, colored markers/pen/ pencils	*e-Course*, zoom platform, jamboard Video, ppt
12	Strengthen the message through hastag	• To initiate action visible to other students • to explain the Roots program for the implementation of Roots Day at school • to explain the Roots program in 2-3 sentences when friends or other people ask	Students gauge the roots program and make it visible to other students	Paper color, markers, glue	*e-Course*, zoom platform, jamboard Video, ppt

13	Preparing for Roots Day	To continue the students' efforts to make the student initiatives/actions visible to other students To practise role play and other group activities To share 'bracelets' or appreciation with friends who are approached with positive behaviour.	Students practise role play and other group activities to make their activities from the first to twelth meetings visible to others students.	Roots Day schedule card, goodie bags, posters, tape, markers, papers, bracelet or pin,	e-Course, zoom platform, jamboard video, power point
14	Roots Day	• To announce the Roots Day • To declare positive behaviour to prevent bullying at school • To demonstrate agent of change activities from the first week • To promote positive behavior for all school community members, including students' parents	The students who are acting as agent of change form committees to organize all activities to meet all the aims of the Roots program.	Declaration paper, stage, sound, and other media to support the event, offline performance	*e-Course,* zoom platform, jamboard video, power point, online performance
15	Discussion and evaluation of *Roots* program	To discuss the continuity of the program with the head of school and teachers	Students tell of experiences during the Roots program • Write down ideas about what students will do for the rest of the semester and after the program ends • Discuss the next plan	Paper, room meeting in school	*e-Course,* zoom platform, jamboard video, power point

Source: Analysed data, 2021

Source: Ministry of Education, Culture, Research and Technology: Powerpoint Presentation, 2021

A facilitator has a responsibility to create pleasant and supporting circumstances to keep enable the participants to enjoy, learning and absorb the knowledge easily. Facilitator must not only have the capacity and ability to learn about the substance of the program themselves and retain it but be able to transfer all this knowledge technically in the study room or online. Facilitators can make the environment fun, safe, and inclusive, by using a variety of facilitation techniques and by being prepare for different difficult emotional situations.

Good facilitation skills are the basis for developing trust, empathy, and tolerance among program recipients on the benefits of the activity. Facilitators, therefore, must facilitate inclusivity, for example, by ensuring that all opinions are respected and that no one excluded. There are various methods of ensuring that all participants have the opportunity to express themselves in any situation and condition and whatever the communication mode is used. The old or traditional or

conventional module (written in a book and provided offline) did used some technological application for some tasks, for example: facebook, U-report,[1] power point (ppt), videos, et cetera.

The usage of technological application now dominates anti-bullying training and this has been developed by the Ministry and Unicef for this purpose because of the Covid-19 pandemic. The Ministry has developed an e-course; its content was taken from the traditional/old/conventional module and modified for use in the online forum. The student and teacher can acces the ecourse through a link which was provided by the Ministry. The development of the e-course was not only to help the student and teacher to learn the module, but also to help students and teachers across the Indonesian archipelago to access the module and its content in any time. Through the e-course, students can learn on their own and the teacher can then explore the students'understanding in meeting, whether the meeting is conducted offline or online.

The Roots training was mostly undertaken by role play, interaction and discussion instead of staff member or facilitator giving speech that a student was expected to listen to. The facilitator must, therefore, check all participants' activities, especially when the participants do group work – encourage them to take turns in presentations, even shy participants.

[1] A bot-based tool for communication by and for young people from UNICEF with 13 million U-Reporters from 76 countries, more than 400,000 from Indonesia. Unicef Indonesia, U-Report Indonesia, Anak muda sebagai mitra yang setara #IniSuaraku' ['Young people as equal partners #IniSuaraku'], Unicef Indonesia (undated). https://www.unicef.org/indonesia/id/report. The website offers useful resources such as U-report's cyberbullying chatbot . For explanation, see 'Tips dan Trik Menghindari Perundungan..' [Tips and Tricks to Avoid...'].

These activities are easily done if training is conducted face to face because barrier that often arise during online learning are no longer relevant. Such impediment are interruption to such as internet connection which frequently occur and have been experienced by national facilitators and teacher facilitators. The offline mode had given the facilitator the ability to reach every participant easily because physical distance was not a problemas bothe learner (fasilitator student) and instructing facilitator were in the same room, and the communication was easily undertaken because facilitators met face to face with the participant. Being in the same room made it easier for the faacilitator to 'reach' a participant psychologically (and to 'read' their responses) as well as physically while at the same time facilitate case of communication and participation by participants. this is much harder to achieve if the training is conducted online for several reasons. First, there is the issue of poor internet connection which hampers reliable communication, sometimes by lagging connection or by simply having lines 'fall out', completely stopping the conversation/meeting. Secondly, there is the issue of communication being impeded by the 'gap' created by only 'virtual' contact where communication can be made more difficult as gesture may be masked, and clues for conversation missed. Thirdly, eventhough we can see the face directly via the monitor, and participant seemed to be in the same space and room but, in fact we are in the different spaces, rooms and locations. Fourthly, participants in online training and people who spend much of their time working online often report how tired they find 'zoom' conference, saying that they take a lot more effort and energy than 'face to face' conference or training (Libby (Elizabeth) Sander and Oliver Baumann, 2020).

As mentioned above, the Roots training mostly was undertaken by doing role play, interaction and discussion instead lecturing by one party and listening by another. When the training was conducted online, there were differences that arose. The paragraph below will explain such differences, using from several meetings.

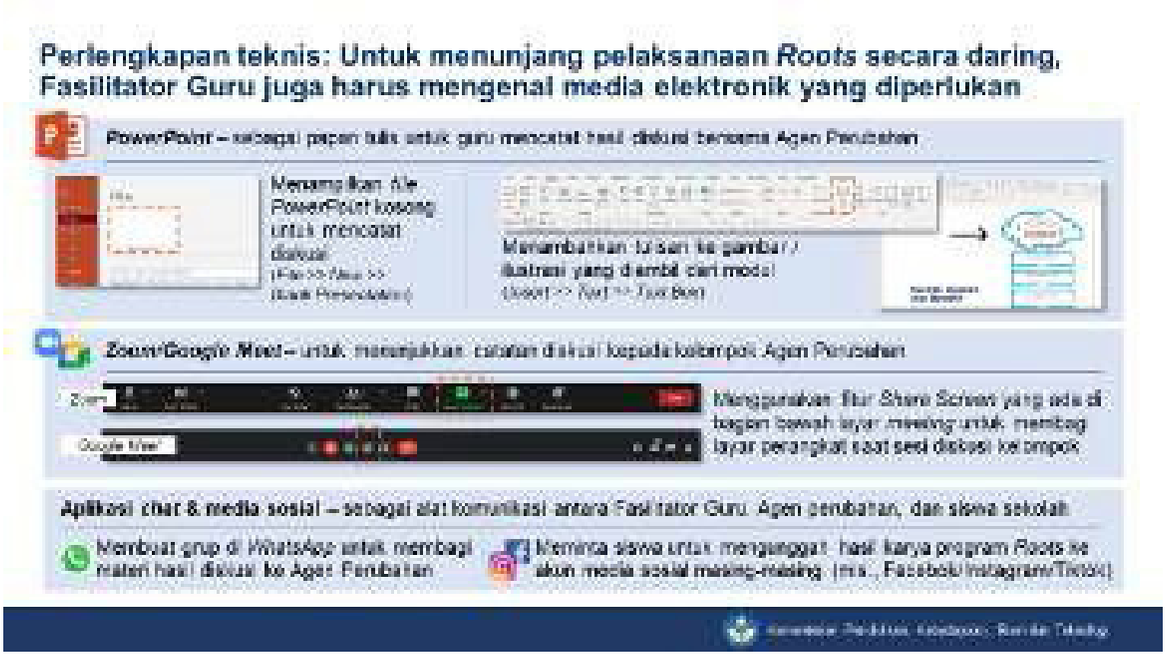
In the first meeting and every meeting thereafter, the facilitator must greet all participants, in this case the teacher facilitators were acting as students-but they will be the real teacher facilitator for students in their own schools. The greeting is just simply a matter of asking about their feelings and asking them to illustrate their feeling by drawing on the paper provided. Using the online mode, the facilitator asks the participants about their feelings and asked them to express to their feeling by using the zoom platform, jumboard and other platforms. So, the facilitators must be familiar with these platforms. At the first meeting and subsequebce meetings, a box for change papers must be provided. In traditional mode, p physical can be provided by using box, however in online mode, it can be replaced by using googleform. Students are asked, "Write down the changes that you want to make in the school regarding interaction between students" ["saya ingin menulis perubahan yang ingin terjadi di sekolah terkait interaksi antar siswa"].

Source: Module of Roots Program for facilitator, 2017

In the first meeting, the facilitator and the students as agents of change make an agreement about the rules that would apply during training. The agreement which must be adhered by all agents of change and is written on a paper and stuck onto the class's wall, something that cannot be done in online mode because we have to write in words on blank paper or create a power point with the words clearly visible for a classroom whiteboard, and facilitators/teachers have to keep it and show it when it is needed. Social media (such as: facebook or whatsapp group) are also used to make it easy for students agents of change to make appointments and for communication, coordination and discussions dealing with any activities in the Roots program.

In the second meeting for example, the activities are designed to increase trust among the selected student agents of change by getting them to better know each other. In the conventional mode, the students talk person to person in the same physical space and then moving from one to another student continuously until all students have had their turn and met every other student in the group/class individually. Unlike the original model the online method offers the facilitator limited space to do this – the only way is by using 'breakout rooms' to allow the teacher facilitator and students to do such activities (talking to an individual person or doing discussion in a group). Inspite of the limited access, it is expected that teacher facilitator can implement this 'getting to know you' activity with their students using either the offline or online mode.

Picture 3
Platforms as technical tools guide



Source: Ministry of Education, Culture, Research and Technology: Powerpoint Presentation, 2021

In the sixth meeting, the activities involve students recognizing their influence on others and their discovering how to start changing their own behaviour and be able to respond to situations in a more positive way by using positive behavior card. The material used for this is the 'positive behavior card'. The concept of using the positive behavior cards is to make students focus on what they are feeling and then write it down to create something that can be used to help others. The positive behaviour card activity is a successful activity in many schools because students enjoy having the opportunity to move around the classroom and look at the answers. Given that the training was conducted online, the national facilitator applied an explanation of how to use online platform, such as: zoom, jamboard, power point et cetera. To achieve activity and meet the same goals.

In the ninth meeting, the national facilitators introduced the bullying circle. It involves eight (8) characters or roles. Introducing the bullying circle will help the teacher facilitator and the students understand the various roles in bullying situations (ncluding that of victims, perpetrators, bystanders or 'onlookers'). This activity involves not just playing a role or roles, but the teacher facilitator and the students also have to know the feelings and actions of the characters they play in bullying situations. Understanding about the various of roles is important for the teacher facilitator and their students because ithe increased understanding has a correlation with the effectiveness of bullying prevention programs in schools. In common with other bullying prevention program, the Roots program is designed to change attitudes and behaviour of all students, and it actively encourage prosocial behaviours. In the longer terms, students who are involved in such bullying circle activities can continue to be 'agents of change' among their students peers and in their broader communities. This activity should be monitored by the teacher facilitator to avoid judgment of a student who plays the bully and also to foster respect for each otheramong the members and ensure that they treat everyone the same.

If this activity is conducted offline, the students have freedom and creativity to express their feelings, with their words and gestures supporting their actions. There is emotional and psychological contact among the students as agents of change which will bind them closely together as agents of change to work to make positive change in their schools. This atmosphere or situation is different if the training is undertaken online. The availability of adaptation for online delivery of the anti bullying program has has facilitates the online version on the program. After the training, most of the teacher facilitators have conducted the roots in their school program offline, but they can conduct online training if the pandemic is getting worse. Given the previously mentioned drawbacks experienced in online learning (such as interrupted services, necessity for increased mental effort), teacher facilitators and students have worked most diligently to choose whether using offline, online adaptations of the program or hybrid to maximize its success.

In eleventh, twelth and thirteenth meeting, the activities use social media and internet applications to spread the vision of Roots. Using the online mode, the students use hashtags to gain more followers and to connect with each otherin order to campaign for Roots Day. The facilitator can assist the students when they are making the hashtag because it needs to be thought out carefully so that the words can be heard or read and recognized easily, so that people can be inspired to use it or want to know more. Application such as Instagram, facebook, mozilla popcorn maker, xtranormal.com, photo filters and effects can be used to make the hastag or the Roots Day campaign more interesting and to attract other students. After making a hastag, students undertake activities involving practising how to explain Roots Day to other students at school. If the activities are done offline, the students can approach students at any spot at school and explain the Roots program or ask students about their responses to the Roots program.

In the original program, there is also a challenge to students to give or spread wearing of a special bracelet or pin as a reward for the students who are behaving positively. Given that the training was conducted online, the activities were conducted in a different way by giving the participant various emoticon, such as love heart, smile, thumbs up et cetera. The teacher facilitator was trained to prepare for the Roots Day to be held in the fourteenth meeting. The Roots Day is basically a celebration for the students as agents of change for their work in the previous thirteen weeks. The main activities during the Roots Day are reading of positive change box comments, reading of the Anti-bullying Declaration to the school body and signing of the declaration by all school community members, as well as other (optional) activities such as arts performance (like singing, playing drama, reading poetry, et cetera). The Roots day is more attractive when held offline because all students and others can more easily be involved in this celebration – the more students and school community members involved, the more they are exposed to knowledge on anti- bullying.

Where the training has been conducted online, the Roots Day is organized by the teacher facilitator who is also acting as an 'agent of change'. The participant can express their happiness in celebrating their

achievement; however, it is not lively and excited as the same as offline celebration because they cannot see and meet each other and the broader school community directly. Roots Day is the peak moment/activity of the program however it is not the end of the program. The fifteenth meeting is held to discuss the continuity of the program with the head of school and teachers. On this occasion, the students as 'agents of change' recount their experiences during the Roots program. They can write down ideas about what students will do for the rest of the semester and after the conclusion of the program and discuss a plan for continuing the program.

The aim of the training is to build a bullying prevention system. Therefore, collaboration and coordination among school community members is needed. The training itself has proven successful; however, there are some recommendation that can be made to improve future training. First, the training is conducted online during working hours, as consequence some participants were entirely unable to participate while others could only participate intermittently. Some participants did not focus on the training because they had other activities or office work that occurred in the same time and had to take a priority. Some of them were off camera and were not involved in some meetings and activities. Hence, only some people were able to be involved in every training session from its beginning until its end or in every meeting of the 13-week course. Second, internet connection could be problematic due to its frequent service interruption and/or low quality, indeed it was a barrier to both the trainer and participants being able to join conveniently and continuously. The lack of internet connection made some participants unable to join or they may have to repeatedly rejoin a meeting. In the latter instance they missed parts of the training. This has impacts on their understanding of the program and their implementation of it with their students.

The most impressive aspect of this Indonesian experience to date is the preparation by Unicef of the U-report application. It provides the system to help in the selection of students in selected schools to be agents of change (and other information deal with the rights of the child). The Indonesian Ministry has assisted by providing the material for the teacher facilitator and the student, such as the e-course, the material for power point presentation, the flash cards, the link to access the e-course, et cetera. The aims of providing those materials to all trainers, teacher facilitators and students as agents of change is to ensure that perspective on Roots program and its anti bullying movement is consistent. Indonesian people need to be aware of the danger of bullying, and its ramification for society, and the need for program to address the problem. The policy of the Indonesian government to implement the Roots program is important and needs to be supported by all Indonesians.

CONCLUSION

The effort Indonesian Ministry has shown it commitment to the reduction of bullying in school its adoption of and support for the Roots program. To implement the program, the Indonesian Ministry and Unicef have trained 100 national facilitators as master trainers who then have the responsibility of training selected Indonesian teachers as facilitators. The teacher facilitators then have to train their selected students as agents of change. The training itself has been conducted on the base of the model prepared by the Indonesian Ministry and Unicef. The content of anti- bullying module and its activities can be implemented in three ways, namely: offline, online and as a hybrid depending on a school's situation and condition. The challenge faced by facilitators during the training was poor internet connection/network and teacher facilitator attendance/participation.

By involving teachers and students in this program, it is anticipated that the instances and severity of bullying at school will decrease. It is also expected that the program can and will be implemented at all levels of schools in Indonesia.

REFERENCES

Ambarini, R., Indrariani, E. A. & Zahraini, D. A. (2020), Training and Development Program of School-based Anti Bullying Learning Designed for Early Childhood Education Teachers, paper presented to the 3rd International Seminar on Education and Technology – ISET. Jakarta, 2017.

Andina, E. (2014), Budaya Kekerasan antar Anak di Sekolah Dasar, Info Singkat Kesejahteraan Sosial, Vol. VI, No.9/I/P3PDI/Mei/2014, p.1-10.

Bowes, L. et al. (2019), The development and pilot testing of an adolescent bullying intervention in Indonesia – the ROOTS Indonesia program, *Global Health Action*, vol 12(1): 1656905.

Committee on the Rights of the Child (CRC), Fifth and Sixth Periodic Report of the Republic of Indonesia on the Implementation of the Convention on the Rights of the Child. UN Doc CRC/IDN/5-6. Available OHCHR website: https://tbinternet.ohchr.org/layouts/15/ treatybodyexternal/Download.aspx?symbolno=CRC%2fIDN%2f5-6&Lang=en.

Dinkominfo Kota Pekalongan [Dinkominfo Pekalongan City], Roots, Kurangi Bullying di Sekolah Melalui Agen Perubahan [Reduce Bullying in Schools through Agents of Change], download 9 October 2021 https://pekalongankota.go.id/berita/roots-kurangi-bullying-di-sekolah-melalui-agen-perubahan.html.

Haekal, M., Di Aceh, trauma perundungan dari SD terbawa hingga dewasa [In Aceh, the trauma of being bullied in elementary school carried over into adulthood], The Conversation 26 Oktober 2020 https://theconversation.com/di-aceh-trauma-perundungan-dari-sd-terbawa- hingga-dewasa-147253.

Hamruni (2014), Bullying in Madrasah Aliyah Negeri III Yogyakarta, *Proceedings of the International Seminar of Teaching Excellence & Innovation 'Education Transformation beyond Excellence'* Faculty of Education, University of Malaya Kuala Lumpur, Malaysia, pp. 159–171.

Kementrian Pemberdayaan Perempuan dan Perlindungan Anak [Ministry of Women Empowerment and Child Protection], Profil Anak Indonesia 2020 [Profile of Indonesian Children 2020], Desember 2020.

Komisi Perlindungan Anak Indonesia (KPAI), Bidang Data Informasi dan Pengaduan Kasus [Information Data and Case Complaints] 2020. Data per tanggal [data as at] 31 Agustus 2020 https://www.kpai.go.id/publikasi/infografis/update-data-infografis-kpai-per-31-08-2020.

Ministry of Education and Culture (MoEC), Regulation No. 8 of 2014 on Child Friendly School Policy.

Ministry of Education and Culture (MoEC) Regulation No. 82 of 2015 on Prevention and Overcoming of Violence in the Education Units.

Olweus, D., Limber, & S. P. (2010), The Olweus Bullying Prevention Program: Implementation and Evaluation over two decades' In Shane T. Jumerson, Susan M. Swearer and Dorothy L. Espelage (eds), *The International Handbook of School Bullying*, New York, New York: Routledge. 377-401.

Paluck, E. L., Shepherd, H., & Aronow, P. M. (2016), Changing climates of conflict: A social network driven experiment in 56 schools. Proceedings of the National Academy of Sciences. http://www.pnas.org/content/early/2016/01/02/1514483113.full.pdf.

Limber, S. P., Olweus, D. A., Wang, W. et al (2018), Evaluation of the Olweus Bullying Prevention Program: A large scale study of US students in grades 3–11. *Journal of School Psychology*, *69*, 56–72.

Sander, L. & Baumann, O., '5-reasons why Zoom meetings are so exhausting', The Conversastion, 6 May 2020 https://theconversation.com/5-reasons-why-zoom-meetings-are-so-exhausting-137404.

Saraswati, R. & Hadiyono, V., *Pencegahan Perundungan/Bullying di Institusi Pendidikan: Pendekatan Norma Hukum dan Perubahan Perilaku [Bullying Prevention in Education Institution: Changing Behaviour and Legal Approach].* Jurnal Hukum, Politik dan Kekuasaan (JHPK), 1 (1). pp. 1-12. ISSN 2722-970X.

Undang-Undang Nomor 23 Tahun 2002 tentang Perlindungan Anak (Indonesia) [Law No. 23 of 2002 on Child Protection (Indonesia].

Undang-Undang Nomor 35 Tahun 2014 tentang Perubahan atas Undang-Undang Nomor 23 Tahun 2002 tentang Perlindungan Anak (Indonesia) [Law No. 35 of 2014 on the amendment of Law No.

23 of 2002 on Child Protection.

Unicef Indonesia, U-Report Indonesia, Anak muda sebagai mitra yang setara #IniSuaraku' ['Young people as equal partners #IniSuaraku'], Unicef Indonesia (undated). https://www.unicef.org/indonesia/id/report.

Yaakub, N. F., Haron, F. & Leong, G. C., (2010), Examining the efficacy of the Olweus prevention programme in reducing bullying: The Malaysian experience. *Procedia Social and Behavioural Sciences*, *5*, 595–598.

Yayasan Semai Jiwa Amini (SEJIWA). 2008. Mengatasi Kekerasan di Sekolah dan Lingkungan Sekitar Anak. [Addressing Violence in Schools and the Environment around Children]. Jakarta: Grasindo

https://pekalongankota.go.id/berita/roots-kurangi-bullying-di-sekolah-melalui-agen-perubahan.html https://smartnews.id/kemendikbudristek-tunjuk-sman-6-metro-ikut-program-roots-indonesia

https://www.timesindonesia.co.id/read/news/359043/200-fasilitator-disiapkan-cegah-bullying-melalui-program-roots-di-6-provinsi

Effect of Active Learning Instructional Strategies on Enhancing Student Learning Experience

Edmond WM LAM[1*], Daniel WM CHAN[2], and Jessie KC HO[3]

[1]College of Professional and Continuing Education, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong
[2]Department of Building and Real Estate, Faculty of Construction and Environment, The Hong Kong Polytechnic University, Hung Hom, Hong Kong.
[3]College of Professional and Continuing Education, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

*Corresponding author

Abstract: In these years due to the universalization of technological products and the COVID-19 outbreak in late 2019, teaching-and-learning via online mode has become the dominant trend in tertiary-educating sector. Without face-to-face interactions, e-learning materials and e-databases are considered the most crucial elements in positively-impacting lesson quality and students' learning progress, which aimed at assisting students' learning during online lessons.

The purpose of this research paper can be divided into two directions, which is to examine the functionality of the provided e-learning activities and platforms in terms of enhancing students' academic performance in perspectives like literature-searching and research-learning in the construction sector; while the other is the effectiveness of the e-elements in supplementing lessons and students' understanding on construction-research knowledge.

In order to carry out vivid analysis on relationships between e-learning materials and learning performance, students that studied a specific construction-research-related subject were selected as the investigating group for this research study throughout a semester, which tailor-made e-learning materials with integrating Technology, Pedagogy, Content and Knowledge (TPACK) were uploaded for assisting their learning. Self-administrated questionnaires were also distributed at the end of the semester, questions such as their acceptance and their opinions towards the effectiveness of the e-learning activities were included to collect primary data.

The research observations indicated that even though students did not in contact with e-materials before the lesson, usage of e-materials and technological-teaching tools have still gained students' supports. Students agreed that the tools were effective in assisting their learning, such as explaining complicated concepts with using aesthetically-attractive interactive games and videos.

Other than students' acceptance, e-learning methods have caused positive impacts on students' ability in learning research-based skills in terms of pedagogy. Through studying the e-materials, students showed their capability in applying construction-research knowledge into their assignments and lecture tasks, such as completing professional citations,

2 ELearning Forum Asia 2021

Augmenting the Virtual Environment: Technology – Innovation – Humanity

Online Learning

searching authorized literatures for dissertations, and analyze viewpoints in different perspectives by doing discussions. Besides, the results proved that students' research skills were deeply enhanced, for example evaluating others' viewpoints with evidence, and consolidating construction-knowledge by studying e-materials off lessons.

The above study outcomes illustrated a positive relationship between students' academic performance and the utilization of the materials, which proved that the adoption of appropriate e-learning materials in lessons are also effective in assisting students' study and train their learning motivations, which can further develop students' mindset in long term.

Keywords: ACRL Information Literacy, Construction and Surveying Research, E-learning, Pedagogy

1. Introduction

With the change of the time, mindsets of human being have been evolving in different categories, which significantly improve thinking, understanding and cognizing ability (Heyes, 2012). Recently, experts have been fine-tuning the educating style with new teaching elements to let students learn more effectively. At the same time, technologies have become one of the teaching materials that used for training students' Information Literacy. Stated by Salleh, Halim, Yaacob and Yusoff (2011), students performed better in academic subjects by developing information literacy and critical thinking skills.

1.1 Definition of Information Literacy

Regarding the scenario in this study, "Information Literacy" can be considered as relating to the information usage and selection especially by students. As believed by The Association of College and Research Libraries (ACRL) (2000), "Information Literacy" is defined as the ability of a person that the student can determine when will new information be needed, and whether the student can also able to make use of, decide, obtain and assess the learning materials by considering different aspects and circumstances. Apart from the explanation from the US, Information Literacy specifically for Hong Kong students is also interpreted as the ability to select appropriate information effectively, together with nurturing a positive and innovative mindset in long term (Education Bureau, 2018).

1.2 Success Factors and Inevitable Limitations

A. Success Factors

First is the integration of advanced software during classes, which may be able to facilitate students' learning ability. Currently in universities, professors usually adopt software during lessons to assist teaching, and the use of software can supplement lessons and students' learning in different perspectives. For example, students can participate in online games anonymously, which this event also can encourage shy students to participate, thus enabling all students to learn new knowledge (Hussain and Muhammad, 2008).

Second is students' acceptance towards the new elements. As concluded by Brown, Thomas and Thomas (2014), students were willing to use technological products for learning due to incentives like watching videos or do searching during lessons. Instead of traditional teaching, results showed that technologies have increased students' learning motivation.

B. Limitations

To learn actively, students are encouraged to spend more self-study time on searching online resources, yet a huge cost might be a concern. As estimated, large amount of subscription fee is required in maintaining literature databases (The Duquesne Duke, 2016), which might be unaffordable for small-size institutes and schools.

Another consideration is students' learning attitude. Since interactive learning requires more self-study time and efforts, it is crucial for students to have a sense of discipline during study time. If they do not own a disciplined studying schedule, resources provided will be useless to assist their learning.

2. Pedagogical Concepts and Approaches

Information literacy is considered as a macro-framework of concepts and approaches.

2.1 Four Pedagogical Concepts

(i) Information Creation as a Process: Related to the information selected by experts to deliver a new message by different conveying formats. As explained, information chosen is highly linked with the message, and resources selected might affect its legitimacy (Palm Beach State College, 2021). Students should be able to source relevant literature and produce convincing findings.

(ii) Information has Value: Related to the value and influences of the information obtained, for example its own uniqueness and characteristics. Students should be able to understand the importance and method of doing correct citations and understand about plagiarism (Palm Beach State College, 2021).

(iii) Research as Inquiry: Interpreted as the mindset to continuously brainstorming questions by studying existing knowledge (PALNI, 2021). Students are believed to learn by using the internet and hence develop their brainstorming ability.

(iv) Scholarship as Conversation: Interpreted as the skill to identify essential main points inside literatures and discover other relevant information. Students should know how to access different types of sources and obtain their needs (PALNI, 2021).

The above four concepts are related to information-selection, key-points and knowledge-identification and proper citations. And these elements are able to form an effective teaching and learning structure.

More updated version of pedagogical concepts are found in 2015 with two more elements identified.

(v) Authority Is Constructed and Contextual: It is considered as the extension of the aforementioned item (i) "Information Creation as a Process". Students should be able to select authorized sources from databases, evaluate viewpoints in terms of their stances, or even proposing new ideas.

(vi) Searching as Strategic Exploration: Defined as the ability to evaluate different types of new sources (PALNI, 2021), which is related to item (iv) "Scholarship as Conversation". However, it includes searching-language usage where students should be able to identify details and also type appropriate searching languages to find relevant sources.

As a result, the latest version of ACRL framework has six concepts while the new elements are the extensions set for improving students' ability on sources-selection and usage of searching languages.

2.2 Five Pedagogical Approaches (2C-2I-1R)

(i) **C**onstructivist: This element is related to the students' learning inclination (Relleve, n.d.) defined as a functional learning method (Pritchard and Woollard, 2010). Rather than reacting passively, students are expected to learn actively, like developing their mindsets from their own experiences and off-class activities.

(ii) **C**ollaborative: It is meant as the approach for offering chances to students in cooperating with others (Laal and Laal, 2012) to train their problem-solving and viewpoints-integrating ability, and also raise their lesson engagement.

(iii) Integrative: It aims to teach students to apply previous experiences and knowledge into different scenarios. In order to let students understand complicated theoretical concepts, this approach can offer a better learning experience like linking ideas with real-life cases to train their problem-solving ability (Kiviniemi and Przybyla, 2019).

(iv) Reflective : Reflective approach is related to self-reflection and evaluation where students should have the self-assessing skill by digesting opinions and advice.

(v) Inquiry Based Learning: This element is related to students' learning pattern (Lee et al., 2004). Instead of fixed-answer questions, students should learn new concepts by inspirable activities, like real-life experiments and open-ended discussion time.

2.3 Differences between Pedagogical Concepts and Pedagogical Approaches

Pedagogical Concepts are considered as student-based concepts with their focuses mainly on students' learning ability by creating a basic framework on student learning objectives (Dawes, 2016). On the other hand, approaches are more teacher-based and used as the soft-strategic tools in directing teachers to improve learning methods. Details are theoretically stated to provide adequate room for educators to discuss and brainstorm innovative educating tools (Kapur, 2020).

3. Research Methodology

The College of Professional and Continuing Education (CPCE) of The Hong Kong Polytechnic University (PolyU) has been always valuing the essentialness of research knowledge. Therefore, a study named "Enriching Learning Experience of Construction and Surveying Students with Capstone Projects" was conducted to examine online resources' usage and determine whether e-materials can positively impact students' understanding towards research and dissertations.

In this study, four objectives were set as follows: (A) To explore the Library Databases at CPCE / PolyU in enhancing information searching by students in the construction and surveying field; (B) To develop discussion forums on literature searching for students in the construction field; (C) To design e-learning activities and the resources section to supplement teaching-learning of the research-based subject; and (D) To evaluate the effectiveness of the proposed new subject element on enhancing student learning through integrating technology, pedagogy and content.

This research is believed to be referenceable in improving teaching methods and facilitating students' learning. In order to analyze students' opinions, primary data were collected by creating surveys. Questions were drafted based on the Technology, Pedagogy, Content and Knowledge (TPACK) framework, and the survey was distributed to students studying construction-related programmes at the School of Professional Education and Executive Development (SPEED) taking the subject of SEHS3279 Analytical Skills and Methods. Answer types were set in either Yes-No Response as well as on a 5-point Likert scale (1 = strongly agree; 2 = agree; 3 = no comment; 4 = disagree; and 5 = strongly disagree or 1 = very low; 2 = low; 3 = neutral; 4 = high; 5 = very high.) (Vagias, 2006).

3.1 Development of Learning Objects for Undergraduate Studies

Before lessons, students were taught to utilize library databases by workshops. During the semester, databases that consist of authoritative construction-related literatures extracted from library platforms were uploaded onto the intranet as references to students. Next for the discussion forums, forum and a discussing question were opened to students weekly, and they were encouraged to participate and share their thoughts. It is believed that forums can increase students' interaction, and thus train their collaborating ability. For the resources section, 4 dissertation samples were selected and used for assisting students in doing the Dissertation Clinic (DC). By the use of samples, students can have a vivid idea on

real dissertations. The last learning object is the DC where 20 questions related to different dissertation key-parts and points were posted onto the intranet for students to answer. This event offered a chance for students to self-assess the chosen dissertation samples with a view to examining the effectiveness of e-materials on students' learning process.

3.2 Respondents' Demographics

A total of 158 valid survey forms were received, and details were listed as follows:

Gender	34.18% Female ; 65.82% Male
Programme Studying	27.22% Building Engineering and Management Programme ; 72.78% Surveying Programme
Study Mode	60.76% Full-time mode ; 39.24% Part-time mode
Academic Qualification	62.03% Sub-degree ; 36.08% Degree ; 0.63% Master ; 1.27% No Response
Working Experiences (including Internships)	32.91% No Working Experience ; 18.99% Worked for < 6 months ; 6.96% Worked for 6 to 11 months ; 22.15% Worked for 1 to 3 years ; 6.33% Worked for 4 to 6 years ; 12.66% Worked for > 6 years

4. Data Analysis, Results, and Discussion

In this study, quantitative data-analyzing tools were used for data-analysis, including Descriptive Statistics, and Cronbach's Alpha Reliability Test.

4.1 Reliability Test

With the purpose of measuring the internal consistency of the questions, Cronbach Alpha (α) Reliability Test was adopted to determine the overall reliability (UCLA, 2021), which α > 0.7 were considered as Acceptable; > 0.8 as Good and > 0.9 as Excellent. Results proved that questions were in Good internal consistency as values were above 0.8 (PolyU SPEED – CAHMR, 2021).

4.2 Ways of Active Learning

In this part, students were questioned on the effectiveness of different active learning methods; result generated from SPSS is 0.904, which was regarded as "Excellent".

A. Effectiveness Ranking of the Active Learning Strategies

To start with, results indicated that students were satisfied with the use of active learning methods in classes. As shown in Table 1, the corresponding top five active learning ways are using Examples, using Case Studies, using Videos, playing Interactive Games and connecting Subject Contents to Activities. Results indicated that the active learning methods offered were considered effective. According to Whitton and Moseley (2012), active learning tools can stimulate students' interest, thus boosting up class engagement since interactive tools like videos and games can catch their attention more easily (Shaaruddin and Mohamad, 2017). Analysis reflected that students have fully utilized the interactive tools, and also regarded them as useful self-study materials. To sum up, the continuous usage of active learning events is effective to develop students' learning mindset.

B. Integration of Technological Products into Classes

Next is the effectiveness of using technological products. According to Table 1, mean scores of using

mobile phones, videos and computers were above average.

Table 1 – Effectiveness of the Active Learning Instructional Strategies

Active Learning Instructional Strategies	Mean	SD
Creating field trips	3.79	0.885
Having students do in-class role-plays	3.41	0.951
Conducting in-class group discussion	3.54	0.834
Integrating web-site use into course assignments	3.65	0.814
Creating classroom versions of interactive games (e.g. Kahoot)	4.00	0.880
Conducting in-class polling activities	3.79	0.809
Connecting course content to current events	4.00	0.700
Using self-assessment questions (e.g. Dissertation Clinic)	3.69	0.759
Assessing sample work (e.g. Resources Section)	3.87	0.711
Using case studies to stimulate critical thinking	4.06	0.679
Using examples to consolidate understanding	4.09	0.717
Using videos to enhance understanding	4.05	0.788
Having student presentations	3.54	0.834
Interacting with peers via e-platform (e.g., Discussion Forum)	3.39	1.000
Introducing brainstorming questions in lectures	3.71	0.768
Using mobile phones to assist learning	3.68	0.928
Providing literature to enrich understanding (e.g. Databases)	3.90	0.743

Moreover, as shown in Fig. 1 and Fig. 2, students agreed that technological products are effective in assisting lessons. More than 65% of the students ranked the effectiveness of technological products "Very High" or "High" (66% for Computers in Fig. 1; 80% for Videos in Fig. 2).

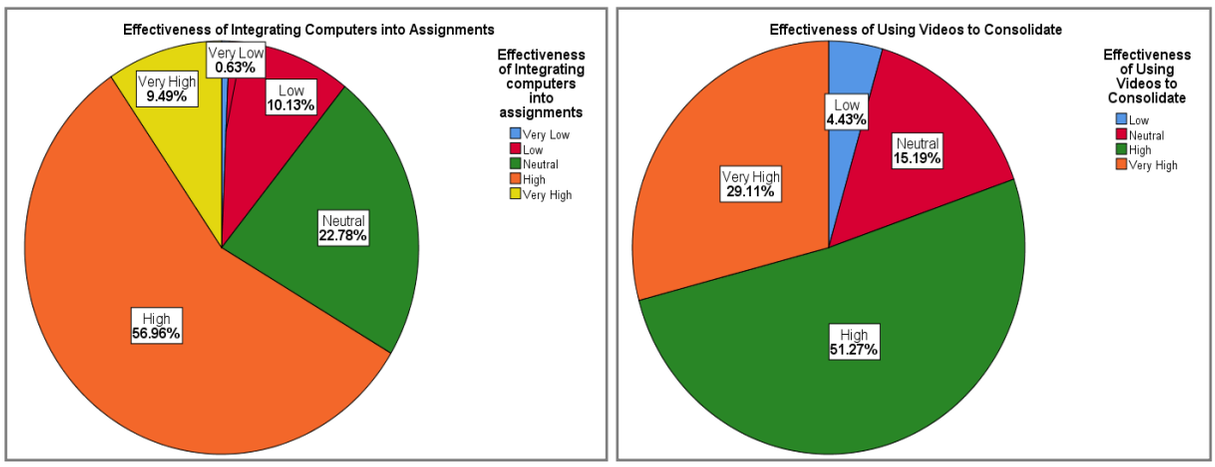


Fig. 1 (Top) Effectiveness of Integrating Computers into Assignments

Fig. 2 (Bottom) Effectiveness of Using Videos to Consolidate

C. Attitude towards Peer-interactive Activities

Thirdly is about students' acceptance towards the change of teaching mode. Mentioned by Tullis and Goldstone (2020), peer-activities are significantly beneficial to students since they provide communicating opportunities for them in classes. Nonetheless, as Hong Kong has been adopting the traditional teaching mode, students tend to act passively during lessons, and may not be able to get used to active learning mode within a short period. In order to analyze students' opinions specifically towards peer-interactions,

results on the effectiveness of in-class group discussions and interactive games were scrutinized. More than half of the students (57%) agreed with the effectiveness of group discussions while 79% recognized games as effective in assisting lessons (Fig. 3 and 4). Results showed a positive change in students' attitude towards peer-events and students also recognized peer events as functional other than normal lecture notes.

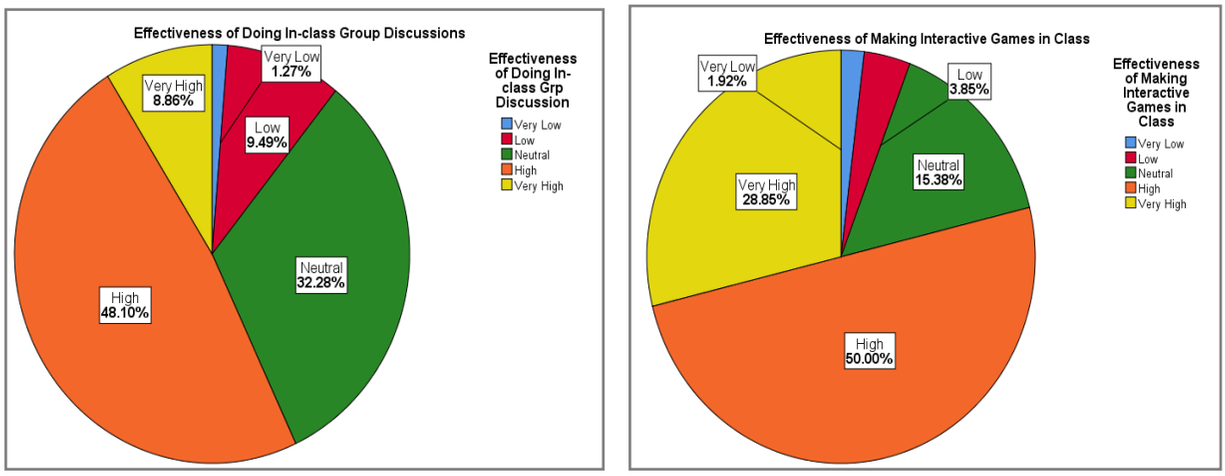


Fig. 3 (Top) Effectiveness of Doing In-class Group Discussion

Fig. 4 (Bottom) Effectiveness of Making Interactive Games in Class

4.3 Impact of Learning Objects on the Pedagogy of Research-based Subjects

The reliability value generated is 0.938, which shows its internal consistency is excellent.

Table 2 shows that the top three impacts with the highest mean score were understanding the importance of respecting original work, evaluating different internet sources and selecting suitable online material for dissertation, ranging from 3.7 to 4. It can be concluded that students have good performance on meeting the objectives set in this study and also in the Pedagogical Framework using the active learning objects.

Table 2 – Impact of Learning Objects on the Pedagogy of Research-based Subjects

Impact	Mean	SD
My knowledge can be enhanced by citations	3.91	0.731
I have the idea on how to do a proper citation in the dissertation by lectures	3.90	0.626
I understand the importance of respecting the original work of the author	4.14	0.721
I have the concept on evaluating the resources on the internet by browsing different scholar websites	4.03	0.727
I know how to choose a suitable online material to become one of the references in the dissertation	4.01	0.689
I am able to recognize keywords of different resource types by the Databases on Moodle	3.98	0.725
I have a basic idea on the research topic for my dissertation after reading the databases	3.91	0.739
I am able to modify the dissertation focus if necessary by making use of the skills taught	3.84	0.667
I am able to brainstorm relevant viewpoints of my dissertation topic through discussion forums on Moodle	3.70	0.854
I acquire the skills to understand the major viewpoints conveyed by author by reading lecture notes	3.89	0.626
I am able to further add new findings to support the original viewpoints introduced by the author	3.80	0.695

My ability to comment on viewpoints of a construction-related topic during group discussions is enhanced	3.74	0.683
I am able to analyze in different perspectives for discussions after attending lectures	3.84	0.671
I can develop focus for my research by studying the databases online	3.83	0.727
I know how to differentiate different types of references	3.86	0.733
I am able to sort out suitable resources by considering my research needs	3.87	0.709

A. Enhance Learning Process by the Adoption of Pedagogical Concepts

Regarding the survey outcomes after introducing new learning objects, students have a vivid understanding of the reason to digest new knowledge from references and know the way to do proper citations, and these items were related to "Information Has Value". Quoted by Cook et al. (2017), the essentialness of this concept is to let students recognize the importance of sources by doing attributions, which enables students to respect copyright issues.

Moreover, students' brainstorming ability was nurtured by the active learning objects, which is related to "Research As Inquiry". Refer to Gultom and Gurning (n.d.), building up students' continuous brainstorming mindset can improve their writing skills. Results show that these activities enable students to modify research scope and brainstorm contents, implying that the new teaching elements are effective to improve learning process.

B. Ability to Conduct Proper Information Identification and Searching

In addition, students were equipped with the knowledge on choosing suitable information for their dissertation by the utilization of materials. As shown by the mean scores in Table 2 related to resources' selection and evaluation, students were able to use library databases and scholar websites to enhance their learning by identifying and adding proper sources into their dissertations.

4.4 Impact of Learning Objects on Understanding Research-related Subjects

The reliability value is 0.934, which shows its internal consistency is considered "Excellent".

According to Table 3, the top impacts of Learning Objects on understanding research-related subjects were developing research-related knowledge, discussing research issues with teachers, enhancing understanding on setting dissertation scope by examples, developing self-study ability and having basic idea towards dissertation topic. Other items were also having a relatively good mean score ranging from 3.4 to 3.8. Results revealed that students are able to understand theoretical concepts in research-related subjects.

Table 3 – Impact of Learning Objects on Understanding Research-related Subjects	Mean	SD
By using the learning objects, I develop the knowledge of research-related issues	3.91	0.683
By using the learning objects, I develop my ability to conduct self-study of the construction topics that I am interested in	3.83	0.697
By making use of the databases, I am able to brainstorm construction-related topics to do research	3.79	0.684
By Discussion Forums, I acquire knowledge about academic researches	3.42	0.909
In-class discussions allow me to enhance my understanding on research-based concepts	3.76	0.690
By discussing with others, I am able to improve my dissertation topics	3.71	0.777

By attending lectures, I have a basic idea towards my dissertation topic	3.82	0.760
The Dissertation Clinic enables me to know how a dissertation will be assessed	3.78	0.723
Through group discussions, I am able to evaluate others' opinions	3.67	0.835
Discussion Forums enhance my critical thinking skills towards analyzing others' suggestions	3.67	0.866
By attending the lectures, I know the way to comment on others' ideas by using scientific evidence	3.80	0.676
Examples in lecture notes enhance my understanding on how to set the scope of a dissertation	3.84	0.686
Discussion forums provide me with an opportunity to exchange opinions with my fellow classmates	3.69	0.871
The knowledge that I learnt in lectures can be consolidated by reading resources in the databases on Moodle	3.78	0.719
The Resources Section enables me to know the development of a thesis	3.81	0.673
Lectures enable me to discuss the research-related issues with the Lecturer	3.87	0.661

A. Understanding the Ideas brought out by Pedagogical Approaches

One important outcome is the fulfillment of the aims stated in the pedagogical approaches. McLeod (2019) proposed that the importance of "Constructivist" is to let students learn new knowledge proactively by active-learning strategies. Refer to the results in Table 3, not only can students master their research understanding and self-study ability, they can also acquire the knowledge of thesis development by the use of resources section, and these items were related to this particular pedagogical approach. Other than "Constructivist", some highly ranked survey results also reflected that students meet the ideas in other pedagogical approaches, for example forming ideas towards their dissertation topic, enhance understanding on setting dissertation scope, and discussing research issues with teachers which are related to Integrative, Inquiry-based Learning and Collaborative approaches respectively.

B. Acquire Knowledge through Discussions

Students are able to acquire knowledge though interactive platforms. They are able to enhance research-concept understanding by in-class discussions and improve their dissertation content by peer discussions. As mentioned, interaction is considered very important in developing students speaking and logical thinking (Relleve, n.d.). And outcomes indicated that students were capable of doing literature searching and brainstorming ideas by using online interactive platforms and discussions, which improved their dissertation quality.

5. Practical and Research Implications

Students have a notable performance in achieving the overall learning outcomes and meeting the objectives set, which is an encouraging phenomenon to discover students' willingness on using active learning strategies during class. Recently, Hong Kong students face difficulties in developing their mindset in terms of creativity due to the traditional teaching mode. By making use of interactive approaches, students' learning interest may be opened up when learning complicated theories for dissertation writing; and for some students having congenital learning disabilities may find it easier to follow in class. García-Carrión et al. (2018) stated that students perform better mentally and physically after adding the learning events, such as improving communicating skills and the initiative to participate. Furthermore, results suggest that active learning methods have become essential during the global COVID-19 pandemic where e-materials become useful for assisting students during online lessons (Kumar et al., 2020).

Technological products are regarded as e-learning assisting tools, which can be considered in future lessons. Since 2007, when the first iPhone was introduced, technology has become a mandatory element in daily

life including teaching and learning. At the same time, youngsters growing within the digital age are capable of well-utilizing electronic devices during lessons. Therefore a proper usage of technological devices can be encouraged in order to boost students' learning interest and their motivation in participating class activities (Erikson Institute, 2016).

However, the effectiveness of online real-time discussion is a concern. Unlike discussion forums, respondents considered break-out rooms not effective as expected. A possible reason may be due to the students' enthusiasm on participating in online discussions (Lima et al., 2019). Unlike in-class discussion, students can only participate in online real-time discussion within an exact period and some students may have difficulties in computer setup, which hindered their participating rate and their motivation (Tiene, 2000).

6. Conclusions

Due to the recent development of technologies and social changes, educating styles have been changing from traditional to a relatively more modern one with teaching-learning elements based on the TPACK framework. The revolution of educating method aims to nurture the younger generation with a more critical mindset, broaden their understanding, and encourage them to express appropriate opinions. This study was carried out to examine the effectiveness of adding active learning methods into tertiary classes together with adopting a half-traditional teaching method where lecture PowerPoint notes are considered as a major teaching material. From the results generated from survey responses, remarkable observations were found. Overall, most of the strategies ranked high to very high, and only a few were ranked low in terms of their effectiveness and students generally accept the usage of active learning methods and technological approaches in class.

Active learning strategies are considered effective in building students' ability in information searching, peer-communication and assist their learning process, which fulfilled the objectives set for the research-based subject. Nonetheless there are some minor adjustments regarding the use of online real-time discussions which can be improved in technological methods. Results from this study would be useful for teachers who are planning to improve the tertiary teaching methods to a more interactive way, with d more active teaching-learning elements for students during lessons, especially during the online teaching periods. Future studies should also consider other viewpoints from the related stakeholders including the educators for the benefit of the students in the new era.

Acknowledgements

The work described in this paper was fully supported by a grant from the College of Professional and Continuing Education, an affiliate of The Hong Kong Polytechnic University.

References

ACRL. (2015). Framework for Information Literacy for Higher Education. Retrieved from http://www.ala.org/acrl/sites/ala.org.acrl/files/content/issues/infolit/Framework_ILHE.pdf

Brown, E. A., Thomas N. J., & Thomas, L. Y. (2014). Students' willingness to use response and engagement technology in the classroom. *Journal of Hospitality, Leisure, Sport & Tourism Education*, *15*, pp. 80 – 85

Centre for Ageing and Healthcare Management Research, PolyU SPEED. (2021). CAHMR Methodology Workshop (Video Clip). Retrieved from https://cpce-my.sharepoint.com

Cook, D. B., Greene, J. D., & Swift, A. (2017). Information Has Value: A View from Three

Institutions. Retrieved from https://scholarship.claremont.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1059&context=library_staff

Dawes, L. M. (2016). Mixing It Up: Teaching Information Literacy Concepts Through Different 'Ways of Learning'. Retrieved from https://core.ac.uk/download/pdf/188116054.pdf

Education Bureau. (2018). Information Literacy for Hong Kong Students. Retrieved from https://www.edb.gov.hk/attachment/en/edu-system/primary-secondary/applicable-to-primary-secondary/it-in-edu/Information-Literacy/IL20180516E.pdf

Erikson Institute. (2016). Technology and Young Children in the Digital Age. Retrieved from https://www.erikson.edu/wp-content/uploads/2018/07/Erikson-Institute-Technology-and-Young-Children-Survey.pdf

García-Carrión, R., Roldán, S. M., & Campos, E. R. (2018). Interactive Learning Environments for the Educational Improvement of Students with Disabilities in Special Schools. *Frontiers in Psychology*, *9*, pp. 1744

Gultom, E., & Gurning, B. (n.d.). The Effect of Brainstorming Teaching Technique On Students' Achievement in Writing Narrative Paragraph. Retrieved from https://media.neliti.com/media/publications/221746-the-effect-of-brainstorming-teaching-tec.pdf

Heyes, C. (2012). New thinking: the evolution of human cognition. *US National Library of Medicine – National Institutes of Health*, *367*(1599), pp. 2091 – 2096

Hussain, I. & Muhammad, S. (2008). Role of information technologies in teaching learning process: Perception of the faculty. *Turkish Online Journal of Distance Education*, *9*(2), pp. 46 – 56

Kapur, R. (2020). Understanding the Meaning and Significance of Pedagogical Approaches. Retrieved from https://www.researchgate.net/publication/345317896_Understanding_the_Meaning_and_Significance_of_Pedagogical_Approaches

Kiviniemi, M. T., & Przybyla, S. M. (2019). Integrative Approaches to the Undergraduate Public Health Major Curriculum: Strengths, Challenges, and Examples. *Frontiers in Public Health*, *7*, pp. 106

Kumar, G., Singh, G., Bhatnagar, V., Gupta, R., & Upadhyay, S. K. (2020). Outcome of online teaching-learning over traditional education during covid-19 pandemic. *International Journal of Advanced Trends in Computer Science and Engineering*, *9*(5), pp. 7704 – 7711

Laal, M., & Laal, M. (2012). Collaborative learning: What is it?. Procedia - Social and Behavioral Sciences, 31, pp. 491 – 495

Lee, V. S., Greene, D. B., Odom, J., Schechter, E., & Slatta, R. W. (2004). *Teaching and learning through inquiry: A guidebook for institutions and instructors*. Sterling, VA. Stylus Publishing

Lima, D. P. R., Gerosa, M. A., Conte, T. U., & Netto, J. F. M. (2019). What to expect, and how to improve online discussion forums: the instructors' perspective. *Journal of Internet Services and Applications*, *10*(22), pp. 1 – 15

McLeod, S. (2019). Constructivism as a theory for teaching and learning. Retrieved from https://www.simplypsychology.org/constructivism.html

Palm Beach State College. (2021). Framework for Information Literacy for Higher Education: Frame: Information Has Value. Retrieved from https://libguides.palni.edu/ilframework/informationvalue

Palm Beach State College. (2021). Threshold Concepts: Framework for Information Literacy for Higher Education: Information Creation as a Process. Retrieved from https://palmbeachstate.libguides.com/c.php?g=314644&p=2101019

PALNI. (2021). Framework for Information Literacy for Higher Education: Frame: Research as Inquiry. Retrieved from https://libguides.palni.edu/ilframework/research

PALNI. (2021). Framework for Information Literacy for Higher Education: Frame: Scholarship as Conversation. Retrieved from https://libguides.palni.edu/ilframework/scholarship

PALNI. (2021). Framework for Information Literacy for Higher Education: Frame: Searching as Strategic Exploration. Retrieved from https://libguides.palni.edu/ilframework/searching

Pritchard, Alan & Woollard, J. (2010). Psychology for the classroom: Constructivism and Social Learning. Routledge, New York, New York

Relleve, C. C. O. (n.d.). Values Education Pedagogy for Z Learners. Retrieved from https://www.dlsud.edu.ph/coed/ncvre/docs/2019/DrChesterRelleve-PEDAGOGYGENZ.pdf

Salleh, M. I. M., Halim, A. F. A., Yaacob, R. A. R., & Yusoff, Z. (2011). Measuring The Effect of Information Literacy on the Undergraduates' Academic Performance in Higher Education. *International Conference on Social Science and Humanity*, *5*, pp. 506 – 510

Shaaruddin, J., & Mohamad, M. (2017). Identifying the Effectiveness of Active Learning Strategies and Benefits in Curriculum and Pedagogy Course for Undergraduate TESL Students. *Creative Education*, *8*(14), pp. 2312 – 2324

Tekkol1, İ. A. & Demirel, M. (2018). An Investigation of Self-Directed Learning Skills of Undergraduate Students. *Frontiers in Psychology*, *9*, pp. 2324

The Duquesne Duke. (2016). Library database fees cost schools millions. Retrieved from http://www.duqsm.com/library-database-fees-cost-schools-millions/

Tiene, D. (2000). Online discussions: A survey of advantages and disadvantages compared to face-to-face discussions. *Journal of Educational Multimedia and Hypermedia*, *9*(4), pp. 371 – 384

Tullis, J. G., & Goldstone, R. L. (2020). Why does peer instruction benefit student learning?. *Cognitive Research: Principles and Implications*, *5*(15), pp. 1 – 12

UCLA. (2021). What does cronbach's alpha mean?. Retrieved from https://stats.idre.ucla.edu/spss/faq/what-does-cronbachs-alpha-mean/

Vagias, W. M. (2006). Likert-type scale response anchors. Retrieved from http://media.clemson.edu/cbshs/prtm/research/resources-for-research-page-2/Vagias-Likert-Type-Scale-Response-Anchors.pdf

Whitton, N., & Moseley, A. (2012). *Using Games to Enhance Learning and Teaching: A Beginner's Guide*. Routledge, New York: Taylor & Francis Group

A Qualitative Analysis on Students' Perspectives towards Online Learning

Maheswaran A/L Muniandy

SK Putrajaya Presint 9(1), Presint 9, 62250 Putrajaya, Malaysia

maxewmahesh@gmail.com

ABSTRACT : With the pandemic COVID-19, online learning had become a new norm of learning. Though online learning used to be a common practice in some higher learning institutes that offer distant learning, the implementation of this learning mode across all education levels only happened since March 2020. Due to the sudden transition of learning mode, most of the students entered the new norm of learning quite unprepared. Despite of numerous reviews and changes implemented in online learning since it was started, there seems limited effort made to understand students' perception about the online learning. Literature studies showed there were both advantages and disadvantages experienced by students participating in online learning in many different places around the world. Therefore, this research aimed to identify the issues faced by Malaysian students in online learning and the impact of these sessions to them. Qualitative research design was selected and data from samples were collected through the in-depth interview method. Samples from both primary and secondary school students expressed the issues such as technical interruption, difficulty in staying engaged in the lesson and lack of comfort. In terms of the impact, health and work efficiency were expressed as the students' main concern. Future study in the similar scope is recommended to be conducted with multiple research approach to gather more in-depth insights about online learning in Malaysia.

Key words: Online learning, students, interview, issue, impact.

Unika SOEGIJAPRANATA
Talenta pro patria et humanitate

eLearning Forum Asia

UNITED BOARD
FOR CHRISTIAN HIGHER EDUCATION IN ASIA
Since 1922

SYMPLICITY

PeLS
Philippine eLearning Society

eLearning Forum Asia 2021

Augmenting the Virtual Environment:
Technology – Innovation – Humanity

Online Learning

INTRODUCTION

Research Background

Learning is defined as a process that can be performed through multiple approaches. For example, cooperative learning, learning based on VARK model or learning individually. However, at the present condition of the COVID-19 pandemic, learning has taken the approach of online learning activity. Online learning is an approach that involves interaction between the teacher and student remotely. In this process, students learn from their own homes while the teacher teaches from another location other than the classroom (Sinecen, 2018). Online learning implemented in synchronous and asynchronous. In the synchronous learning process, the learning occurs live which means the teachers and students meet virtually at the same time. Some of the learning modes used are video conferencing, telephone conferencing,

live discussion or live lecture (Simonson, Smaldino, & Zvacek, 2014). The asynchronous learning process is defined as the learning session occurs according to each individuals' timetable and availability. Teachers and students do not have to be involved in the learning process simultaneously. The teachers may provide learning materials and comprehension practices to allow the students to study the material and answer practice questions at a time suitable for them. Examples of asynchronous learning materials are learning modules, pre-recorded lesson videos, teacher's notes and databases such as e-library (Clark & Mayer, 2016).

Implementation of online learning is actually not a new concept because online learning started in certain countries as early as the 1800s. Even though the internet was not developed in that era, Isaac Pitman taught a group of students short-typing through letters in the year 1840. In the year 1924, the first test machine that can allow students to perform self-assessment was launched. Online learning then developed further until live learning sessions were implemented in the early 2010 (Stephenson, 2018). But all these online learning activities involved long distance courses in higher education institutes.

Online learning at the school level started to gain more attention after the COVID-19 outbreak in the entire world at the beginning of 2020. The health crisis forced education systems all over the world to search for ways to replace face-to-face teaching. It was aimed at solving the problem of students' learning interruption after the school closure. Since school closure all over the world occurred at a sudden rate and under emergency conditions, online learning functioned as a recovery strategy to ensure learning is continued. The new norm of learning has its own differences compared to face-to-face learning. All the communications and activities migrated to digital forms including the assessment and marking (Pokhrel & Chhetri, 2021). Online learning in Malaysia has been implemented through various platforms by various institutions. But one platform used by almost all the schools in Malaysia, including the private schools is Digital Educational Learning Initiative, DELIMA. Applications from three technology giants, Google, Microsoft and Apple were integrated in the operation of DELIMA in helping the teachers and students perform online learning (Selvanathan, Hussin, & Azazi, 2020). One of the main characteristics of DELIMA is diversified application and services for education service providers. For example, digital textbooks, google classroom, show my homework, seneca learning, quizizz, quizlet bitsize and zoom (Perumal, Abdullah, Parthasarathy, & Jayabalan, 2020). Therefore, online learning in Malaysia performed widely since the movement control order started.

Research Problem

The decision to start online learning and transition to the learning mode occurred very quickly. Unexpected spike in COVID-19 cases resulted in emergency school closures whereby students or teachers did not have adequate preparation. The impact was observed more among the students in terms of using mobile apps or troubleshooting computers. Since there is no opportunity for a faceto-face meeting or consultation, students were not able to express the challenges they experience during the online lessons and find a solution for the issues (Zalat et al., 2021).

The methods and processes used in online teaching and learning sessions were modified and improved since the implementation began in March 2020. Teachers started to use more of the DELIMA applications and teaching schedules were rearranged by considering students' accessibility to devices (Ismail et al., 2020); (Chung & Mathew, 2020). However, there are not many studies conducted to analyse issues faced by students. Most of the research discussed challenges of online learning from a general perspective. Therefore, literature provides very limited or no insight on students' perceptions about online learning. The present study is expected to close the existing gap by collecting and analysing students' perspective about their online learning experience.

Research Objectives

1. To identify current issues faced by Malaysian students in online learning
2. To analyse impact of online learning towards students' learning process

LITERATURE REVIEW

Introduction

The research aim is to understand the current issues faced by Malaysian students in online learning and analyse the impact of the issues in their learning process. Therefore, literature review on the general population's view about online learning. Findings from the literature review are presented from two different perspectives as presented below.

Effectiveness of Online Learning

Past research about online learning strategies showed this approach brought many benefits to the school community. Farrell and Brunton (2020) found that online learning increases students' participation in the learning activities. This finding was accompanied with factors such as peer, type of online learning module used by the teachers and flexibility level while learning from a comfortable place. These findings imply online learning still can be equally effective as face-to-face learning if the learning material can be modified to suit distance learning style. Besides this, every student attending online learning sessions from the comfort of their own house is surrounded by a calm environment. Thus, their participation in the learning session increased. Similar views about online learning reported in the studies by Khan, Egbue, Palkie, & Madden (2017), Martin & Bolliger (2018) and Gillett-Swan (2017).

According to the research conducted by Baúarmak & Mahiroglu (2016), online learning is advantageous for students because there are multiple facilities available for them to complete the learning without many obstacles. Research towards the learning process of science and technology showed students achieved learning objectives successfully because they are supplied with complete information through video sharing and caricature animations. Therefore, the students are able to learn effectively just as face-to-face learning. These findings aligned with the outcomes reported by Ferri, Grifoni, & Guzzo (2020) who identified online learning created more opportunities for the students to express their talents.

Online learning strategy found to be beneficial because teachers gain the opportunity to use various types of tools compared to the face-to-face learning mode. Gregory & Bannister-Tyrrell (2017) listed a few learning tools and explained the advantages of using those tools. Online discussion forum was identified as a tool that motivates students to ask immediate questions during the lesson. At the same time, the students have the opportunity to give feedback to their peers through the online discussion forum. Based on the review of this work, online learning can help to prevent students from waiting a long time before getting feedback for their inquiries.

Online learning increases students' interaction through the applications that can encourage them to participate in the class discussion. As reported by Wang & Tahir (2020), Kahoot received wide acceptance among the students when the discussion session began. Kahoot is a game-based learning program that can effectively assess students' understanding. This online learning tool is suitable to be used in any subject because of the feature that allows teachers to construct various types and levels of questions. Based on the research conducted by Licorish, Owen, Daniel, & George (2018), using Kahoot in online teaching and learning had increased students' achievement because they received faster and simple feedback and helped them focus more on the content being taught in the class.

The factor of ease of mobility created an advantage for online learning because students acquire access to the lesson content in multiple ways. This is because learning tools and materials are available in the form of mobile applications and other devices besides the personal computer. Students have the opportunity to upload their work without much hassle. The advantage of mobility of Google classroom was discussed by Heggart & Yoo (2018). Based on the findings in this study, interaction between the teacher and the students increased because teachers are able to assess students' work and send feedback of the work in a short period of time. The research findings also showed teachers do not face any difficulties in students acquiring understanding at different paces. With the application of Google classroom, the teachers are able to extend interaction on a one-to-one basis with their students. Nanthinii (2020) found that mobile applications provided by Google classroom increased students' understanding, provided an interactive learning environment, created ease of assignment submission and obtained the opportunity to view and hear the teacher's instructions multiple times.

Review on the past studies about online learning showed facility, skills and strategies used are in alignment with the current curriculum in Malaysian schools. This is because learning in Malaysian schools in this era is focused on inquiry-based learning that encourages students to explore the concepts related to each topic being taught. Online learning allows the students to acquire unlimited information that can facilitate inquiry-based learning. Researches conducted by Laksana, Dasna, & Degeng (2019) and Andrini (2016) supported the effectiveness of online learning towards inquiry-based learning. Besides this, language learning effectiveness increased through online learning because of the flexibility offered through this approach. For example, Malaysian students being ESL learners need more exposure in English. Online learning offers the advantages of interactive learning tools, wider opportunity to discuss and more facilities for the teachers to provide feedback.

Issues in Online Learning

Few past researches identified potential issues in online learning that barricades for effective learning especially in the aspects that require hands-on activities. Kebritchi, Lipschuetz, & Santiague (2017) identified issues in online learning related to students, teachers and the lesson content. Issues such as unable to fulfil expectations occur when teachers are not able to offer quick feedback all the time while conducting online lessons. Other than this, lack of unified preparation among all the students prior to the start of online learning creates obstacles for effective lesson delivery. Without a teacher physically monitoring the learning, not all the students in a class prepare adequately for the lesson. This factor delays the actual lesson planned by the teachers and lesson objectives not achieved. There are some students who feel left out while following online lessons because they cannot interact physically with their peers.

Due to online learning in Malaysian schools still new, students' participation level might consume longer time. For example, the initiative to answer assigned tasks or submitting the task. The numbers of students submitting tasks decreased when learning shifted to online mode because students did not have to explain reasons via face-to-face interaction with their teachers. Based on the research performed by Mahyoob (2020), external factors can create issues in online learning. The research identified irregularities in the speed of the internet in different places as a barricade for smooth online learning. The similar factor was supported in the research by Ismail, Bakar, & Wafa (2020). Their study showed the main challenge for online learning is less satisfaction with the internet service. This issue caused some students to not take part in the online learning activity that requires a specific application.

Lack of sufficient tools to take part in the learning sessions is also one of the external factors that created issues in online learning. Based on the news reported by The Star, students that share devices with other family members seldom attend classes on time. They have to skip some classes since one device is used by more people in the house. Therefore, the timetable of online lessons does not fit into certain students' device availability schedules (Teoh, 2020). This issue could be minor among students in the higher income families compared to the lower income families.

Based on the research conducted by Ilias & Baidi (2020), the technical aspects created issues in online learning. For example, knowledge in using certain computer programs to send online assignments is difficult for students who are newly exposed to the internet of things. These students need assistance the entire time in order to learn the methods of using the same mobile app or computer programs used by their teachers. There are situations where the students are unable to take part in class discussions during online learning. For example, when teachers require students to collaborate through google doc or spreadsheet. Students need technical knowledge to accomplish such tasks. The findings were found to be similar to the findings presented by Zaili, Moi, Yusof, Hanfi, & Suhaimi (2019) whose research showed online learning is not beneficial for all the students.

Review on foreign studies also showed issues of online learning due to technical problems. One such study is by Ngampornchai & Adams (2016) among the Thailand school students. This study showed that despite students having a positive attitude towards online learning, lack of experience in using certain applications and programs continue to become obstacles to achieving learning objectives.

Review on the research done by oleh Sarvestani, Afshin, & Raeisy (2019) among the school students in Iran is another evidence of technical issues being the obstacle for online learning. Findings from this study showed technical issues such as slow internet, no access to electronic resources and often being stuck with password logged out without any assistance for troubleshooting. Based on the research done by Fidalgo, Thormann, Kulyk, & Lencastre (2020) among the students in Portugal, UAE and Ukraine students attending online lessons reported time management issues and lack of motivation to participate in the class activities. Not all the students are able to complete the given online activity within the time period. Due to the difference in the amount of attention given by the teachers in online lessons, some students tend to feel isolated. There seems a disparity in the attention given by the teacher among the students.

METHODOLOGY

Research Design

In-depth interview method is selected to conduct the research on students' perception about online learning. It is categorised as the qualitative research approach that will enable verification of the responses provided by young samples such as school students. Interview research design is a highly interactive method that ensures continuous communication between the researcher and the samples. Therefore, the researcher has the opportunity to facilitate samples in the data gathering process. For example, assistance in clarifying questions or rephrasing questions to ensure samples can provide related feedback. Another advantage of using in-depth interviews as the research design is the capability to track the data collection process because researcher and the samples interact with each other throughout the process.

This design is advantageous for researchers since the task of data interpretation can be done simultaneously while data collection is performed. It is convenient for the researchers to relate the responses provided by the samples and research objectives during data interpretation. By using an in-depth interview approach, the researcher has the benefit of establishing acknowledgement of the issue being studied at high accuracy. In contrast to quantitative research design, using qualitative research design is able to gather reasons and justifications for the responses samples provide. Interview questions will be in an open-ended format which provides a wide opportunity for the researcher and samples to continue question and answer sessions and enrich the data (Cardano, 2020).

In-depth interview method is selected since this method will deliver first-handed data to the researcher instead of waiting for data collection is completed for a certain number of responses. Researcher will be able to control the data amount and quality while collecting the data. The process will be completely under

the control of the researcher thus removing external obstacles such as biased answers or delay in data collection. Using the in-depth interview method offers the flexibility of improving research instrument at any point of the data collection in accordance to the capability of the samples in understanding the questions and providing compatible responses (Nestek, Hui, & Kunkler, 2019).

Researcher ensured the study is conducted based on ethical practices. Prior approval to conduct the study is attained from Malaysian Ministry of Education (Reference: KPM.600-3/2/3eras(3756)). Besides the approval, researcher ensured the participation of samples in this research are voluntary basis and there is no monetary or non-monetary incentives involved in motivating samples to take part in the data collection process (Ravitch & Carl, 2019).

Research Sample/Participants

Samples and sampling techniques used in this study are selected according to the compatibility to the research problem and research objectives. Population of the research is the Malaysian school students since the research purpose is to identify students' perception. Students from both the primary and secondary school will be referred to draw out the research samples. Therefore, selecting samples from student population is the most accurate way of ensuring the data will be suitable for analysis (Ros & Guillaume, 2019).

The sampling procedure selected to conduct data collection is stratified sampling. It is a sampling technique that divides population into a smaller group. Each group is states as a strata. In this sampling technique, strata are created according to the characteristics of the strata. It is also referred as proportional random sampling or sometimes as quota random sampling. Researcher selected stratified sampling technique to conduct the research because the technique allows researcher to acquire sample that will most accurately represent Malaysian student population which is very huge and not possible to survey each member in this population (Hanif, Shahbaz, & Ahmad, 2018). The strata of samples for this study are primary stage 1, primary stage 2, lower secondary and upper secondary. One student randomly selected from these four strata based on the voluntary agreement of the students. The reason to stratify samples into these four categories is the different delivery methods used by teachers during online learning sessions. By stratifying the sample into different categories, researcher will be able to collect diverse range of data. This is because students in each level of schooling might be exposed to different delivery methods during the online lessons.

Data Collection Method/Instrumentation

Data collection will be performed on voluntary basis whereby researcher will send email invitation with consent forms. Students and parents who agrees to take part in the study will be given appointment for a virtual meeting at a selected time. The interview session will be recorded to ensure each information shared by the samples is captured. Research instrument for this study will be an interview protocol. It is divided to three main sections as there are two research objectives to be answered and samples' demographic information to be filled. Section A will capture sample students name, class, numbers of online classes they attend in a week and numbers of offline tasks assigned per week. Questions in section B and C will be structured based on the concepts issue and impact of online learning. The interview questions were submitted to head of department to be vetted prior to the interview session.

Interview protocol

Section A: Demographic information

Name : [Kept anonymous]

Class :

Number of online classes in a week :

Number of online classes in a week :

Section B: Issues of online learning

1. How excited are you about attending the online classes?
2. How frequent you will be completely focused on online learning sessions?
3. Describe the level you are eager to participate in online class discussions.
4. How much are you interested in joining online classes?
5. Are the activities provided in the online classes engaging?

Section C: Impact of online classes

1. Do you understand each lesson delivered to you during the online learning?
2. Compare and describe your understanding in online learning and face-to-face learning.
3. Do you find the online learning schedules align with your day-to-day activities?
4. Did your physical fitness and health level changed after attending online learning?
5. Are you able to complete the homework based on the guidance received during the online learning sessions?

Data Analysis Method

Data analysis is performed by transcribing the recorded responses into a text file. The transcribed information was triangulated to locate themes and subthemes from the responses given by the four samples. Main information outlined in each question was decided as the theme of the results. The procedure involves aligning all the responses for each question and identify the information whether it is similar or different from one another. Similar responses were grouped into one subthemes.

FINDINGS AND DISCUSSION

Demographic characteristics

Summary of the samples' demographic information is presented in table 1 below. Each of the learning levels receive both online and offline activities in a week. The higher the learning level, the more times the students have online learning sessions.

Table 1: Demographic characteristics

Level	Online classes per week	Offline tasks per week
Primary level 1	7	5
Primary level 2	9	6
Lower secondary	10	7
Upper secondary	12	8

Samples' responses for the aspect of issue in online learning is shown in table 2 below. According to the findings, Malaysian students face issues in certain aspects of online learning while they are quite pleased in few other aspects. The findings imply that non-traditional method of learning mostly exciting for the students and they are eager to attend the lesson. This is because the elements games and competitions

excite the students. Findings also showed that students who are isolated at home look forward for online learning sessions to meet their friends. The finding is similar to the information identified in the study by Farrell & Brunton (2020) whom reported students participate actively in online classes and study by Wang & Tahir (2020) that found games like Kahoot increase their attention. Table 2 also highlighted issues such as feeling not comfortable in attending online classes. The result most probably students feel stressed taking the lessons from a static place for a very long time. However, contradicting findings were reported by Khan, Egbue, Palkie & Madden (2017) that students' participation increased since learning from the comfort of their own homes. Technical issues found in the study such as line interruption and background noise were also reported in the past studies such as Ilias & Baidi (2020), Zaili, Moi, Yusof, Hanfi & Suhaimi (2019).

Table 2: Issues in online learning

Theme	Sub themes
Excitement	Games, Meeting Friends, Line interruption,
Focus	Not comfortable, Background noise, No hands-on practice
Eagerness	Wait for surprises, Prepared, Follow through
Interest	Animations, Competitions
Engagement	Difficult to stay long, tiring, Fascinating discussions

Data triangulation results from section C of the questionnaire are summarised in table 3. Based on the results it can be concluded that audio and visuals are significant to create understanding among the students. The effect of online learning only possible to offer benefit to the students when integrated with teaching aides. Similar findings reported by Bauarmak & Mahiroglu (2016) whereby video sharing and caricature animations create impact in the learning. But there are different aspects such as learning tools (Gregory & Bannister-Tyrrell, 2017) and mobile applications (Nanthinii, 2020) reported in other studies.

Majority of the responses for this section of the questionnaire admitted adverse effect of online learning session. This includes both physical and emotional discomfort. Based on the responses provided by the secondary level students, the continuous classes might be overwhelming due to the pre-existing stress of confined at one place. As shown in table 3, independent work while on offline mode is uneasy for students as they do not have a teacher to guide them as in a physical classroom. But in contrast to the current findings, most of the past studies showed favourable impact from online learning sessions. For example, Andrini (2016) and Heggart & Yoo (2018) found online learning is more advantageous than face-to-face learning because students are able to make use of he mobility and unlimited information from search engines.

Table 3: Impacts of online learning

Theme	**Sub theme**
Understanding	Difficult, videos and pictures help, not clear
Schedule	Flexible, Packed, Need more break
Health and fitness	Muscle pain, eye health
Work efficiency	Lost, no instant feedback in offline session

CONCLUSION

Analysis in this study able to reveal findings to answer research objectives. Researcher's intention of identifying Malaysian students' perception about the online learning they have been following for more than a year. According to the findings, there are equally positive and negative issues found in the present online learning sessions. Therefore, online learning has both advantages and disadvantageous similar to any other learning approaches. However, there is apparent adverse of the online learning among Malaysian students since the responses showed problems in understanding, schedule, health and inefficiency in performing the tasks. These results imply online learning in Malaysia needs periodic improvement based on students' feedback. Schools may need to perform reviews on the current methods use in these lesson deliveries. Available time and movement control are the two limitations of this study. Researcher had to limit the numbers of samples to four due to the time constraints. Furthermore, data collection done via video calls faced technical interruptions. Future studies are suggested to be done via mixed mode whereby researchers can collect vast amount of data using quantitative approach and follow up with a qualitative method to increase validity and reliability of the data.

ACKNOWLEDGEMENTS

I am deeply grateful to the MAHESWARAN A/L MUNIANDY for giving me the opportunity to do my research in a wonderful environment.

I would like to express my utmost gratitude to my research mate, Miss. Grace Gayathri for her sincere support, encouragement and advice during my research. It was a great privilege and honour to do my research under her guidance. I also express my warmest gratitude to my colleagues for providing invaluable guidance, suggestions and motivations throughout the course of the research.

Last but not least, I am grateful to my family for love, care and tolerance which made the hardship of writing this research

REFERENCES

Andrini, V. S. (2016). The Effectiveness of Inquiry Learning Method to Enhance Students' Learning Outcome: A Theoritical and Empirical Review. *Journal of Education and Practice, 7*(3), 38-43.

Baúarmak, & Mahiroglu. (2016). The Effect of Online Learning Environment Based on Caricature Animation Used in Science and Technology Course on the Success and Attitude of the Student for Humor. *The Turkish Online Journal of Educational Technology, 15*(4), 119.

Cardano. (2020). *Defending qualitative research.* New York: Routledge.

Chung, E., & Mathew, V. N. (2020). Satisfied with online learning amidst COVID-19, but do you intend to continue using it? *International Journal of Academic Research in Progressive Education and Development, 9*(4), 67-77.

Clark, R. C., & Mayer, R. E. (2016). *e-Learning and the Science of Instruction.* New York: Routledge.

Ferri, Grifoni, & Guzzo. (2020). Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations. *Societies, 10*(86), 1-18.

Fidalgo, P., Thormann, J., Kulyk, O., & Lencastre, J. A. (2020). Students' perceptions on distance education: A multinational study. *International Journal of Educational Technology in Higher Education, 18*(2020).

Gillett-Swan, J. (2017). The Challenges of Online Learning Supporting and Engaging the Isolated Learner. *Journal of Learning Design, 10*(1), 20-31.

Hanif, Shahbaz, & Ahmad. (2018). *Sampling techniques: Methods and applications.* New York: Springer.

Heggart, & Yoo. (2018). Getting the Most from Google Classroom: A Pedagogical Framework for Tertiary Educators. *Australian Journal of Teacher Education, 4*(3).

Ilias, A., & Baidi, N. (2020). Issues on the Use of Online Learning: An Exploratory Study Among University Students During the COVID-19 Pandemic. *Universal Journal of Educational Research, 8*(11), 5092-5105.

Ismail, Bakar, & Wafa. (2020). Online learning challenges during pandemic COVID-19 in Malaysian Higher Learning Institution. *Universal Journal of Educational Research, 8*(12), 7151-7159.

Ismail, N. S., Abu Bakar, N. M., & Wafa, S. W. (2020). Online learning challenges during pandemic COVID19 in Malaysian higher learning institution. *Universal Journal of Educational Research, 8*(12), 7151-7159.

Kebritchi, M., Lipschuetz, A., & Santiague, L. (2017). Issues and challenges for teaching successful online courses in higher education: A literature review. *Journal of Educational Technology Systems, 46*(1), 4-29.

Khan, A., Egbue, O., Palkie, B., & Madden, J. (2017). Active Learning: Engaging Students To Maximize Learning In An Online Course. *The Electronic Journal of e-Learning Volume, 15*(2), 107-117.

Martin, & Bolliger. (2018). Engagement Matters: Student Perceptions on the Importance of Engagement Strategies in the Online Learning Environment. *Online Learning Journal, 22*(1), 205-223.

Nanthinii. (2020). A Study Of Google Classroom As An Effective LMS To Improve The LSRW Skills Of ESL Learners. *International Journal of Scientific and Technology Research, 9*(6), 1116-1120.

Nestek, Hui, & Kunkler. (2019). *Healthcare stimulation research: A practical guide.* New York: Springer.

Ngampornchai, A., & Adams, J. (2016). Students' acceptance and readiness for E-learning in Northeastern Thailand. *International Journal of Educational Technology in Higher Education, 13*(34).

Perumal, Abdullah, Parthasarathy, & Jayabalan. (2020). Online Learning Practices among Primary School Teachers in Malaysia: Adaptive Learning System Framework. *International Journal of Management, 11*(10), 410-418.

Pokhrel, & Chhetri. (2021). A Literature Review on Impact of COVID-19 Pandemic on Teaching and Learning. *SAGE Journals, 19*(2021).

Ravitch, & Carl. (2019). *Qualitative research: Bridging the conceptual.* New York: John Wiley and Sons.

Ros, & Guillaume. (2019). *Sampling techniques for supervised or unsupervised tasks.* New York: Routledge.

Sarvestani, M. S., Afshin, M. M., & Raeisy, L. (2019). Students' Experiences of E-Learning Challenges; a Phenomenological Study. *Interdisciplinary Journal of Virtual Learning in Medical Sciences, 10*(3), 1-10.

Selvanathan, Hussin, & Azazi. (2020). Students learning experiences during COVID-19: Work from home period in Malaysian Higher Learning Institutions. *SAGE Journals, 6*(2020).

Simonson, M., Smaldino, S., & Zvacek, . M. (2014). *Teaching and Learning at a Distance.* New York: John Wiley and Sons.

Sinecen, M. (2018). *Trends in E-learning.* Routledge.

Stephenson, J. (2018). *Teaching & Learning Online: New Pedagogies for New Technologies.* New York: Springer.

Teoh, M. (2020, November 20). Barriers to online learning. *The Star*.

Wang, & Tahir. (2020). The effect of using Kahoot! for learning – A literature review. *Computer and Education, 149*(2020).

Zaili, Moi, Yusof, Hanfi, & Suhaimi. (2019). The factors of satisfaction on e-learning usage among Universiti Malaysia Kelantan students. *Journal of Information System and Technology Management, 4*(11), 73-83.

Zalat, M. M., Hamed, M. S., & Bolbol, S. A. (2021). The experiences, challenges and acceptance of elearning as a tool for teaching during the COVID-19 pandemic. *PLOS One, 16*(3), 85-87.

APPENDICES

INTERVIW QUESTIONS

Section B: Issues of online learning

1. How excited are you about attending the online classes?
2. How frequent you will be completely focused on online learning sessions?
3. Describe the level you are eager to participate in online class discussions.
4. How much are you interested in joining online classes?
5. Are the activities provided in the online classes engaging?

Section C: Impact of online classes

1. Do you understand each lesson delivered to you during the online learning?
2. Compare and describe your understanding in online learning and face-to-face learning.
3. Do you find the online learning schedules align with your day-to-day activities?
4. Did your physical fitness and health level changed after attending online learning?
5. Are you able to complete the homework based on the guidance received during the online learning sessions?

Online Laboratory Work for Herbal Processing

Victoria Kristina Ananingsih

kristina@unika.ac.id

Food Technology Department, Soegijapranata Catholic University

Abstract: Herbal Processing Laboratory Work is a learning activity that aims to give students the opportunity to investigate and apply the theory of Herbal Food and Beverage lectures. This activity was carried out in the laboratory, attended by all students. However, during the pandemic, the laboratory work must be carried out online, so a different method is needed for the implementation of this activity. The stages of the online laboratory work are (1) laboratory work assistance, (2) virtual laboratory work implementation, (3) hands-on of herbal processing conducted by students, (4) herbal product expo, and (5) final assessment. During the laboratory work assistance, an introduction to all the materials carried out is given, namely the processing of *jamu* (traditional herbal drinks), instant drinks, syrups, confectionery, grass jelly drinks, and dry herbal drinks. Each material is explained about the background, purpose, and processing method. This makes students clearer before the implementation of the laboratory work. Furthermore, a video of processing was made using all the technology and equipment in the laboratory. The virtual laboratory work is carried out by watching the video of the processing. In virtual classes, learning is carried out to observe all processing methods, equipment used and process conditions, as well as the qualities of the final product. Students analyze and solve problems from the given case studies. Then, students prepare reports containing background, objectives, method, results and discussion, conclusions and suggestions. From all the topics that have been given, the students choose one topic to make herbal products (hands-on), take a video, and make video presentations at the herbal product expo. The forum was opened to discuss about the qualities of the final herbal products produced by students. At the final stage, a final assessment is carried out in the form of essay and multiple choice questions to evaluate student understanding in the implementation of online laboratory work for herbal processing.

Keywords : online, laboratory work, herbal processing

Introduction

Indonesian Food and Beverage is an elective course in Food Technology Department Soegijapranata Catholic University. This course studies the Indonesian herbal and spices, including their bioactive compounds and health benefits. All parts of the local plants which have functional properties, i.e. roots, rhizomes, stem, leaves, flowers and seeds are explored. Their functions as 'jamu', aromatic and culinary ingredients as well as natural colorants are also studied. The application of Indonesian herbal and spices for making

functional food and beverage also become the contents of this course.

Herbal Processing Laboratory Work is a learning activity that aims to give students the opportunity to investigate and apply the theory of Herbal Food and Beverage lectures. This activity was carried out in the laboratory, attended by all students. However, during the pandemic, the laboratory work must be carried out online, so a different method is needed for the implementation of this activity. The stages of the online laboratory work are (1) laboratory work assistance, (2) virtual laboratory work implementation, (3) hands-on of herbal processing conducted by students, (4) herbal product expo, and (5) final assessment.

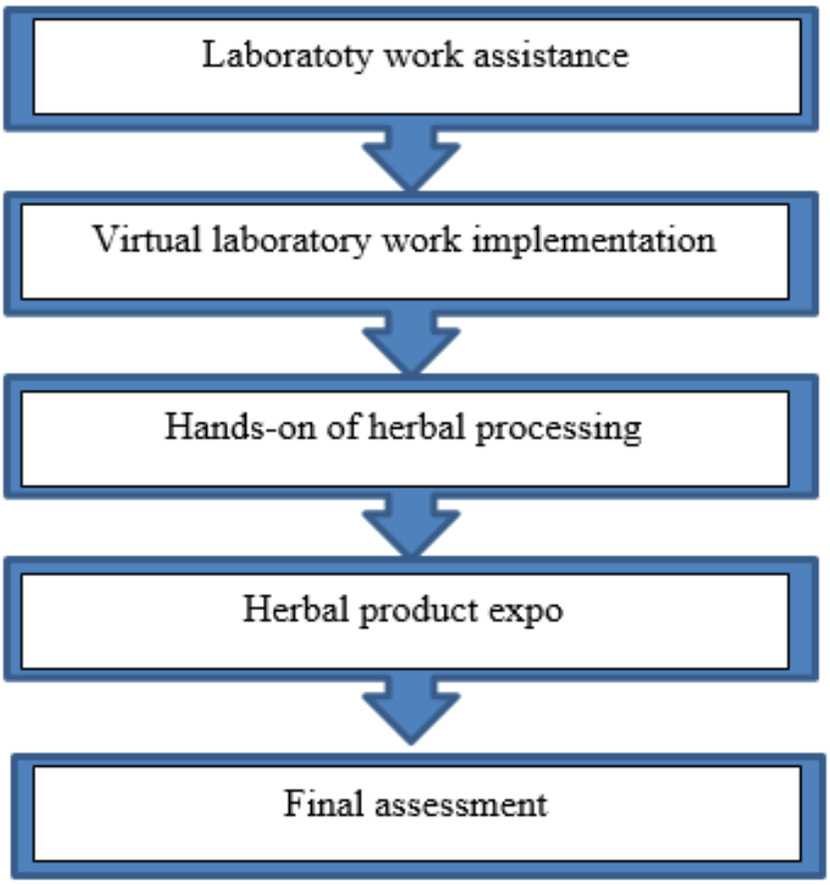


Figure 1. Five stages of the online laboratory work on herbal processing

Laboratory Work Assistance

Firstly, all students have to attend Laboratory work assistance. This activity is aimed to explain the rules of online laboratory work, the whole stages of laboratory work to be followed by students, and the contents of laboratory work. This activity also explain the objectives of herbal laboratory work which are to understand how to produce the herbal products (jamu, syrup, confectionary, ice cream, instant drink, dried herbal drink, and grass jelly drinks) and to know the health benefits of all ingredients.

After attending laboratory assistance, students will understand the whole activities of herbal laboratory work. Students use e-learning in the web supercyber.unika.ac.id to download e-practicum module or other tutorial materials, to upload their assignments, and to join virtual class room.

During the laboratory work assistance, an introduction to all the materials carried out is given. There are 6 topics, namely *Jamu* (traditional herbal drinks), herbal syrup, herbal drinks, confectionery, grass jelly drinks, and dried herbal drinks. Each material is mentioned about the background, purposes, and processing method. This makes students clearer before the implementation of the laboratory work.

Virtual Laboratory Work Implementation

Furthermore, a video of herbal processing was made using all the technology and equipment in the laboratory. The virtual laboratory work is carried out by watching the video of herbal processing. In virtual classes, learning is carried out to observe all processing methods, equipment used and process conditions, as well as the qualities of the final product. Students analyze and solve problems from the given case studies. Then, students prepare reports containing background, objectives, method, results and discussion, conclusions and suggestions.

During this virtual laboratory work implementation session, the students have to discuss about: the results based on case studies (examples: color intensity, texture, aroma, etc), factors influenced the product qualities (temperature, agitation, ingredients, etc), active compounds in the ingredients and its health benefits.

Hands-on herbal processing conducted by students

From all the topics that have been given, the students choose one topic to make herbal products (hands-on), take a video, and make a video presentation. In a group, they have to prepare all the ingredients and to confirm the processing method. They need to buy all the ingredients from the market. Then, they take a video of herbal processing at home. They need to give all the information about the health benefits of ingredients and processing method inside their video.

Herbal product expo

Student presented the video at the herbal product expo. The forum was opened to discuss about the qualities of the final herbal products produced by students. Also, students have to make product innovation based on jamu and herbal ingredients to improve their creativity. Then, this product is presented at herbal product expo. This virtual expo is also attended by the students from other universities and communities who want to know the innovation development of jamu and herbal procesing. Herbal product expo is announced with a flyer which is uploaded in the facebook and instagram. Registration link is opened with the capacity for 300 participants. The video of product innovation of jamu or herbal processing is also uploaded in the youtube by each student (Figure 2).

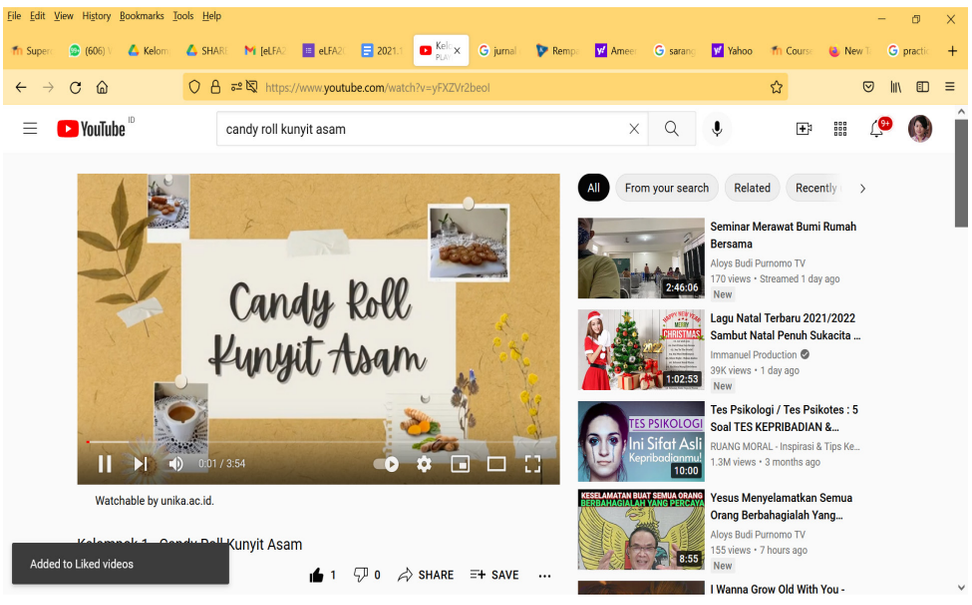


Figure 2. Video of herbal processing uploaded in the youtube

Final assessments

At the final stage, a final assessment is carried out in the form of essay and multiple choice questions to evaluate student understanding in the implementation of online laboratory work for herbal processing. Final assessment is conducted by using quiz platform at e-learning web supercyber.unika.ac.id. Assessment is also given from the final reports, which are introduction: background, literature review and purposes (15 points), material and methods (10 points), results (10 points), discussion (45 points), conclusion and suggestion (10 points), references (5 points) and appendix (5 points). Furthermore, students have to write e-book related to the topic which is already presented at expo session. This book contains health benefits of all ingredients and processing of herbal products. This e-book will be published by Soegijapranata Catholic University publishers to give the information for the community.

Conclusion

Online Laboratory Work for Herbal Processing can be implemented with several activities to improve students' knowledge and skills during pandemic. The stages of the online laboratory work are (1) laboratory work assistance, (2) virtual laboratory work implementation, (3) hands-on of herbal processing conducted by students, (4) herbal product expo, and (5) final assessment. Students' innovation in processing of herbal products can be improved through this online Labolatory Work.

Utilization of Video as a Communication Tool in School Reputation Management Activities during the Covid-19 Pandemic Period in Semarang

[1]V. Ananda A. Permatasari and [2]Rotumiar Pasaribu

[1]vincentia.ananda@unika.ac.id, [2]rotumiarpasaribu@unika.ac.id

[1,2]Communication Studies, Law and Communication Faculty, Soegijapranata Catholic University, Semarang, Indonesia

Abstract: The Covid-19 pandemic situation has brought a crisis impact in every life aspect, education is one of them. Pembelajaran Jarak Jauh (PJJ) is an effort to deal with the current crisis. School unpreparedness and various obstacles that arise will produce a new crisis for schools. Improper management will threaten a negative reputation in the future. To improve the reputation of the school, it is necessary to build a sense of public trust, one of which is the dissemination of positive information from school. In a pandemic situation, the ability of schools to carry out PJJ to the maximum is an achievement that will improve the reputation of the school in the future. In addition, the positive message disseminated by the school in this urgent situation will increase public confidence in the school. Thus, this community service activity aims to help manage school reputation by making videos that contain positive content about the implementation of PJJ in private schools in Semarang City. Positively packaged information will create public trust and improve the school's reputation in the future. This is because the reputation for private schools is one of the important things to survive as a school institution.

Keywords: School, Crisis Management, Pembelajaran Jarak Jauh (PJJ), Video, Pandemic

2 ELearning Forum Asia 2021

Augmenting the Virtual Environment: Technology – Innovation – Humanity

Online Learning

INTRODUCTION

Since the implementation of Pembelajaran Jarak Jauh (PJJ) or familiar called as electronic learning as an effort to reduce the spread of the COVID-19 outbreak in Indonesia, for one month the Komisi Perlindungan Anak Indonesia (KPAI) received a total of 213 complaints related to teaching and learning activities which called as Kegiatan Belajar Mengajar (KBM). A number of these complaints include expressing problems about not all schools being able to carry out online-based learning, there are still teachers who are technologically savvy, uneven access to technology from students, unpreparedness of parents to become teachers for their children, as well as technical obstacles such as difficulty in accessing signals and spending. high internet quota (CNNIndonesia, 2020).

In the complaints received by KPAI, the most complaints came from Central Java Province and senior high school students. Semarang as the capital of the province certainly cannot be separated from this problem. As an urban area, it does not mean that there are no problems with the availability

of facilities and the implementation of online learning. This is related to not only technical and facility constraints but also the implementation of a full curriculum and learning model implemented by each teacher. Various unpreparedness and obstacles that arise can have an impact on organizational performance and produce negative results, which will then result in a crisis condition for school institutions. In the perspective of Public Relations, a crisis is understood as an event, rumor, or information that has a bad influence on the reputation, image, and credibility of the company. Many companies think that the Public Relations crisis will only attack large companies, even though the crisis can attack anyone, be it individuals, organizations, or companies, anytime and anywhere (Purwaningwulan & Maulin, 2013).

One of the threats that a crisis situation will cause is the loss of the school's reputation. To maintain reputation, the value of public trust must be increased. In the case of PJJ conducted by private schools in Semarang, based on research conducted by previous authors in June 2020, it was found that from two private high school schools in Semarang City, there were no significant obstacles from students in implementing PJJ. Challenges arise from teaching teacher personnel who are required to provide a variety of media and learning methods. This is to support students not to get bored in the online learning system that cannot meet face to face. Another problem that is almost the same experienced by schools is students' objections to tuition fees/SPP and student activity fees in full because there is no learning and student activities as usual.

Implementation of online learning is the best alternative in the current mandatory distance situation. With all the risks and consequences, schools still have to implement them so that the learning process for students can be carried out. This is in line with Ali Murfi, et al. which states that based on the results of the World Bank report, the Covid-19 pandemic is now threatening and has the potential to make education outcomes worse. The pandemic has had a huge impact on education by closing schools almost everywhere in the world. However, Murfi, et al. adding that it is possible to overcome these shocks, and to turn crises into opportunities. The first step is to successfully address school closures, by protecting health and safety and doing what they can to prevent students from losing learning using online learning. At the same time, countries need to start planning for school reopening. That means preventing dropouts, ensuring healthy school conditions, and using new techniques to promote rapid learning recovery in key areas once students return to school (Murfi & et al., 2020).

Based on the results of the author's research in June 2020, one of the teachers stated that the feeling of boredom due to not being able to meet friends and teachers was one of the things found during the implementation of PJJ. This is certainly another obstacle in the implementation of online learning. The implementation of online learning which still has to be done until the end of 2020 must be a positive forum for students for learning (Voaindonesia, 2020). Thus the learning process can be carried out optimally. On the other hand, school readiness in implementing online learning is one of the added values for schools in crisis management during the Covid-19 pandemic.

In this situation, information about the implementation of online learning carried out by private schools is a step to respond to the threat of crisis in public assessments. The public needs to know the school's achievements in overcoming the impact of Covid-19 through online learning that has been maximized. With the dissemination of information about the ability of schools in implementing PJJ optimally, it will build the reputation of the school in the future. A good reputation certainly increases public confidence in the school. According to Carfing's statement that reputation and trust are everything (Gasing & Suryanto, 2016), reputation is an asset and wealth of school institutions in particular. Especially for private schools, the issue of reputation is a competitive advantage.

In maintaining and improving the reputation of schools, it is necessary to have consistent and comprehensive publications through the media. Procurement of video media is one of the elements of communication so that the delivery of information runs effectively. According to Juhji, et al. This is because the school as an institution needs to establish communication with the public. School-community relations require communication media as a medium that supports school-community communication.

Further stated Juhji, et al. One of the various types of media mentioned is video as an indirect medium that can be used as a liaison between internal and external parties (Juhji & et al., 2020). Moreover, information content packed with positive stories will create public trust and have a positive influence on the public.

The criteria for measuring reputation based on Fortune (1985), Fombrun (2000) and Helm (2005) are very similar, and are divided into two main areas, namely Product quality (including value for money, credibility of advertising claims, innovation, and leads to company success, financial performance , etc.). And: corporate behavior (treatment of employees, customer orientation, commitment to charitable causes, management). So reputation is not just about what the company produces, but what it feels like strategically, socially, morally, intellectually (Simpson, 2011).

Schools as educational institutions need to maintain a good reputation so that people continue to believe in that good reputation. One form of public or community trust regarding the good reputation of the school is for students to continue to believe and believe in continuing to study at the school, parents continue to entrust their children to receive education at the school and even entrust the selection of the school as a place to study. is the right decision. In addition, for schools with good reputation, it can also be seen in the increase in the number of students every year. Regarding the ability of schools to handle the impact of Covid-19 on the implementation of PJJ, it is necessary to provide information about the implementation of PJJ by private schools, especially in giving positive messages containing the quality of service products and institutional behavior to the wider community. So the formulation of the problem in this service is "how is video used as a communication medium in school reputation management activities during the Covid-19 pandemic in Semarang City?"

METHOD

A. Activity

This service activity is carried out using the following methods:

1. Classification of Video Material

   Before making the video, the service team determines in advance the content of the material to be compiled.

2. Video Material Collection

   The content of the video that has been determined is then normed to service partners so that they can then produce material.

3. Video Material Creation

   The video material was obtained from documentation of the implementation of PJJ from private schools and testimonies of PJJ actors, namely teachers and students.

B. Related Parties

In every activity held, several parties are involved, such as:

1. School Leaders/Principals of Daniel Creative School and Theresiana Semarang High School
2. Teachers/Teachers under the auspices of Daniel Creative School and Theresiana High School Semarang
3. High School students Daniel Creative School and Theresiana Semarang
4. External public of SMA Daniel Creative School and Theresiana Semarang

RESULTS OF SERVICE AND DISCUSSION

This community service activity is carried out in several stages, namely video material classification, video material collection, and video making. The making of a campaign video for the implementation of Distance Education conducted by private high schools involving school institutions and community service teams is described as follows:

A. Activity

The making of this service video aims to provide information to the public about the implementation of Pembelajaran Jarak Jauh (PJJ) as a quality product service carried out by schools and is expected to have a positive impact as a form of school concern for students who experience boredom due to online learning. On the other hand, it also provides information to the public about the success of schools in implementing KBM in this Covid-19 pandemic era. Thus, video material needs to be classified in order to fulfill these objectives.

Based on the objectives to be achieved, the video material chosen is testimonials from online learning implementers. These testimonies come from students and teachers as the direct implementation of PJJ and school leaders as the institution that administers PJJ.

B. Video Material Collection

After the video material is selected, the video provisions are submitted to the service partner. The video material is collected in two topics, the first is testimonials from school leaders, teachers, and students as well as footage of the implementation of PJJ. The collection of video material was carried out in two events. The first way is to do joint documentation through an online conference application. The second way is by means of self-documentation carried out by service partners.

Figure 1: The Process of Taking Video Materials for DCS and Theresiana High School Students

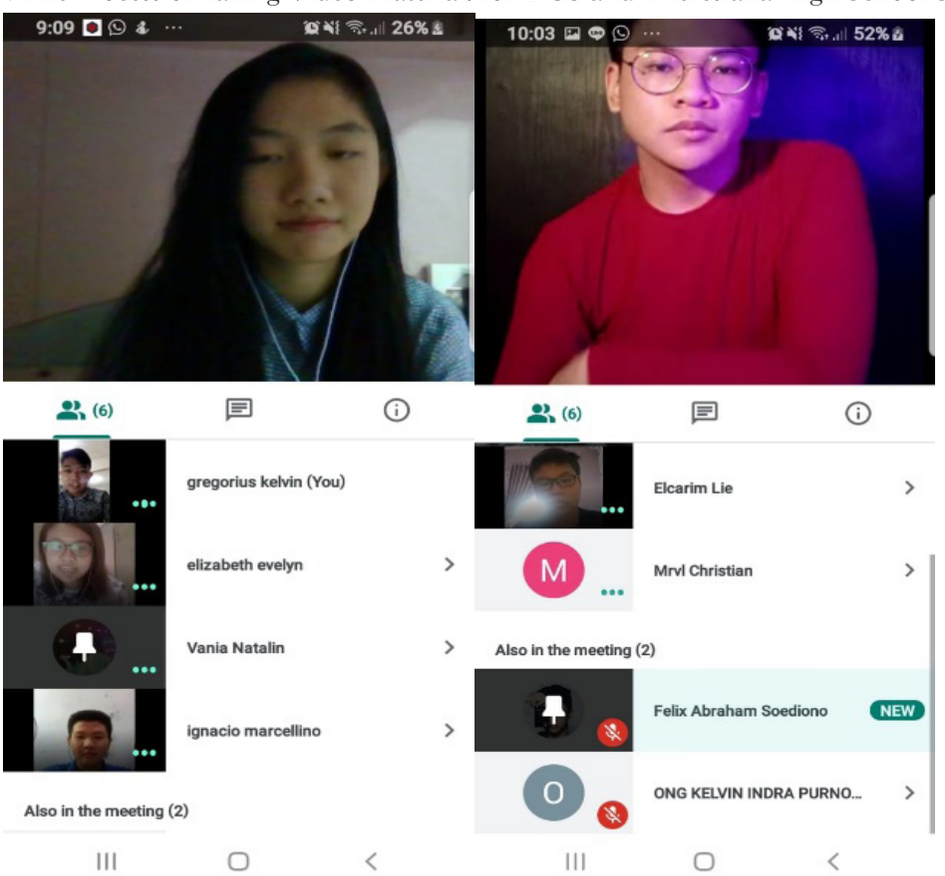


Figure 2: The Process of Taking Video Materials for Daniels Creative School Leaders and Teachers

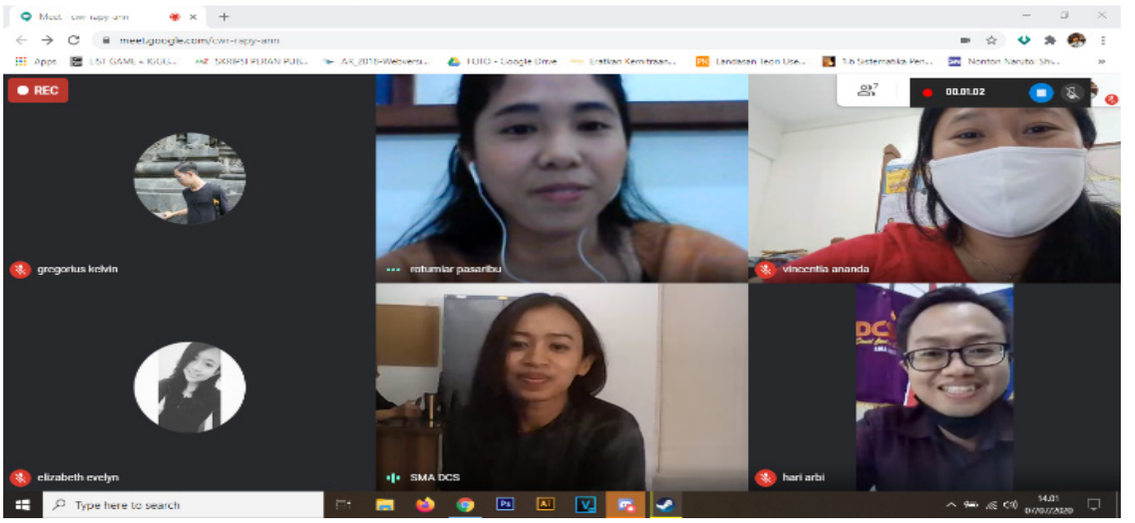
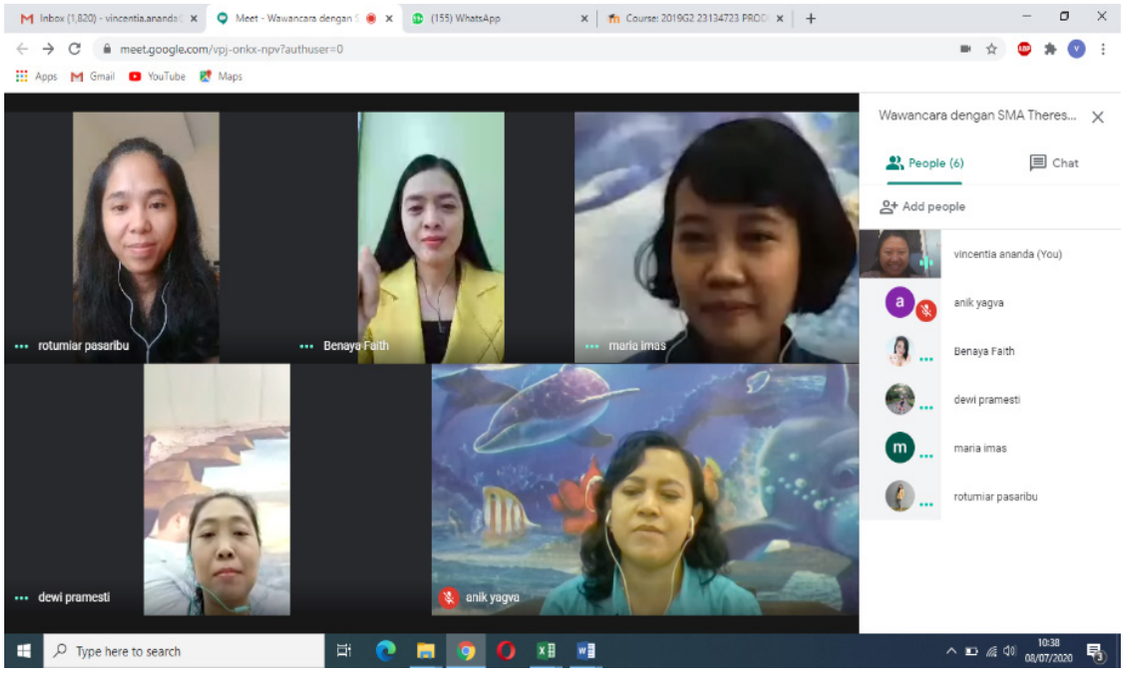


Figure 3: The Process of Taking Video Materials for Theresiana High School Leaders and Teachers



C. Video Making

The video material that has been collected then goes through the editing process. Videos are managed by highlighting the positive aspects of implementing online learning. The purpose of highlighting this aspect is as an effort to positively influence the community towards the implementation of Pembelajaran Jarak Jauh (PJJ) in practicing the quality of educational service products during the Covid-19 pandemic. In addition, to provide information to the wider community that PJJ can be implemented optimally in the midst of various existing obstacles with support from the school public as a form of problem solving and school responsibilities.

Figure 4: Video footage of the implementation of the school PJJ

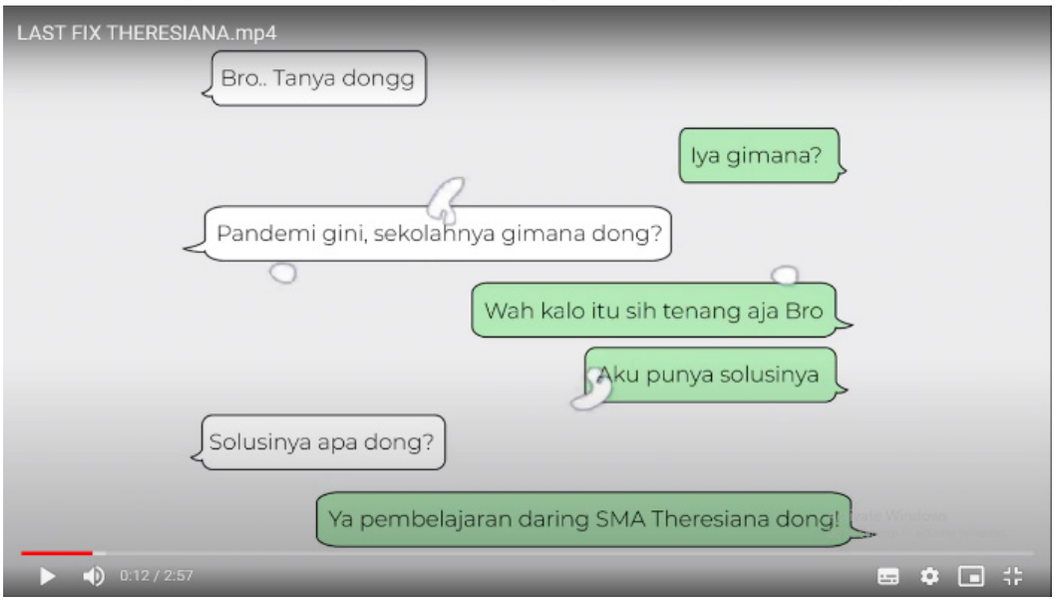
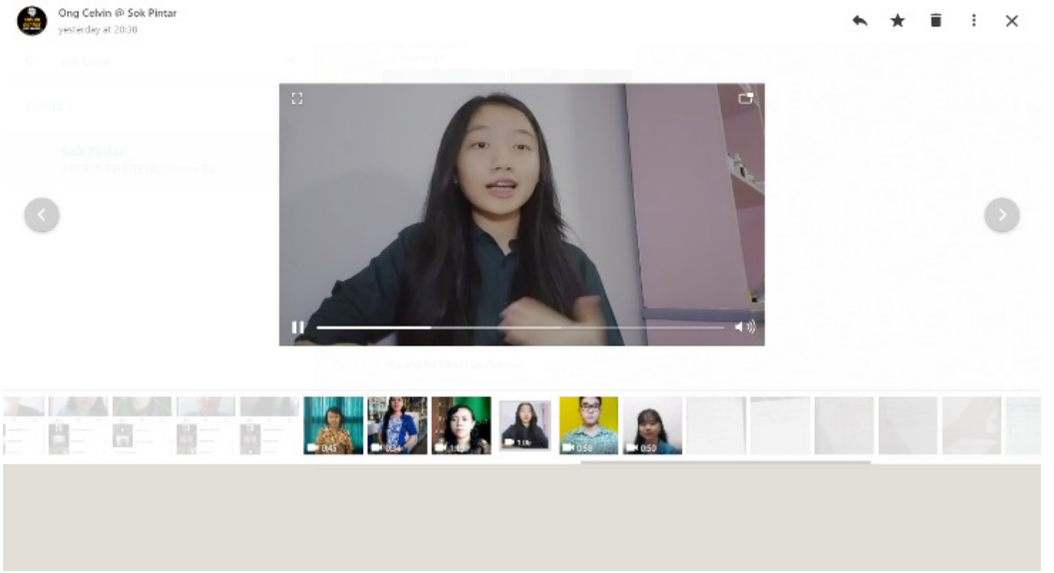
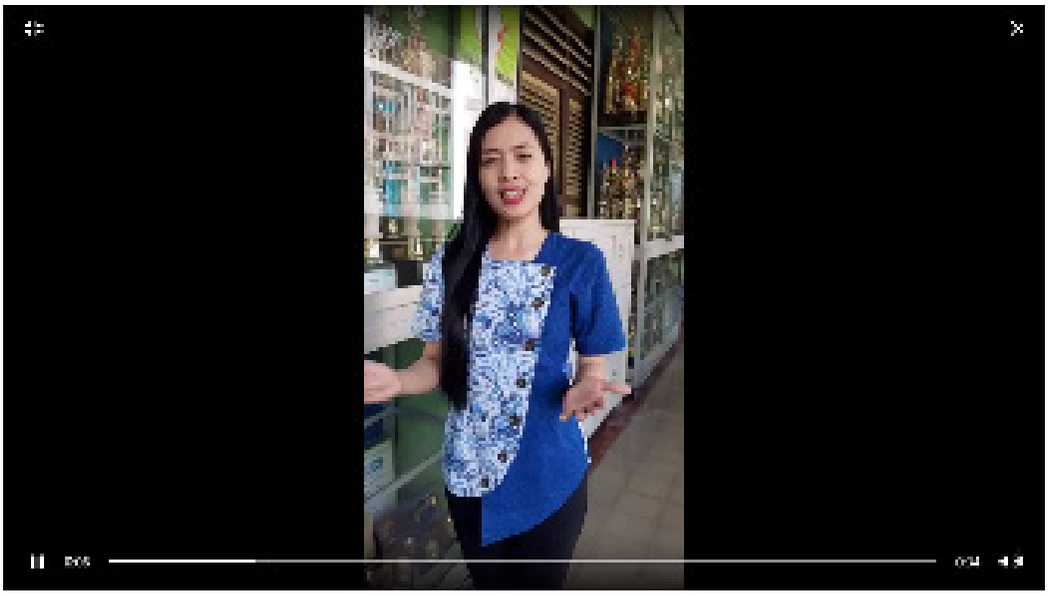


Figure 5: Video footage of testimonials from teachers and students

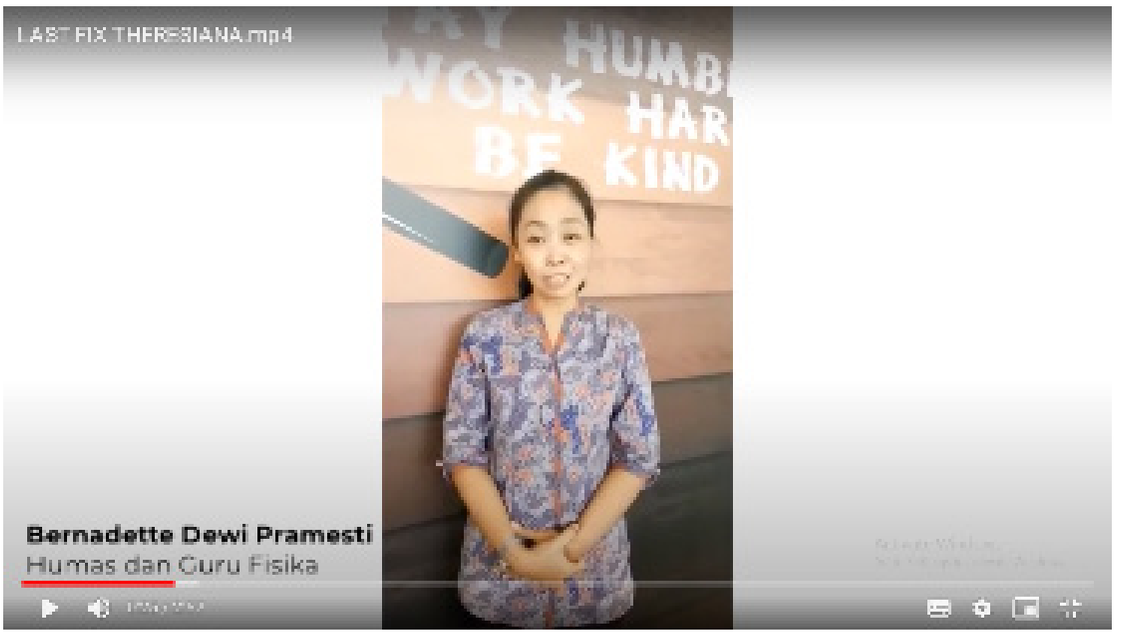


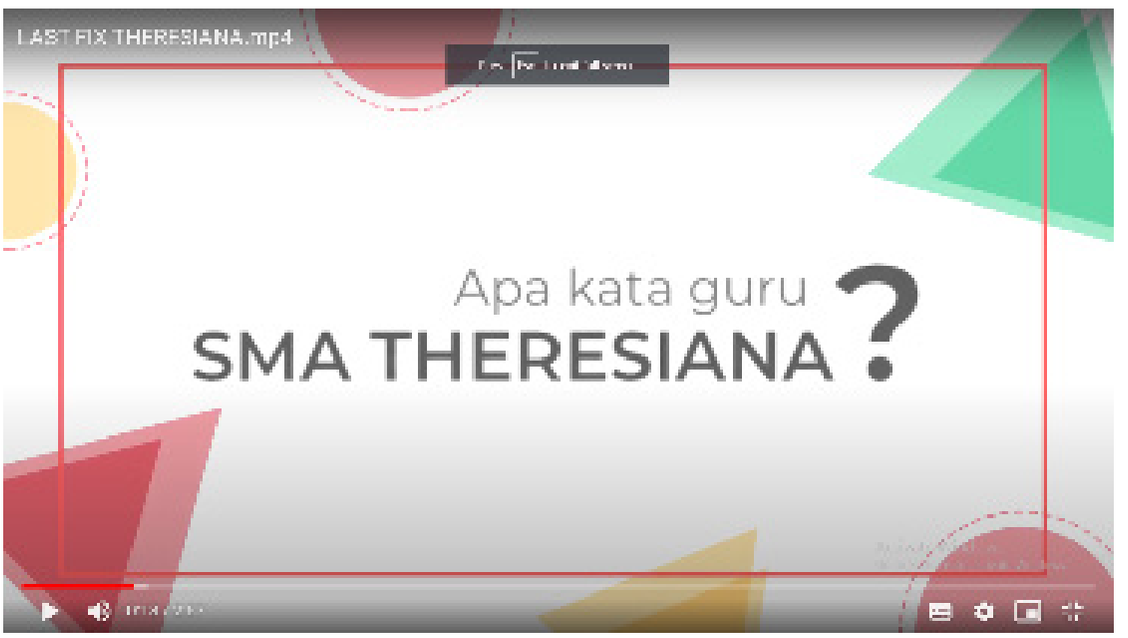


There are two types of videos produced. The first video is an information video on the implementation of PJJ that has been carried out by service partners. The second video is an informational video about the positive impact of implementing PJJ during the Covid-19 pandemic. One of the contents of the video contains responses from students who have implemented PJJ organized by the school. The following is a snippet of the contents of the student's responses,

> "...the first cons, it's difficult to understand the material and the second is the server problem. But online learning brings positive things. The first makes learning easy to access, for example learning while opening the files I need to study. And of course I get to know more about other communication media that support the online learning process. I also thank the schools that have provided online learning facilities and quickly resolved the problems that are currently being faced."

Figure 6: Video footage of the implementation of the school PJJ by the teacher





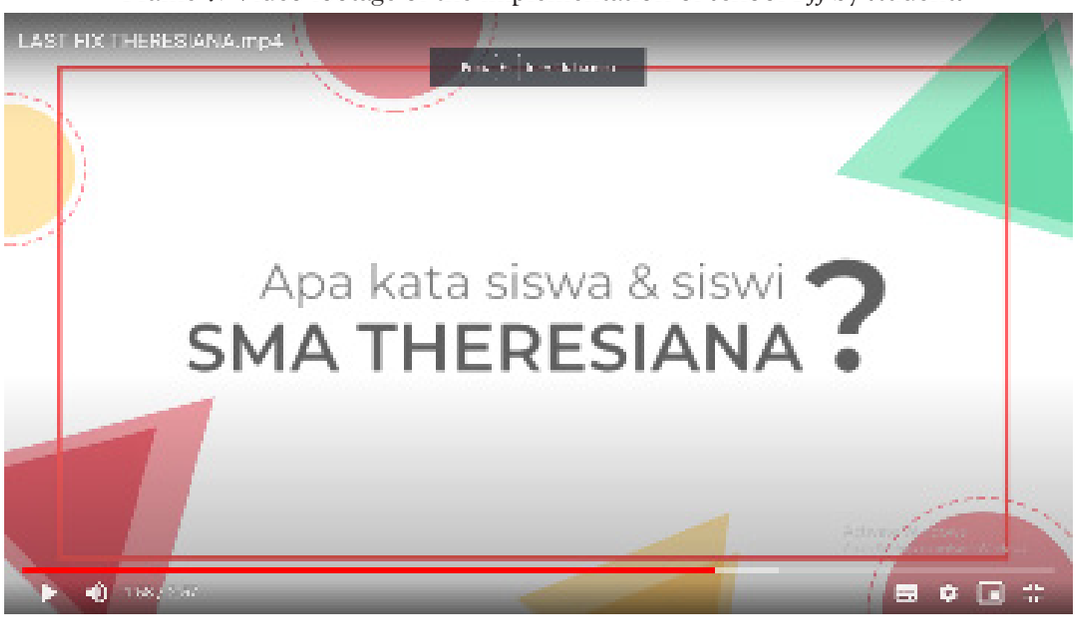
In addition to the video, here is a copy of the video to complete the positive message of this video:

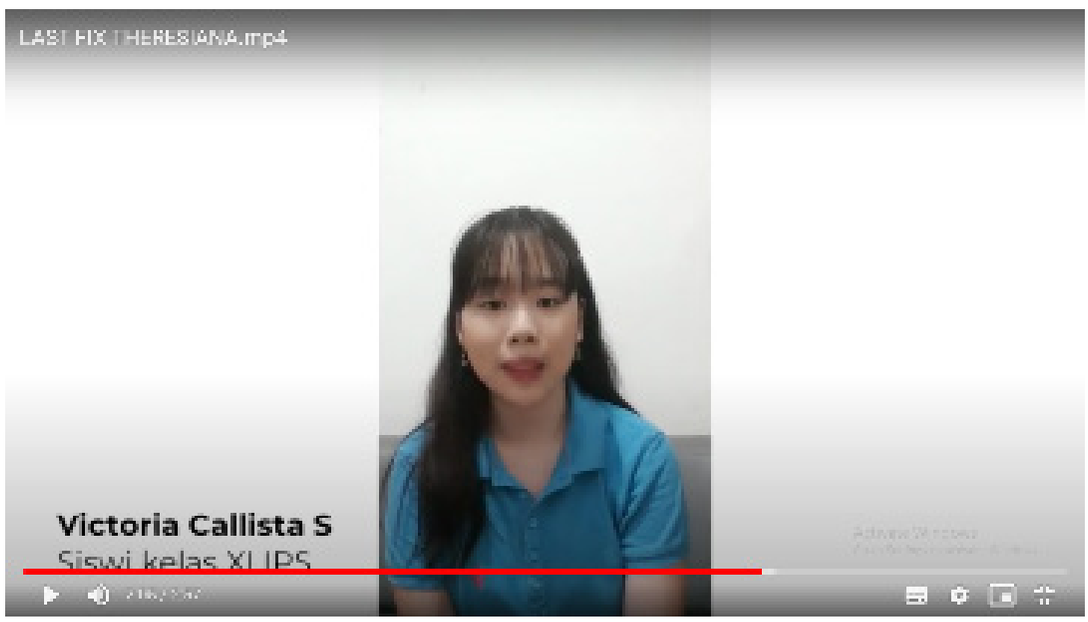
> We are entering a new era in daily life. "New Normal", presumably so called. In context, this is a good thing for future developments, but if we look back again, there is much to be learned.
>
> The Covid-19 pandemic has changed all aspects of life, without any preparation. These various aspects are no exception to the education aspect. Almost all schools were affected. Starting from the formation of sudden decisions, to sensitive financial issues.
>
> Covid-19 seems to have brought about mass changes to learning methods, namely online schools. A method that is allegedly able to provide more value for effectiveness for schools in carrying out KBM.

What are the processes and experiences of leaders, teachers, and students? Check out the following!

> The COVID-19 pandemic is the starting point for changing methods in the world of education. Of course, the community needs to adapt to all the situations and conditions that occur, so that the quality and quality is maintained. Sekian

Frame 7: Video footage of the implementation of school PJJ by students





CONCLUSION

The activity of making videos to provide public information about PJJ activities carried out by service partners has been able to be carried out as an effort to manage school reputation. The smooth running of PJJ is a school achievement to be informed to the wider community. Thus this information can provide additional public confidence, parents in particular, about the academic journey of students at school. This video also provides positive information on the implementation of PJJ to the wider community to reduce the stigma that online learning is not optimal due to the limitation of not meeting face-to-face. With video testimonials of online learning implementers from students and teachers in particular, they can have a positive influence on the school public. This is based on the results of research that has been done previously that there is student boredom and parental concerns about the depth of material received by students. Thus the making of this video is not only a medium for improving the reputation of the school but also a media for supporting the wider community to be able to remain positive during this Covid-19 pandemic. Finally, the activity of making this video explains how schools continue to provide quality service products even though conditions are difficult. In addition, interactive PJJ activities between teachers and students are also the behavior of the school's responsibility to overcome crisis conditions which of course aim to maintain the school's reputation.

REFERENCES

CNNIndonesia. (2020, April 13). *KPAI Terima 213 Pengaduan soal Belajar di Rumah.* Retrieved Juni 24, 2020, from https://www.cnnindonesia.com/nasional/20200413135511-20-493017/kpai-terima-213-pengaduan-soal-belajar-di-rumah

Gasing, S., & Suryanto. (2016). *Public Relations.* Yogyakarta: Andi.

Juhji, & etc. (2020). *Manajemen Humas pada Lembaga Pendidikan.* Bandung: Widina Bhakti Persada.

Murfi, A., & etc. (2020). Kepemimpinan Sekolah dalam Situasi Krisis Covid-19 di Indonesia 2020. *Managerja: Jurnal Manajemen Pendidikan Islam, 5*(1), 119-136.

Purwaningwulan, & Maulin, M. (2013). Public Relations dan Manajemen Krisis. *Majalah Ilmiah UNIKOM, 11*(2), 166-177.

Simpson, L. (2011). *The management and impact of international rankings on reputation in higher education.* Manchester: University of Manchester. Retrieved October 14, 2021, from https://www.research.manchester.ac.uk/portal/en/publications/the-management-and-impact-of-international-rankings-on-reputation-in-higher-education(eb2b57b5-48eb-4b8c-bc28-0204ea7eaf03).html

Voaindonesia. (2020, July 10). *Tahun Ajaran Baru, 218 ribu Sekolah Negeri dan Swasta Terapkan Belajar Jarak Jauh.* Retrieved Juli 10, 2020, from https://www.voaindonesia.com/a/tahun-ajaran-baru-218-ribu-sekolah-negeri-dan-swasta-terapkan-belajar-jarak-jauh/5496644.html

The 16th eLearning Forum Asia 2021 was a collaborative event organized by Soegijapranata Catholic University, E-learning Forum Asia, and the United Board. The conference is usually held in different institutions within Asia regions. In 2021, eLearning Forum Asia took place in Soegijapranata Catholic University, Semarang, Indonesia. The conference theme, Augmenting the Virtual Environment: Technology – Innovation – Humanity, was to invite researchers, technologists, educators, and students to share virtual experiences, showcase teaching innovations, share insights and ideas on balancing teacher and students' needs and teaching goals.

ISBN 978-623-5997-14-8 (PDF)

7% Overall Similarity

Top sources found in the following databases:

- 6% Internet database
- Crossref database
- 0% Submitted Works database
- 1% Publications database
- Crossref Posted Content database

TOP SOURCES

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

1	myscholar.umk.edu.my Internet	4%
2	news.unika.ac.id Internet	1%
3	Gary Wai Chung WONG, Paulina Pui Yun WONG, James Chit Ming CHO... Crossref	<1%
4	elfasia.org Internet	<1%
5	researchgate.net Internet	<1%
6	Sarthak Chandra, Sugandha Sharma, Rishidev Chaudhuri, Ila Fiete. "Hig... Crossref posted content	<1%
7	dc.uwm.edu Internet	<1%
8	ladydoakcollege.edu.in Internet	<1%

9	Universitas Katolik Indonesia Atma Jaya on 2022-05-20 Submitted works	<1%
10	acikbilim.yok.gov.tr Internet	<1%
11	Columbus State University on 2022-11-18 Submitted works	<1%
12	"2019 Annual Meeting of the American Society for Bone and Mineral R... Crossref	<1%
13	bioinfopublication.org Internet	<1%
14	blog.soqqle.com Internet	<1%
15	Do, Thi Ha. "Flipping the Classroom: The Efects of Flipped Learning on ... Publication	<1%
16	University of Santo Tomas on 2022-05-29 Submitted works	<1%
17	cade.upm.edu.my Internet	<1%
18	academic-publishing.org Internet	<1%
19	eudl.eu Internet	<1%
20	journals.vilniustech.lt Internet	<1%

21	Our Lady of Fatima University on 2022-06-13 Submitted works	<1%
22	Camarines Sur Polytechnic Colleges on 2023-09-14 Submitted works	<1%
23	scribd.com Internet	<1%
24	"Education in the Post-COVID-19 Era—Opportunities and Challenges", S... Crossref	<1%
25	West Visayas State University on 2023-05-10 Submitted works	<1%
26	idemployee.id.tue.nl Internet	<1%
27	Fu Wing Yu, Kwok Tai Chan, Rachel Kam Yung Sit. "Analysis of centrifu... Crossref	<1%
28	globaledunet.org Internet	<1%
29	Han, Chan Yee. "The Use of Anime as a Teaching Tool in a Japanese a... Publication	<1%
30	Jose Rizal University on 2024-01-22 Submitted works	<1%
31	bibis.ir Internet	<1%
32	digilib.uinkhas.ac.id Internet	<1%

33	ebin.pub Internet	<1%
34	iejee.com Internet	<1%
35	openaccess.ahievran.edu.tr Internet	<1%
36	Cecilia Titiek Murniati, Heny Hartono, Agus Cahyo Nugroho. "The chall... Crossref	<1%
37	Far Eastern University on 2021-05-02 Submitted works	<1%
38	Harris, Theresa Odom. "High School Students' Motivation for Engagem... Publication	<1%
39	Institut Pendidikan Guru Malaysia on 2023-10-16 Submitted works	<1%
40	Karachi American School on 2021-04-30 Submitted works	<1%
41	Merriweather, Dolores. "Strategies to Translate Curriculum from Face-t... Publication	<1%
42	Mirela Zaneva, Emilie Minnick, Nahar, Valentina Ginting et al. "Social N... Crossref	<1%
43	Mohammed, Khoshee Othman. "The Perceptions of Elementary Kurdis... Publication	<1%
44	Palawan State University on 2023-12-23 Submitted works	<1%

45	University of Birmingham on 2023-01-15 Submitted works	<1%
46	University of St La Salle on 2021-06-07 Submitted works	<1%
47	purehost.bath.ac.uk Internet	<1%
48	academic-publishing.org Internet	<1%
49	İbrahim Doyumğaç, Ahmet Tanhan, Mustafa Said Kiymaz. "Understandi... Crossref	<1%

Excluded from Similarity Report

- Bibliographic material
- Cited material
- Manually excluded sources
- Quoted material
- Small Matches (Less then 10 words)

EXCLUDED SOURCES

repository.unika.ac.id
Internet

40%