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Designing advertisement board game and examining factors correlated with board gaming behaviors

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Designing advertisement board game and examining factors correlated with board gaming behaviors

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Abstract. Advertising is a form of mass education for people to learn that something exists in a market. In this post-information era, from consumer products to consumer services, every company in various businesses such as airlines, the marketplace, even education have used various advertising media to raise public awareness of the brand. It can be concluded that to raise awareness of a product or public services, advertising is one of the essential parts as well as in the field of education. The study has a purpose to design a board game advertising a program in a university. The board game has the element of advertisement concealed, making the students able to enjoy searching for information about the university and increasing their will to learn about the university. This study results in a board game prototype "Flow Into The System" game tested towards 29 high school students and 9 college students in the age range of 19 to 23. The questionnaires from 38 respondents have been analyzed using SPSS statistical analysis. The finding of analysis proves that the game can make the respondents want to play it again and again because the game is fun to play, making their bonds stronger, and being perceived as useful.

1. Introduction

In this post-information age, advertisements using social media and video games as a delivery method has been designed to be interesting and memorable by those who accessed them. According to a research company, DFC Intelligence, the market for in-game advertisement in North America reached US$ 1million in 2010 [1]. The success of a video game as delivery and learning media in Asia also reached US$1.1 million in value [2], showing that advertisement using a game as a medium is one of a good way to raise brand awareness. Even though advertisement media mostly uses digital video games to raise brand awareness nowadays, tabletop games have yet to be used to advertise a university. Especially its department's majors and programs.

Recently, the growth of the board game industry in Indonesia has been surfacing. With the participation of a publisher game, "Manikmaya" in exhibiting several board games which they published in a board game exhibition event, SPIEL 2014 in Essen, Germany to promote their own board game about Indonesia in an international event [3]. Followed with the release of "Waroong Wars" and "Pagelaran Yogyakarta" board games about Indonesian culinary and managing cultural show stage respectively, made by the first and second champion of Board Game Challenge" by Harian Kompas. With these two games as the driving force of the national board game industry in Indonesia [2] this potential should be developed to make an advertisement board game.

Based on the current research background, there are some problems. Which are: a) How to create a board game as a promotional medium of a program in a university? b) How to implement an in-game advertisement in a board game without revealing too much about the advertisement aspect? c) How to create the board game which contains in-game advertisement to be enjoyable for its players, and d) How to create a board game that makes the players want to play it again and again.

And based on the problems mentioned above, these research aims are a) to create a board game as a promotional medium of a program in a university while implementing an in-game advertisement without revealing too much about advertisement aspect yet still being enjoyable to be played, making the players want to play it again and again.

2. Literature review

2.1. In-Game advertisement
Advertisement is a mass communication form which used to educate the consumer about a new market, associated with the creation of a brand that has something unique [5]. Meanwhile, in-Game Advertising (IGA) refers to an advertisement delivered in a video game. IGA is not a specifically produced game to sell a certain product [6]. One effective way to implement an in-game advertisement is to place the advertisement according to the context and flow of the game.

2.2. Transmedia storytelling
Transmedia Storytelling is storytelling through several platforms used to introduce something to give the public a more rich and interesting experience and to expand the suitable potential market for different segments [7]. In the simplest form, Transmedia storytelling is defined as "the same story, delivered through different media" [8] which will influence the social interaction with different costumers in different communities. In a marketing plan, Transmedia storytelling would not only give a different experience but also becoming the main component to publish something to its potential customer in various forms. [9][10].

2.3. Tabletop game
According to the Oxford Dictionary, tabletop means the horizontal surface of the table, and the game means an activity done to get engagement and enjoyment [11][12]. In The Art of Game Design: A Book of Lenses, Jesse Schell explains that game is an activity, played voluntarily with a set of rules, conflict, and objectives which needs its players to work for particular objectives, and possessing some specific values which only existed inside the game [13]. Bruce Whitehill separates tabletop games into several categories [14] which comprise:
1. Board game, a game comprising a board that directs how the game is played and how its movement works
2. Card game, which uses cards as media, whether it's a generic card or a specifically printed card
3. Other Board Games; The board game in this category could be games that combine one or more elements, or possessing ideas or technologies which aren't included in the existing classification.

Figure 1. Example of board game "Shadow Hunters"

3. Research method

The research divided into two processes, the development process of game and examination of the game using experimental test and statistical analysis of the data experiment. The development processes are constructed into four stages following to Lennart Nacke [15], concept creation, pre-production, prototyping, and production of the game. In the concept creation stage, the collected ideas are evaluated whether they are worthy of being funded and produced before deciding on its target audience. During the pre-production stage, the designer tests and examines the ideas in a series of prototyping before continuing to plan the production. The prototyping stage is the beginning of the whole production phase by creating concept arts, refining mechanic, and gameplay aspect to build the game in a physical prototype before the developers finally produce the game in it's fullest.

The examination of the game was done by an experimental test involving high school students and college freshmen located in Semarang, Jakarta, and Surabaya. This data was being collected by asking samples to fill in a questionnaire after they played the board game prototype at least thrice and five times at most. The samples consist of 29 high school students and 9 college students.

Furthermore, the collected data was analyzed using SPSS software to prove the hypotheses on the proposed model in this research. The variables employed in the model were tested using validity and reliability test. The last stage in the statistical analysis is correlation analysis to reveal the relationships among variables. The relation of the variables to Behavioral Intention reveals which ones of the variables determining the intention of players to play the game again and again in the future.

4. Development

To create a board game containing an in-game advertisement about information system major, the development process is being separated into several segments :

4.1. Creating a concept

The first concern of game designing is to create a concept that's suitable to put In-Game Advertisement using a few pieces of information Systems department in Soegijapranata Catholic University while being able to retain its replay value. The second concern is to make the game simple and fast enough to set up and reduce the number of game components as small as possible. This needs to be done because the game is aimed to be played by the general public.

4.2. Prototype development

The Genre picked for the following prototype is a party game. The reasons are a) Party games heavily encourage social interaction between its players, which is suitable for players to get into when they just want to have fun with their peers. b) Party games have a simple setup and simple gameplay. Making its preparation time and playtime short. The average playtime is around 25 to 45 minutes. The objective of

this game is to achieve a total attribute point equal to the attribute requirements that have been given in the goal cards. The game ends when all but one player successfully reaches the minimum point in their respective goal cards.

4.2.1. Gameplay components. The game consists of cards that are divided into following decks: a) Goal cards, which comprises four different goals that each player must fulfill to win or clear the game. b) Chance Cards, each comprises five *"usaha berhasil"* (successful effort) cards and *"usaha gagal"* (failed effort) cards. The cards' use is to determine whether the players can take possession of the event card they chose or not. c) Action cards, this card is used by players to interact mechanically in the game. Furthermore, action cards are divided into two kinds: normal action cards and instant action cards. The difference being instant-use action card, which has a lightning symbol on its effect description, can be used outside the main phase, while the normal action card does not. d) Event Cards made up of cards depicting activities that can and will be done in the information system program. The last components are e) Tokens. Each player will be given four tokens of different colors. This token will be used as energy tokens to obtain event cards during the bidding phase.
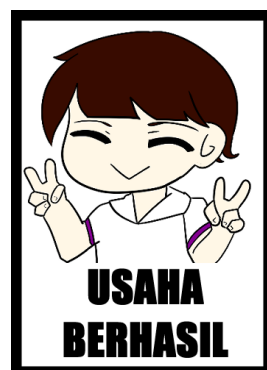
Figure 2. Goal card   **Figure 3.** Effort card   **Figure 4.** Action card   **Figure 5.** Event card
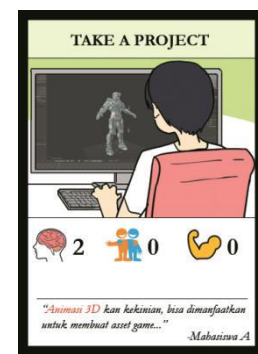
4.2.2. Gameplay. The game has a few phases, the preparation phase, the main phase, and the checking phase. Preparation Phase is a phase where the players get themselves ready to play the game. The main phase is the phase where players tried to manipulate the field condition to maximize their setting, as well as to bid their energy tokens to obtain event cards. Checking phase is the phase where players check whether their attempt to get the event card is successful or not, as well as to check their total attribute. points if their attribute points are enough to win the game or not.
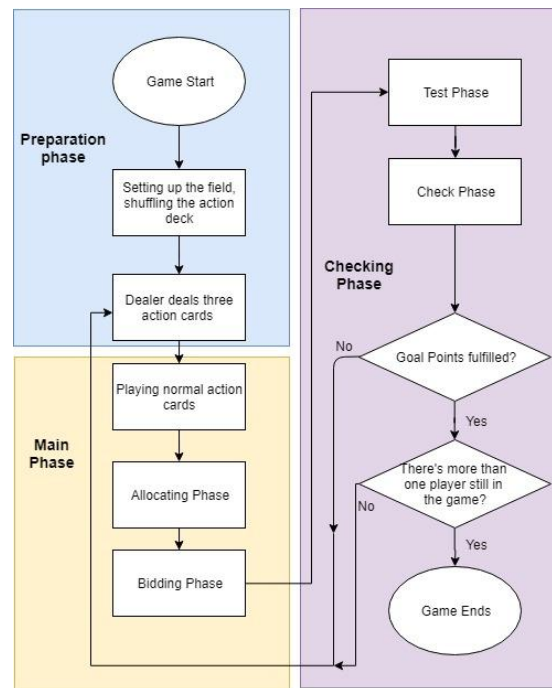
Figure 6. Flow into the system gameplay flowchart

There are several things that players must do during the preparation phase: Shuffling the action cards, event cards, chance cards, and goal cards each into separate deck; Setting up the field by placing the pile of cards just like Figure 7; Distribute the goal cards to each player randomly; Distribute the cards in the action deck until each player have three cards in their possession; Then flip the top three event cards on the event deck open; put the revealed event cards in the event zone.

Figure 7. Field that must be arranged to play flow into the system

During the main phase. Each player will be able to play their action cards to make an advantage. The players then allocate their energy token and putting their energy token over energy cards of their choice. If a player or more allocated their energy token to the same event, the player with more allocated energy got his/her priority.

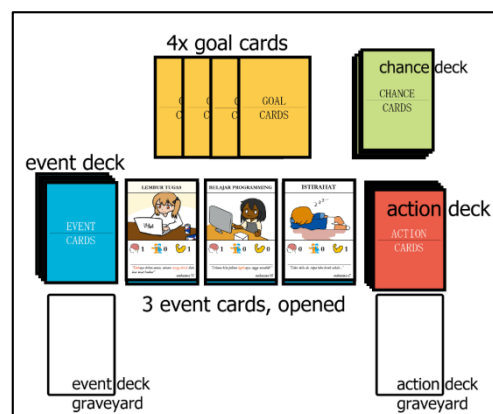During the checking phase, the players are checking whether they can take their respective chosen event card, and to check whether they are successful in taking them. This phase is divided into several sub-phases: test phase, where players pull three cards from effort deck one by one. If the player got at least two successes, the event is won by him/her. If not, let the second bidder do the 'test phase'. If there's no bidder, put the event card to the event graveyard. Check Phase. Players check whether the points they collect is now enough to win with his/her goal card in mind. If it is enough, the player wins the game. If there are not enough points for anyone to win. Draw action cards until each player's hand card becomes three, then repeat the process from the main phase. During the check phase, if at least one player still has its energy token in their possession. Players would not refresh their energy token. Players with all of his/her token spent cannot do the bidding process, but still, be able to play action cards. The game ends when: all players, bare one, reach their goal and win. If there's a special case where two last remaining players reach their goal at the same time, there would be no loser. Everyone is a winner.

4.3. Game mechanic and design explanation

Event cards are used to depict the life of university students. The card is broken down into several sections. From Figure 8, Card name, card artwork and flavor text is the main medium used to introduce players what kind of activities they will do in system information program Card name is the name of the activity that's being used. Using a general term such as "*presentasi*" (presenting study material towards other students) or "*lembur tugas*" (finishing assignment until late in the night) to make the players understand the general activities. These general activities then will be explained further using the card artwork. Figure 8 mentioning in-app purchase analysis as an example.

Furthermore, The event explanation will be elevated further using the flavor text on the bottom of the card. Even though this flavor text does not affect gameplay, it served as a fluff / in-game lore, quoting real-world sources, or in-game references.

Action Cards are used to explain the possible actions players will do during activities/university life. Despite the numerous possibilities that players can take, the action cards being used are ones that show interaction, either player-player interactions or player-event interactions.
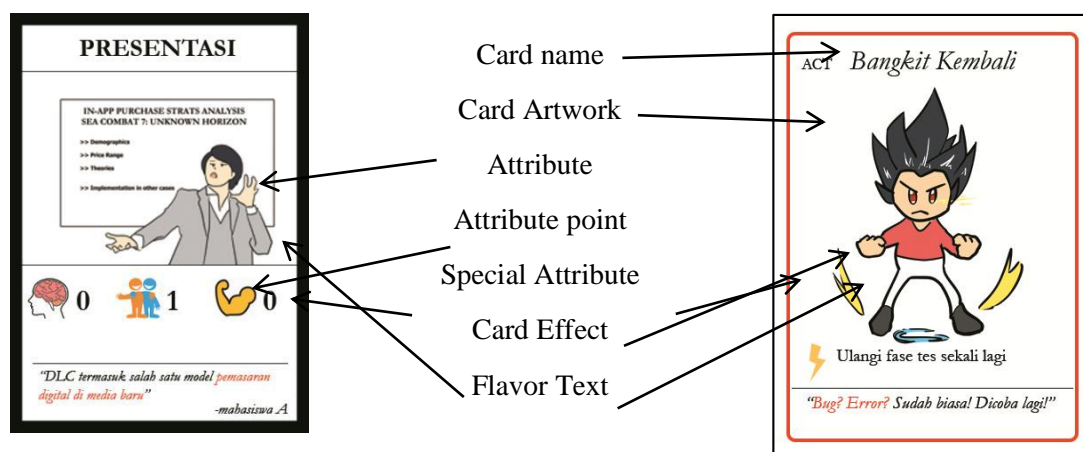
Figure 8. Event card breakdown

Figure 9. Action card breakdown

Overall, the same design is applied to action cards. It has a card name, card artwork that depicts what kind of action players will make, and the flavor text, which will enhance the in-game advertising element of this game. The special attribute is given the image of a lightning bolt, represent the card's nature which can be played during any phase instead of just in the main phase. This design is inspired by the

idiom "As fast as lightning" which means to be able to do things quickly. Effort cards represent the chances of failure even you tried. This cards only contains two kinds of card. With a picture of a happy expression for the success card, and dejected, slightly crying expression for the failure card. Representing the player's emotion when they do the task successfully, or failing.

During the game, each player is given four tokens. These tokens represent the player's stamina. To gain proficiency points in each category, players need to spend a minimum of one stamina point, representing the activity the do during classes or organizational activity.
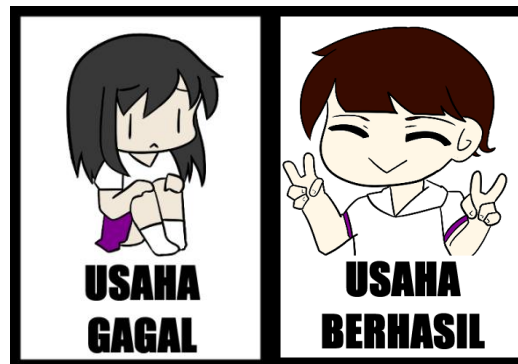
Figure 10. Two chance cards, Failed Attempt (left) and successful attempt (right)

5. Examining factors related to board gaming behaviors

Examining board game was done by testing the game with players several times. The proposed model as shown in Figure 11 was employed to predict the player's intention in the future after they played the game
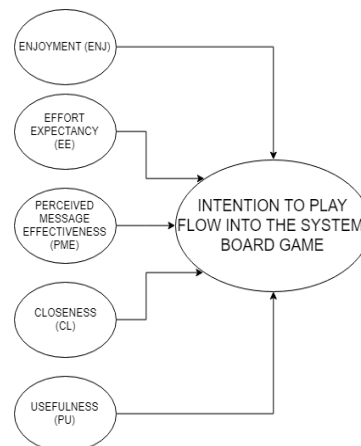
Figure 11. The proposed model

5.1. Factors related to behavioral intention to play game

The factors predicted to have relation to Behavioral Intention to play board games are Enjoyment (ENJ). Effort Expectancy (EE), Perceived Message Effectiveness (PME), Closeness (CL), and Usefulness (PU). Enjoyment can be defined as "The extent to which an individual perceives that playing games are enjoyable[16] while effort expectancy can be understood as the degree of ease associated with the use of the system [17]. Perceived message effectiveness means a chance for the message to have a persuasive effect [18], and closeness is an interconnectedness of self and others which corresponds to including in one's self perspectives and identities of another person. [19] [20]. And the last factor, usefulness's

definition is the degree to which an individual believes that using the system will help them to gain personal goals [21].

5.2. Description analysis
The data used in this statistical analysis was done in 2 months by play-testing the game to 38subjects. By dividing the subjects into groups consisting of 3-4 players each group then asked the subjects to fill in questionnaires. The subjects consist of 9 college students and 29 high school students. The details can be seen in the following table:

Table 1. Player's age.

Age	Frequency	Percent
16	2	5.3
17	3	7.9
18	16	42.1
19	14	36.8
20	2	5.3
21	1	2.6
Total	38	100

To ensure the validity of the result, a Factor Analysis is required in double-checking the result. By processing all of the variables into the SPSS analysis software, we can check which variable did not match the requirement of being valid. From the result of the first validity test. It can be concluded that most of the variables have converged with their respective groups, except Behavior Intention (BI1, BI2, and BI3) which made the variable not solid. Therefore It should be processed with one of the variables, BI1, removed from the group because it's the lowest and farthest interval between each variable's value in the BI group. It will then be valid.

Table 2. Principal factor analysis

	PU-BI	PME	TG	EE	ENJ
PU1	.728	.160	.174	.051	-.045
PU2	.712	.447	.144	.261	-.011
PU3	.821	.037	-.131	.098	.128
BI2	.832	-.072	.316	.026	.105
BI3	.641	-.168	.425	-.113	.418
PME1	-.081	.873	.087	.272	-.019
PME2	.231	.874	-.083	.214	-.136
PME3	.078	.851	.057	.040	.038
CL1	.045	-.029	.782	.032	.047
CL2	.526	.320	.698	.051	-.011
CL3	.577	.410	.563	.118	.011
EE1	.026	.510	-.266	.571	-.208
EE2	.022	.025	.010	.863	-.078
EE3	.092	.168	.068	.886	.060
ENJ1	.092	-.050	-.103	.011	.857
ENJ2	-.089	.133	.497	-.087	.636
ENJ3	.067	-.210	.657	-.123	.429

5.3. Reliability test

After checking the variables with Factor Analysis using the rotated component matrix, all the variables will be tested for its reliability with Cronbach Alpha Coefficient. Cronbach Alpha Coefficient itself has a predetermined range to check whether a variable is reliable or not. Table 3 shows the result of the reliability test.

Table 3. Cronbach alpha reliability test result

Variable	Cronbach Alpha	Internal consistency
Enjoyment (ENJ)	.608	Questionable
Effort Expectancy (EE)	.761	Acceptable
Perceived Message Effectiveness (PME)	.883	Good
Closeness (CL)	.805	Good
Usefulness (PU)	.781	Acceptable
Intention (BI)	.884	Good

As we can see the result. The consistency score of Enjoyment is Questionable, which has the worst consistency compared to Effort Expectancy's and Usefulness's acceptable score, and Perceived Message Effectiveness and Closeness's good score.

5.4. Correlation analysis

By analyzing the correlation between all of the demographic data and average value of each variable (AENJ, AEE, APME, ATG, APU, and ABI) the variables are tested to find the correlation of ABI towards each variable. Based on the result of correlation in Table 4. It proves that it's younger people who valued the board game and intended to play board games because they perceive that a board game is enjoyable, making their closeness stronger, and the board game they play has some value of usefulness for them.

Table 4. Correlation analysis

	AGE						
AGE	1	AENJ					
AENJ	-0.103	1	AEE				
AEE	-.323*	-0.171	1	APME			
APME	-0.218	-0.09	.454**	1	ACL		
ACL	-.334*	.352*	0.135	.325*	1	APU	
APU	-0.149	0.071	0.264	.338*	.561**	1	ABI
ABI	-0.03	.467**	-0.05	-0.03	.509**	.565**	1

* Correlation is significant at the 0.05 level (2-tailed).

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

6. Conclusion

Using flow into the system board game as the example, we can deduce that to create a board game as a promotional medium of a program in a university, One must take public's preferences of quantity over quality in gaming. As well as reducing the preparation time as short as possible to avoid the players getting distracted. This ease of access will make the board game to reach even people who rarely play a board game, or even never played one before. Furthermore, Implementing an in-game advertisement in

a board game without revealing too much about the advertisement aspect using flavor text as an attempt proves that, while players can realize the game is trying to send them a message through the card's names, artwork, and flavor texts. Ultimately this proves not to be very effective even though the game is played for about thrice to five times for each group of players. Making the need to research a more effective way to deliver a message via a board game. While Flow Into The System Board Game does not have the most efficient way to deliver a message, ultimately, the board game is enjoyed by the players. For it does not have painstaking rules and details. With a little effort to understand the game mechanics, players can enjoy the board game and feeling their closeness during the game. In the end, Flow Into The System Board Game proves to be fun and enjoyable for its players and it makes the bonds between its players stronger during the game. Flow Into The System is also perceived to be useful and able to make its players learn new things. Which becomes another factor for players to keep playing Flow Into The System Board Games.

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