Search Engine Optimization (SEO) Implementation for Educational Purposes

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Abstract— **Internet and education are complemented each other. Most of educators have been teaching their students to complete their homework and assignments using the Internet. On the other hand, the Internet requires the educational contents to keep it attractive to the Internet users.**

However, the increasing educational contents on the internet often create a competition between authors to persuade people in reading their articles. Search Engine Optimization (SEO) usage becomes important for them and their institution in leading the Internet users to find their educational contents easily.

This paper describes the techniques and process of implementing SEO for educational purposes, including how to improve the rank of a university in Webometrics.

Keywords— **educational contents, pagerank, search engine, seo, webometrics**

I. INTRODUCTION

SEO becomes important for the website owners who need their websites have high level of visibility and high rank in search engine result page [1]. Having high rank in search engine means a lot for the website owners as it can bring tons of visitors to their website from search engine. It is very crucial because most of the internet users use search engine to find relevant information on the internet.

When a university dominates the search results in a specific field, pride of the institution is also increased. The expertise of the university can be recognized by the society. In addition, SEO is not only important for increasing a website's rank in search engine result page but also important to increase the rank of university in Webometrics. These rankings have a promotional effect for a university in the public.

However, SEO is divided into two types. The first type is called white hat SEO or white SEO. The second one is called black hat SEO or black SEO. Those types are opposite each other. White SEO refers to a type of SEO technique which involves legal methods to improve the visibility of a website or web page in search engines. In other side, black SEO refers to SEO technique that uses illegal methods to improve a website's visibility in search engine. Some concrete examples of black SEO are link farms and keyword stuffing.

Certain website owners who tried to implement black SEO have a target to save time in achieving higher rank in search engine result page. The consequences appear when search engine discover the illegal SEO methods on the website. This website will be

penalized and removed from search engine result database.

II. CONCEPT OVERVIEW

Basically, the purpose of SEO is to improve visibility of a website in search engine result page. To achieve that goal, a website must optimize several factors both internal and external factors. For that reason, SEO are divided into two factors: SEO on-page factors and SEO off-page factors [2].

On-page factors are the factors that exist inside a website or web page. Some examples are Meta tags, URL address and unique contents. On the other side, off-page factors are those factors existing outside the website or web page. Some examples are number of inbound links, keywords used in the anchor text of inbound links and the variety of sources of inbound links [3].

When the educational website implements those factors, there is possibility to promote their educational contents on the search engine. Further more, it can be used to increase the university rank in the Webometrics. Because one of four factors used to calculate its ranks are Visibility (V) and Size (S) that could be taken from SEO implementation.

Those four indicators are Size (S), Visibility (V), Rich Files (R) and Scholar (Sc) [5]. Those factors do not have equal weight in the ranking system. The Visibility (V) indicator has the highest percentage which is 50% of total portion. Size (S) has 20% of total portion, Rich Files (R) has 15% of total portion and so does Scholar indicator (Sc).
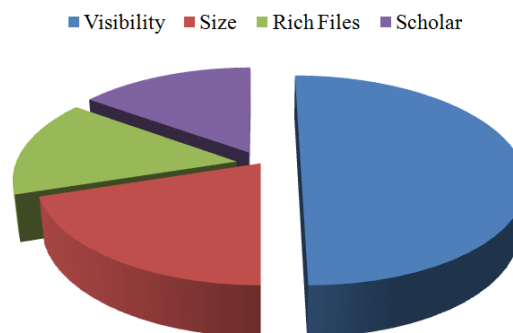

Fig. 1 Webometrics ranking system

The Visibility (V) refers to total number of inbound links point to a university. Size (S) is an indicator that represents total number of web pages of a university website indexed in major search engines. Rich Files are total number of documents stored in an official website of university and Webometrics only count certain document file extensions: Adobe Acrobat (.pdf), Adobe PostScript (.ps), Microsoft Word (.doc) and Microsoft PowerPoint (.ppt). The last one is Scholar that represents number of papers and citations of a university official website.

When the Visibility (V) and Size (S) are improved by implementing the SEO techniques, it can generate up to 75% of total grading. Those factors are able to improve a university rank significantly.

III. STRATEGIES

The reason to implement SEO techniques in order to increase Webometrics ranks is because of the big role of SEO in its scoring. SEO techniques can boost up to 75% of total score and create big impact to the university's website ranking in Webometrics.

The flowchart of implementing SEO to improve Visibility and Size indicators of a university's website can be seen in the figure below.
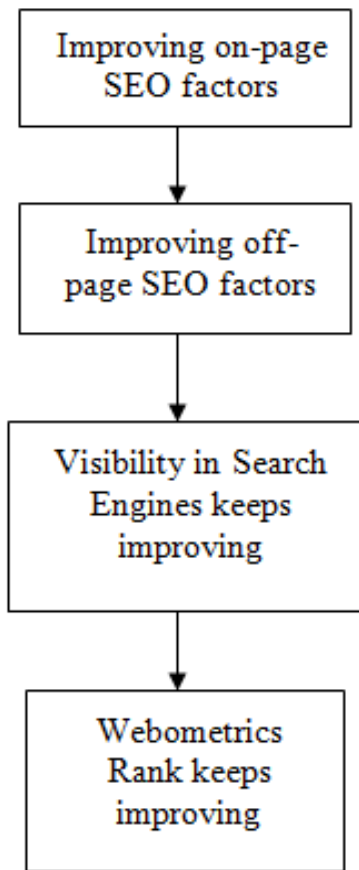
Fig. 2 The process of implementing SEO

IV. IMPLEMENTATION

To improve rank in Webometrics by implementing SEO techniques, the university should begin to improve the on-page SEO factors of the university's website. According to a quality survey conducted by SEOMOZ.org, the most important on-page factor is the proper use of Keyword in Title Tag [4]. The university should put the word "University" in their website's title tag. It will improve the rank of website in search engine result page for the keyword that contains word "university".

The result can be better if the word "University" can be used as the first word in title tag. Another technique to improve on-page SEO factor is to put keyword in H1 Headline Tag. In concrete, the website should use the word "University" or other related word in Heading 1 Headline Tag. These implementations can help search engine to recognize the presence and the category of the website and it can increase the number of web pages indexed on major search engines and concurrently increase the S (Size) Indicator.

After improving on-page SEO factors, website should also improve the off-page SEO factors. The off-page SEO factors mainly relate to quality and quantity inbound links to university's website. The real implementation to increase number of inbound links is share the link to the university's website in education related websites or forum and put proper keyword in the inbound links anchor text. It will increase the number of inbound links and if the keywords used is accurate and relevant with the title of the website, the off page factors of the website can be improved significantly. After off-page SEO factors improved, V (visibility) indicator of university's website will increase too and the finally the university's rank in Webometrics can be improved significantly.

V. CONCLUSIONS

Implementation of SEO techniques in the educational website is recommended. The benefits obtained by the universities are not only to increase the visibility of their educational contents or emphasize their expertise in some fields, but also to increase the rank in the Webometrics that has impact on the institutional promotion.

The SEO can handle the biggest portion on the Webometrics scoring system. When the SEO techniques are implemented properly, the significant result can be achieved to increase Webometrics ranking. The biggest indicators used by Webometrics that are Visibility (V) and Size (S) have 75% of total score in Webometrics ranking system.

If more and more universities are interested to compete on Webometrics ranking, the greater Webometrics target will be achieved in stimulating universities the entire world to upload their scientific researches and publications on the internet. In the end, the

benefit will be obtained by society because of educational materials can be accessed anywhere on the internet.

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