Analyzing the use of SEO and Google Analytic on the Website of Vocational High School of Information Technology Annajiyah

L D Supraba¹ and H Jati²
¹,² Electrical and Informatics Engineering Education Study Program, Faculty of Engineering, Yogyakarta State University
Email: ¹laksmitadewi.2019@student.uny.ac.id; ²handaru@uny.ac.id

Abstract. The number of Islamic boarding school teaching both Information Technology (IT) Education and Religious Education is still limited. Vocational High School of Information Technology Annajiyah located in Tambakberas, Jombang, East Java is a school having both subjects taught. The existence of Vocational High School of Information Technology Annajiyah has not been widely known by outside and inside society of Jombang Regency. Therefore, analysis of the use of SEO is necessary to determine the potential of website visit and school promotion. Previously, Vocational High School of Information Technology Annajiyah promoted school by using brochures only. This method was considered able to introduce the school through traditional way. Analysis result of improving SEO can be seen in Google Analytic recorded a number of site visits amounted 403 in June, where 82.2% of active users are dominated by mobile phone users and fluctuation of the number of visits. This increase is affected by both the implementation of SEO and online PPDB process during the COVID pandemic.

Keywords: Islamic boarding school (Pesantren); SEO; Google Analytic

1. Introduction
Santri city is quite close to Jombang Regency having approximately 49 Islamic boarding schools recorded at (https://jombangkab.bps.go.id/ accessed on July 30, 2020). In Jombang, there are four the most popular Islamic boarding schools, namely Tebuireng Islamic Boarding School, Darul Ulum Islamic Boarding School, Mamba'ul Ma'arif Islamic Boarding School and Bahrul Ulum Islamic Boarding School.

In common, the number of Islamic boarding school focusing on both religious education and Information Technology is rarely to be found. Therefore, the existence of vocational learning-based Islamic boarding school is expected because it has uniquely monitored and scheduled in learning process. Vocational learning-based Islamic boarding school produces graduates who are competent, knowledgeable and having their own skills, so almost 70% of them are occupied by the industrial world [1]

In Jombang, there are several Islamic boarding schools based on both Religion Education and Information Technology at senior high school/vocational high school level, such as Vocational High School of Telkom Darrul Ulum Rejoso and Senior High School of Trensains Tebuireng Ngoro. Vocational High School of Telekom Darrul Ulum Jombang was established in 1996 under the cooperation of Darul Ulum Foundation under the leadership of KH As'ad Umar with PT Telkom led by Ir. Kristiono [2] Senior High School of Trensains Tebuireng was established in 2014 with a unification curriculum combining several subjects. Therefore, the material changed and teaching and learning process began at Senior High School of Trensains Tebuireng. The establishment done by Dr. Ir. KH. Salahuddin
Wahid (Head Master of Tebuireng Islamic Boarding School) was in cooperation with KH. Agus Purwanto, D.Sc. [3].

The existence of Vocational High School of Information Technology Annajiyah located in Desa Tambakberas, Jombang is still unfamiliar to students. This vocational high school has several Information Technology courses including Multimedia and Software Engineering. The existence of Vocational High School of Information Technology Annajiyah has an impact on the availability of diverse technology and information in their environment, so students can follow the development of information and technology modernization in the future. [4] Therefore, it is necessary to take action to introduce Vocational High School of Information Technology Annajiyah by analyzing the potential of website visit and school promotion.

To conduct this research, the researcher used some related studies to strengthen the research. Research conducted by Khairul and Nunung in 2010 entitled "the Analysis of Visitors in Official Website of Syiah Kuala University (www.unsyiah.ac.id)". This research implemented SEO and the result can be seen in Google Analytic functioning to analyze basic statistic about website visits. This is in line with research conducted by Evi Yulianingsih in 2016 entitled "the Implementation of SEO Method in Academic Information System ". This research focused on the implementation of SEO. Therefore, it makes users easier to find information and caused an increase visit of new students. The conclusion is that the collaboration of both research results in the form of website basic statistical analysis to know the number of visits and the increase in website traffic.

SEO is an activity to maximize the search process performance for website pages on all search engines to make easier in searching process. Therefore, it hits the first position and rank from all search engines such as Google, Yahoo, Ask, Mozilla and Bing. SEO aims to produce the right type of priority rank on web page that will be promoted. [5] The implementation of SEO is difficult because it relates to algorithms. However, for an SEO practitioner, the implementation can increase the number of visitors to the website. SEO uses some techniques in running the process including SEO SERP, SEO White Hat, SEO Black Hat, KEI (Keyword Effectiveness Index) etc. [6] White Hat Technique is in demand by many SEO practitioners, while SEO Black Hat Technique rarely attracts the practitioners because of the penalties for blocking website. SEO White Hat technique embodies legal activities carrying out according to search engine guidelines, rules and policies.[7]

To measure the level of SEO success, it can be seen through the number of visits and website rank. Website recommendation is useful for educational institutions to integrate in improving the display website content [8] by optimizing the selection of the right keywords, optimizing keywords by implementing the Allintitle application, which is an open access technology that will type in breaker/research keywords. [9] This can significantly increase the website page rank, because content is the most important aspect in information displayed on a website page and immediately able to be seen by visitors’ site for wider reach. [10] The informative, attractive and qualified content become an advantage for web visitors to continue and keep attracting website visits. The main goal of implementing SEO is to increase website profits in the form of traffic visits and website promotion. [11] Other variables influencing the traffic to increase website visits include website used as a media for promotion, transaction, information source and stimulants in branding image. [12]

2. Methods

Research methodology is a process to solve a systematic problem requiring fact information to support the research implementation. This method can be in the form of research strategies based on approach, design, variable, data collection technique, data analysis technique and research subjectivity in other studies [13]. The research procedures carried out can be seen in Figure 1.
2.1. Research Procedures

2.1.1. Qualitative and Quantitative Research

This research used Qualitative method of exploration-oriented type by revealing inductive logic. The first stage of research process was formulating hypothesis and conceptual framework that would be used in the research. The hypothesis and conceptual framework were applied systematically in collecting and analyzing the data to provide explanation and argument. The quantitative research is a study involving certain characteristics, in the form of number, calculation and statistic. Meanwhile, statistical analysis is used to help researcher to determine the relationship of each variable and can be scientifically rely on the trustworthiness.

2.1.2. Analysis of the Implementation of SEO and Google Analytic

Search engine indexes to find files after the users input words/letters. The technique used in implementing SEO is White Hat conforming to legal search engine guidelines, rules and policies. The implementation of SEO can be said advanced if the practitioner understands the basic of SEO in the form of games in meta tag and tag and they are used to implement SEO. The failure in implementing SEO is that the website cannot rank in the first 10 pages. Finally, SEO practitioner have to evaluate, organize content, update content and share on social networks/social media.

The first stage of the games was implementing meta tag. Meta tag was set HTML code installed on website templates to help analyzing the entire content. The implementation of meta keyword and meta description should match to improve the website progressively.

The second stage was keep updating the content, because content is the core of a website. The students’ admission aims to improve the economy in Islamic boarding school area and residents surrounding due to implementing SEO on the website.

The third stage was making backlink. The concept of online marketing strategy is the more website link, the more visits to the website. The application includes linking information about Vocational High School of Information Technology Annajiyah and providing advertisements to e-mails by entering information to open e-mails related to information at Vocational High Schools of Information Technology and Islamic boarding schools in Jombang. The fourth stage was knowing organic traffic in the form of frequent visitors, the number of visitors, currently opened pages, length of visit and location of visits on the website using Google Analytics. Google Analytics provides a digest of the reports available for a specific account or website. By knowing the navigation state of SEO practitioner, the persona of the visit can be identified. Practitioner must navigate in Google Analytics of other's reports containing a separate load of important information in the form of a Navigation including Real-Time Report, Report information (Users, Demographics, Behavior, Technology), Events (Conversions, All Events), Browse (Analyzing), Configure (Audience, User Properties, Debug Views and Admin Pages).

The aims in using statistical analysis website is to find out the level of website popularity, to know the number of visitors and to determine the selling price of advertisements whether you want to sell or offer banner ads. The price is determined by the analysis performed by website statistic where the more popular website, the selling price of advertising is also getting more expensive.
2.1.3. Recommendation
By analyzing the implementation of SEO and basic website statistic, we know the website’s performance and the website visit potential.

3. Results and Discussion
This was a qualitative research combined with quantitative data of Google Analytic. The result is a basic analysis in the form of site visit data sourced from the analysis of SEO implementation. The following chart is a flowchart of Vocational High School of Information Technology Annajiyah introducing traditional the school profile through website and brochure shown in Figure 2.

![Figure 2. Flowchart Current System](image1)

The following chart describes the system flow that will be designed by analyzing the implementation of SEO and Google Analytic that can be seen in Figure 3.

![Figure 3. Flowchart Design System](image2)
Before reading the website statistical analysis from Google Analytics, you have to install a Tracking Id with a specific objective that will be applied to each HTML page before the </head> tag is applied to each page. The Google Analytics works by tracking in various ways sending the information to the analytics server through certain parameters. Parameters have been applied to the navigation page and there is some information contained in Google Analytic data. The data used by Google Analytics are to provide all reports sourced from HTTP Request, Browser and Cookies. Here is a view of Google Analytics Home and referred to the audience summary page.

![Google Analytics homepage](image)

**Figure 4. Google Analytics homepage**

The google analytics homepage on June 1 to July 31 contains some of the information such as amounted 807 users opening Vocational High School of Information Technology Annajiyah website, amounted 970 sessions duration counted when the user is active on the site, 71.86% bounce rate is how long a user using the site and founded 1 minute 33 seconds of total duration of all sessions (in seconds).

![Traffic Channel](image)

**Figure 5 Traffic Channel**

The traffic channel on 1 June to 31 July contain some information including the lack of access to 31 jule site traffic accessing the website from one direct link, three organic search traffic. Besides, the maximum access of 7 jule site accessing to open websites from direct links is 21 traffics and is 93 traffic of organic search. The traffic channel on this data are arranged according to the system-built channel, such as organic search, direct, referral and others that allow checking the performance of each traffic channel.
The number of users returning to the site from 1 June to 31 July contains some information shown by returning visitors to this site. There are 403 users in June, 13 users returned in July. In the percentage was 3.12%, the users returning to Vocational High School of Information Technology Annajiyah website in the last 2 months.

The number of active users is 3 in a day. Besides, it is also found 41 active users in 7 days and 405 users of Vocational High School of Information Technology Annajiyah websites in 30 days that is described below.

The session by country the dominance of this website's session comes from Indonesian user amounted 96% and fraction of United Arab amounted 2.3%.
It shows that devices used by website users are dominated by mobile phone amounted 82.2%, desktop is 17.6% and tablet is 0.2%.

The most trending interesting pages are PPDB 2020-2021 based on the most demand pages listed in the table above.

4. Conclusion

Based on the research carried out systematically and structurally, the conclusions are described below.

1. By analyzing the implementation of SEO, it can provide the function needed for the school promotion of Vocational High School of Information Technology Annajiyah
2. By analyzing the implementation of SEO, the research knows that the increase traffic occurs in June of 403 visits and the largest visit occurs during PPDB 2020 (New Student Admissions in Academic Year 2020) recorded by Google Analytic Statistic

5. References

[1] P. W. Mintari, Analisis Pembelajaran SMK Berbasis Pondok Pesantren: Studi Kasus di Pondok Pesantren Roudlotul Mubtadiin Balekambang Kabupaten Jepara Jawa Tengah, Surakarta: FKIP UNS, 2019.
[2] Z. Farisa, Kepemimpinan K.H. Muh. As’ad Umar Dalam Mengembangkan Pondok Pesantren Darul 1 Rejoso, Peterongan, Jombang Jawa Timur (1985-2010), Yogyakarta: UIN Sunan Kalijaga, 2019.
[3] P. Tantry, "Pembelajaran PAI Dalam Kurikulum Unifikasi (Studi Kasus di SMA Trensains Tebuiren Jombang)," UIN Maulana Malik Ibrahim, Malang, 2016.
[4] A. Hidayah, Akses Teknologi dan Informasi Di Pondok Pesantren Bahrul Ulum Tampakberas Jombang, Program Studi Ilmu Komunikasi, Fakultas Ilmu Sosial dan Ilmu Politik Universitas Muhammadiyah Sidoarjo, 2016.

[5] K. u. Rehman and M. N. A. Khan, "The Foremost Guidelines for Achieving Higher Ranking in Search Result through Search Engine Optimization," International Journal of Advance Science and Technology, vol. 5, pp. 101-110, 2013.

[6] M. Fajar, Y. F. A. W and Shaufiah, "Analisis dan Implementasi Teknik Search Engine Optimization (SEO) dalam Meningkatkan Trafik Kunjungan Suatu Website," Telkom University, Bandung, 2009.

[7] A. Sohail, Search Engine Optimization Methods & Search Engine Indexing For CMS Applications, Lappeenranta University of Technology, Faculty of Technology Management, Degree Program in Information & Communication, 2002.

[8] T. C. Ooi, H. W. L. Ho and S. Amri, "Education Websites and Their Benefits to Potential International Students: A Case Study of Higher Education Service Providers in Malaysia," 2010.

[9] S. N. Wahyuni and D. A. Wijaya, "Penerapan dan Optimasi Riset Keyword Dengan Teknik Allintitll pada Mesin Pencari Google," Jurnal Mantik Penusa, Vol. 2, No. 2, Desember 2018.

[10] I. Handayani, E. Febriyanto and M. Shofwatullah, "Optimalisasi Visibilitas Situs iLearning Jurnal Ci (iJC) pada Mesin Pencari Berbasis Search Engine Optimization (SEO) On Page," SATIN- Sains dan Teknologi Informasi, Vol. 5, No. 1, Juni 2019.

[11] Himawan, Arisantoso and A. Saefulhak, "Search Engine Optimization (SEO) Menggunakan Metode V Hat," in Prosiding SNATIF Ke-4 Tahun 2017, Tangerang.

[12] R. Harminingtyas, "Analisis Layanan Website Sebagai Media Promosi, Media Transaksi dan Media Informasi dan Pengaruhnya Terhadap Brand Image Perusahaan Pada Hotel Ciputra di Kota Semarang," Jurnal STIE Semarang, Vol. 6, No 3, Edisi Oktober 2014.

[13] A. Fuzi and W. I. Pradipta, "Research Methods and Data Analysis Techniques in Education Articles Published By Indonesian Biology Educational Journals," JPBI (Jurnal Pendidikan Biologi Indonesia) Vols. 4, No. 2, Tahun 2018, pp. 123-134, 2018.

[14] E. Triandini, S. Jayanatha, A. Indrawan, G. W. Putra and B. Iswara, "Metode Systematic Literature Review untuk Identifikasi Platform dan Metode Pengembangan Sistem Informasi di Indonesia," Indonesian Journal of Information Systems (IJIS), Vol. 1, No. 2, Februari 209, pp. 63-77.

[15] S. Rahman, Jago Membuat Website & SEO, Jakarta: PT. Elex Media Komputindo (Kompas Gramedia, 2020.

[16] A. W. Triyanto and N. Susanti, "Optimasi Meta Tag HTML untuk Meningkatkan Search Engine Optimization (SEO) pada Website E-Commerce UMKM," Indonesian Journal on Networking and Security, Vol. 6, No 4, 2017.

[17] J. L. Ledford and M. E. Tyler, Google Analytics 2.0, Wiley Publishing, Inc, 2007.

[18] J. L. Ledford, "SEO Search Engine Optimization Bible," Wiley Publishing, Inc., Indianapolis, Indiana, 2007.