

# CONNECTING MINDS: THE SEO REVOLUTION FOR INCLUSIVE EDUCATIONAL ACCESS

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## Article Info

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## Abstract

The rapid proliferation and widespread adoption of Web 2.0 websites and Internet/desktop applications have ushered in an era where students are empowered with an unprecedented wealth of information and a vast network of knowledge resources, all accessible with a simple click. This technological evolution has transformed the conventional methods of acquiring knowledge, eliminating the need for traditional approaches such as perusing books or visiting libraries. For the contemporary internet user or student, accessing the definition of a new term or solving a complex mathematical equation is just a click away. The scope of writing an essay on a favorite personality has transcended the confines of a limited set of 10 specific names, with platforms like Wikipedia providing expansive information.

The virtual realm has revolutionized exploration and learning, allowing individuals to traverse countries or tourist destinations virtually before physically visiting them. Platforms like YouTube have become instrumental in democratizing the acquisition of various arts and techniques through instructional videos. Social media has flourished, offering countless avenues to make friends, join groups, and engage in discussions on diverse topics through forums or dedicated social media groups. Additionally, the landscape of news dissemination has undergone a radical shift, breaking free from the constraints of print media and permeating various online platforms, from social media to dedicated websites and discussion forums.

This transformative shift in the dynamics of information access has not only altered the learning landscape but has also redefined the way individuals interact, share, and disseminate information. This paper explores the profound impact of Web 2.0 technologies on education, information dissemination, and social interaction. By examining the changes brought about by these technologies, we aim to understand the implications for students, educators, and society at large. The investigation encompasses diverse facets, including the evolving

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nature of research methodologies, the democratization of knowledge, and the changing dynamics of social connectivity.

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## Introduction

The powerful dynamic evolution and mass adoption of Web 2.0 websites and Internet or desktop applications is creating an unprecedented wave of students empowered with a huge bulk of information, network of knowledge resources that are simply clicks away. Just on push button all knowledge and information is in front of them. They don't have to use typical methods of going through books or visiting libraries. For a common internet user or any student, this is not a new thing to find the definition of a new term or solution of a complex mathematical equation or theorem on internet. Writing an essay on my favorite personality is not limited to just 10 specific names now Wikipedia make it easy. You can visit any country or tourist place virtually before actually moving there. You can easily learn any art or technique through videos using YouTube. Countless social Medias where you can make friend, join groups and discuss any matter on forums or social media groups. News are no more bound to print media now it's everywhere from social media to website or even on discussion forums.

Hence we can say that today these so many websites surely help students a lot from finding the definition of a new term, meaning of an word, translate any conversation from one language to another or solution to a academic problem such as Wikipedia or YouTube, to countless famous social media websites and open public communities that help answer our any issue or questions faster within minutes from all over the world, also they are more accurate and indeed free, the Internet is changing the entire setup of education and learning strongly using the word e-learning or e-education. Students of this epoch become keen users of web based and cyber world technologies. Therefore the educationists have taken this opportunity to instigate learning and promote engagement through the use of Web 2.0 software such as EFL blog [1, 4, 5].

### **I. Efl Blog from General Public to Targeted Audience**

From last 3-year case studies and researches, it is clear that many students focus on sharing their work or writing to everyone rather a college student or university scholar or every a house-wife who tries new recipes and she will definitely like to share with her friends or general public to let others know about that and follow the same or provide them with their feedbacks. Today's research studies [3] always support this lively trend of sharing knowledge to general public specially where the students are sharing their work and making their writing public. This is easily accessible to everyone and also for those who are seeking that particular information. Sharing you all knowledge or writing to public is something very critical. Public writing in college or universities surely promotes their writing ability and to see themselves as responsible writers, to view their own-work from public perspective or as a social activity, this trend provides a lot of interaction on that piece of knowledge which is being shared on forums, social media websites. It motivates writing culture among college or university students. Writing from private to public is something responsible work as well. By Observing the typical trend where student submit their work or knowledge ONLY to the teacher for evolution and feedback or grading. Here all general audience watch you work and evaluate and give you accurate feedback without being biased.

In spite of all these above-mentioned benefits, to find EDUCATION FOR ALL Blog out of millions of others blogs having same niche in search engine result pages [SERPs] can be comparable as finding a needle in the ocean. Auspiciously business organizations specially software houses in the industry of development and marketing have worked out Search Engine Optimization (SEO) solutions for the problem. SEO refers to the process of improving the ranking, increasing the of a website in 'search engines' results which is technically called as SERPs [Search Engine Result pages]. The process of affecting the visibility of web page in a search engine be

may organic or paid-organic results. The higher the ranking of a website the more it appears to public and surely the website gets traffic. Traffic is the main objective to improve ranking in Search Engine. SEO target different types of searches, including web images, local or global search, video search, educational/academic search, news search and industry-specific vertical search engines. According to survey in 2012 the six pillars of SEO with significance are: Link building [Links], Social Media websites, Content is the king, Accessibility, scalability and Usability. SEO is typically merger of ON-PAGE OPTIMIZATION [Table-3] and OFFPAGE OPTIMIZATION. Popular search engines are programmed to rank websites based on their popularity and relevancy. This popularity in SEO need Off-page optimization where you perform many strong viral marketing activities to let public know against particular relevant Keywords. As today the number of websites against any particular theme is growing day by day and the competition is getting strong to get top ranking in search engine. SEO has become a granted success factor for doing online business these days.

## **II. The Open Source Efa Blog**

Education for all blog called “EFA Blog” (Figure 1) is developed in an open-source language using WordPress blog platform in a LAMP (Apache, MySQL, Linux and PHP) environment.

WordPress.com is perhaps the most feature-rich blogging service out there. Open source is accessible to anyone and anybody can use it to make blog. Platforms like WordPress which is the most popular opensource blog software nowadays today. It is free, easy to install, use and customize. There are many others as well like Blogger, Blog.com, Type Pad Micro and Jux etc. WordPress.com uses the popular open-source web software WordPress, and offers many features in its free version — traffic stats, antispam filters, SEO, gorgeous themes and more. Whether you’re an expert blogger or a beginner, this ultimate platform is easy to use. It is being used by many software-based companies, website developers and common users because it offers extensive option, plenty of feature-rich themes, all sort of web 2.0 plug-ins and widgets. [6]. The “EFA Blog” was designed and developed by using a SEO-friendly WordPress theme called “Edvewin”. Categories, Achieves and having tag Cloud displayed on the right sidebar [containing all famous keyword being used in this blog], and the daily blog posts [word count of 300 to 450 words which is considered to be standard for blog writing] are displayed in two column formats on the left side. The blog is defined in a way that it displays maximum of 15-20 blog posts or writing each page. RSS feed for posts is displayed in the top-right corner which will generate an alert for regular readers and send them an email about any new blog post. The main landing page which About Us webpage and Login page are displayed on the top which is the typical trend as well in blogging. In terms of writing all blog posts are indexed in the back-end database and a search box was provided on top of each page which allows users to find blog posts by keywords. The keyword tag will help them to know about popular keywords. All sort of blog writing is made public viewable. The posting and blog commenting are restricted to authorized visitors only to avoid spamming by machine bots. Admin will receive public views and after the approval of admin panel all comments will be displayed. Moreover, only blog admin will decide to give access for blog writing and posting. Moving from general blog visitors to targeted audience, the search of EFA BLOG is made focused with SEO snippet, description, title, keywords and Meta /header tags which were mentioned in Section II.

## **III. Scrutiny and Repercussion**

Once we have completed the design and layout of our EFA blog, we then make a team of 50 students from Computer science department in UTP whose responsibility is to write and post 500 blog posts [maximum 350-430 word count] in 15 week time period. After successful completion of this time period, we have total 500 posts on our EFA blog and 1000 comments on different post of EFA blog writings. For analysis and monitoring of traffic on our EFA blog we have installed Google analytics in the landing home page source code Figure-2, its main purpose is to track record of coming visitors, popular pages, demographics, bounce rate and rather it’s a

referral traffic or direct traffic. We came up with the result that within the 15 weeks, there were total 5,320 visits, including 2,412 unique visitors which are referred visitors and 15,412 per page views ( 241 page views/day), which yielded 6.84 average pages per visit. Average time on site was 9 minutes 20 seconds which is a good sign. The bounce rate of blog is only 4% which shows that our traffic is more focused and targeted. Also content plays a strong role in Blogging as we restrict our writing team to write on different educational topics i.e. computer science topics, IT news or computer engineering blog post .Moreover we also post many famous theorems solutions as well which are part of computer science everywhere. We allow our users to make comments in beginning and we get a good feedback 20 comments average blog post.

As we get 5,320 visits all over the world which contain unique 2,412 visitors as well from Internet users around the world. However our analytics facilitate use to see more accurate statistics represent the students using the EFL blog, a map overlay can be made narrow down to study the geographical information of the visitors to the country level i.e. from which part of any country a visitor come and how much time he/she spend on particular post and did they made any comment or just read the information. This statistics help us to make our blog more accurate and with focused audience. We also observe on which post visitors spend less time and what the reasons behind this are. For checking the Alexa ranking which shows the statistic of a website's popularity compared to all other websites of same niche. We get Alexa ranking of 22,342 and the in links total 450. Also using the technique where we write in search engine box Link: followed by our EFL blog's URL in Google, 541 inbound links (i.e., websites which contain a link of EFL blog site) were returned. For more accurate SEO link metrics we use SEOMOZ tool as well which shows that web page authority of 27/100, domain authority of 12/100, linking root domains of 5, and total links of 108. The statistical map shows visitors who write the keyword "EFA blog" in Google search engine, we get top 3 results which are from our blog in Search engine. All these 3 search results are about 1. Education for all on internet 2. Search Engine Optimization vs. Search Engine marketing 3. Pervasive computing concept in 2020.

#### IV. Conclusion

This study explored the results of "Education for all" Blog from general public visitors to focused traffic. Study also highlights the design, layout creation, implementation and later on traffic analysis after 15-week time period. We approached to make an SEO friendly blog in WordPress and focus on major aspects of SEO friendly blog. The research explores the interest of audience and getting feedback in terms of blog comments.



Figure1. Efa-Blog



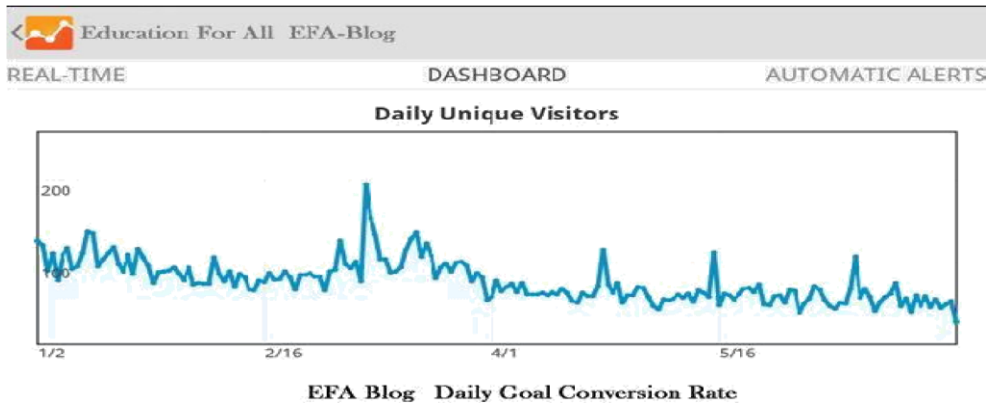


Figure2. Efa-Analytics

On-Page Search Engine Optimization Name	Implementation in EFA Blog
Page Titles	Available and need to be Changed in some pages.
URL Structure	Make it user Friendly and require rewriting of URL
Body Tags (H1, H2, H3, H4, etc.)	Available
Keyword Density	20%- 50%
Image ATLS	Done
Internal Linking	Available
Page speed analysis and Optimization	Loading time is accurate and fulfilling Google Speed limit. Need to be more accurate less than 2sec.
Audit of URL issues and optimization	After OFF-Page work
Content Optimization	Content need to be refreshed and formatted well with targeted KWS (as mentioned below).
Image Optimization	Image need to be optimized at some pages
Title tag optimization	Vary from Page to page
Meta Description and KW optimization	Need to be changed against targeted keywords [Keywords]
XML sitemap	Available
Google analytics	Available
Webmaster tool	Yes
RSS feed	Not available
Meta Data and On page Revision	Need to be refreshed
Meta data suggestion for dynamic pages	Every page need a Targeted Keyword and Targeted Meta tags
Dynamic pages meta data patterns implementation	No Dynamic Pages other than Products page
Image and hyperlink optimization	Need to be done
Robot.txt creation and analysis	Available
HTML sitemap creation and analysis	Available
Navigation analysis [Bread Crumbs]**	Not available in website
Internal link structuring and optimization	This need to be done well
SEO friendly URLs (URL rewriting)	Not Done
Google Analytics installation	Available
Google webmaster installation	Yes
title tag optimization	NA
meta tag optimization	Available per not optimized well
Header TAG optimization	Not optimized well
Anchor Text Inclusion	Need more Anchor text on images and footers
Body Text optimization	Content need to be changed and embed Keywords in it
URL rewriting	Need to be rewrite
Google yahoo and Bing site map upload	Available [Google only]
Footer Tag Creation/ Optimization	Not optimized
Keyword Density Report	Well no keywords in the Landing page Content.
Bold/ Strong Words Analysis	Not available
Homepage Content Rewrite	Yes. Refresh with related Keywords.
Internal Linking Structure analysis	Need SEO
Image Optimization	Not optimized
Relevancy	90% Relevancy with HEADER, IMAGE and CONTENT
Keywords Targeted	DONE ,Provided
Keywords Research	DONE Provided
Full website SEO audit include: Meta Tags updates, H1/H2 tags, Internal link	Provided [last page of this file]

Full website SEO audit include: Meta Tags updates, H1/H2 tags ,internal link	Provided [Last page of this file].
Improving navigational structure **	YES REQUIRED
Removing bad outbound links, fixing internal link structure, removing dead links	NOT REQUIRED
Optimizing design and page structure	YES, REQUIRED
Optimizing website information hierarchy	YES, REQUIRED
Optimizing content and content to keyword ratio	NOT DONE OFF PAGE SEO
Creating proper tags, anchor text links and image tags	YES REQUIRED
Finalizing readability and usability of your website	Need more content and images on some pages
Back link acquisition & link building	NEED OFF PAGE
Social media optimization & brand awareness	SOCIAL PLUGIN are available need SMM ,SMO completely

**Table 3: EFA- ON-PAGE**

#### References

- Baird, D. E., & Fisher, M. (2006). Neomillennial User Experience Design Strategies: Utilizing Social Networking Media to Support 'Always On' Learning Styles. *Journal of Education Technology Systems* 34 (1).
- Cabage, N. (2011, November 11). Six Pillars of SEO in 2012. Retrieved January 15, 2012, from iteratively: <http://iteratively.com/marketing/five-pillars-of-seo-in-2012/>
- Issacs, E. J., & Jackson, P. (Eds.). (2001). *Public Works: Student Writing as Public Text*. Boynton/Cook.
- Richardson, J. C., & Swan, K. (2003). Examining Social Presence in Online Courses in Relation to Students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks* , 7 (1), 68-88.
- Tetard, F., Patokorpi, E., & Packalen, K. (2009). Using wiki to support constructivist learning: a case study in university education settings. 42nd Hawaii International Conference on System Sciences, (pp. 1-10). Big Island, Hawaii.
- Top Blog platforms in 2013 with the use of embedded web2.0 <http://sixrevisions.com/tools/top-freeonline-blogging/>.