21st Century Pedagogy using Wikipedia

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Abstract

When the era of Constructivismis laced with a broad range of Web2.0 tools, a new form of learning has evolved. Knowledge construction and deconstruction has become easier as the means to write and rewrite information has continued to evolve. Wikipedia is one of the most powerful instruments through which this digital revolution of knowledge creation, co-creation and access has been redefined. This paper is a treatise, exploring the ease with which Wikipedia can be assimilated within the curriculum and how even a secondary school student can add to the immense world of knowledge.

Wikipedia is a free access, free content platform that offers every person the capability and easy-to-use tools to become a contributor of knowledge. Since its inception in 2001, the online encyclopaedia hasgrown with a burgeoning number of articles being added, modified and reviewed by contributors worldwide by the second. The very nature of the website is collaborative, thus enabling collective learning and cooperative exchange of information. Placing a student in this infinite space as a collaborative contributor of information, which is governed by the website's stringent governance policies and is open to review and critique across the world, makes him or her a conscientious creator of verified knowledge which consolidates the learning at the highest taxonomic level of education. This curricular integration

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of Wikipedia could thus be the very essence of constructivism, making it a highly desirable and viable method of digitising any pedagogy.

Keywords: Web2.0, Constructivism, Wikipedia

Introduction

Anderson and Krathwohl revised the Bloom's taxonomy in 2001to accord the creation of knowledge as the top most level of the cognitive learning domain. It is widely accepted that learning progresses to the highest echelons as students generate their knowledge through their experiences and ideas. Wikipedia is a vast free access free content platform that is open to individuals across the world with an internet connection. It offers a restructured effective learning environment that enables students to amalgamate their learning experience to generate knowledge which is both retained and comprehended better, transforming them into mature, self-motivated learners. (Heafner & Friedman - 2008).The ease with which information can be posted, accessed and reviewed on Wikipedia makes it a veritable treasure of learning. This web2.0 technology also enables the students to collaborate, thereby strengthening the overall learning. With the student populace being largely comprised of digital natives who are connected through the internet, the capabilities offered by Wikipedia are vast, thus making integration of Wikipedia contributions within the curriculum a real possibility. Education is getting redefined as we consider the ease with which knowledge, new and old gets created, co-created and revised through this seemingly simple website.

Need

Education has transformed over the ages, and the way we look at knowledge and learning has changed. With the plethora of tools that technology offers, especially of the Web2.0 and Web3.0 variety, collaborative knowledge building provides the students that edge which is required to stay ahead of the game in this day and age. The 21st-century learner needs to be engaged in a variety of ways, and it is essential to reaffirm to his or her digital origins. The learning must be emancipated to meet these needs through digital

constructivism where knowledge is both created and acquired by the student.

Wikipedia provides a 27 million user strong communal platform that allows for a diverse range of next generation learning strategies such as discussion forums, peer mentoring, collaborative learning, and inquiry-based learning through the 38 million plus pages that are updated almost every second.(Pusey & Meiselwitz - 2009). Wikipedia equips students with basic tools for collaborating online, creating and categorizing knowledge, and imparting this worldwide. It allows students to contribute, access and review others' content and hyper linking the correlated data, thus increasing their ownership of information content. As education reorients itself with a substantialresearch-based focus, it becomes imperative to encourage the students to break out of the traditional boundaries of classroom-centric curriculum and take charge of their learning with the requisite research skills.

Literature Review

In the research study conducted by Katzlinger & Herzog (2014),an inter-university collaborative learning setup was created using the wiki concept. Students were grouped in local and inter-regional teams and were given opportunity to discuss their case study work with their counterparts using email, video conferencing, social networks &forums, and chats in addition to wiki talkrooms.259 students participated in the survey conducted to gather information on student demographics and perception towards the setup. 90% of the students reported that wiki was extremely useful to discuss, document and organize individual tasks for their respective case studies within their learning groups. This is especially significant in the inter-regional group. These students also preferred the use of wiki to other social platforms. The study also concluded that the more familiar the students became with the wiki platform, the better their utilization of the platform and interest became. Teachers too welcomed the setup as it promoted self-regulated learning and review processes within the students, giving more autonomy to the learner to manage their learning.

Hazari & Moreland (2009) conducted an empirical study to investigate the capability of Web2.0 tools, in particular, that of blogs and wikis vis-à-vis student learning. They expound that blogs and wikis offer students an opportunity to articulate themselves and at the same time develop their skills of reading, writing, reflection and teamwork. They identified four key factors that were affected by the use of wiki tools, viz. motivation, learning, interaction within a group and technology under each five items were considered and adopted for the study. These 20 items determined the survey questions to capture the data of 70 student participants. The study concluded that wikis offer significant benefits as a teaching tool, promoting collaboration and engagement. The study also provided a demographical perspective of student satisfaction with wiki tools with a conclusion that male students found it easier to use wikis in comparison to female students as they spent more time on the internet. The researchers stressed that course content, instructional pedagogy and technology still play asignificant role in addition to use of wikis. The study then highlighted the best practices for the use of wikis in classroom constructs for designing an effective learning environment.

Ley & Langran (2012) conducted a study with 109 eighth grade students worked in groups to thresh out five wiki articles based on a social studies textbook chapter over three days. They identified three key variables in their study viz. historical thinking, collaboration and information literacy. Students were asked to write articles, review peer articles and modify them for style, grammar and reused content from other websites. The researchers showcased that there was reduced competition between the students and improved and healthy collaboration with the help of defined shared goals. Assessment of the quality of articles and the process of generating the articleswas done with the aid of a specially formulated rubric. Also, a survey was designed to capture the students' feedback on the overall program, which turned out to be a mostly positive experience for them. There was also a noted improvement in the students' ability to reflect upon their work as well as assess their peers and make qualitative improvements. They correlated the enhancement of the identified variables with the incorporation of wiki along with face to face discussion and

asynchronous communications between the teacher and student and also between students within the social studies curriculum.

Elgort, Smith &Toland (2008) published their analysis on whether wiki could be a suitable tool for group projects within the higher education context. Their research was conducted primarily with the help of student questionnaires for two-course groups based on the wiki activity conducted within the course plan. The first-coursegroup was that of a regular course with 17 students having a range of IT skills. The second-coursegroup was a combined course having face to face interaction as well as a distance learning program. The aim was to understand the attitude towards group work and in particular their perception of collaborative wiki-based projects within the two courses of varying nature. The study concluded that for the first course, most of the students worked well together in teams but 81% felt that the interactions were more fruitful in face to face mode rather than over online wikis. However, 67% of the students agreed that wikis helped to collect and organize data and 75% agreed that it was a superior means of submitting the assignment. Even for the second course, it was found that 94% students had a positive experience working in teams out of which 77% felt that wiki encouraged more collaborative participation in the project. 59% felt that wiki was a novel way of knowing the other course participants. The educators felt that the novelty of using wiki in assignments was key to student motivation and engagement. The history of wiki edits gave a holistic picture of the development of the wiki article and assessing the individual contributions. Thus the wiki experience was reported as mostly positive but with shades of preference of individual activity.

Enabling Teachers to Adopt Wikipedia

It is important first to enable the teacher educatorsto be aware of the promise held by this Web2.0 tool to enable students to create and publish Wikipedia articles. In fact, this practice was implementedas a part of the B.Ed. First-semestercurriculum at Christ University for the batch of 2015-17 comprising of 65 students. The teacher trainees began their Wikipedia journey with

the creation of student specific users on Wikipedia, with necessary faculty intervention wherever required.

The teacher trainees then participated in the Wikipedia Adventure, which is a key tutorial feature of the website that enables students to understand the way information is created, organized and governed within the Wikipedia framework. They then used the training acquired to write new Wikipedia articles of 500 words minimum in English and various Indian regional languages like Hindi, Kannada, Tamil, Assamese, and Gujarati, etc. These were reviewed by their peers, the faculty in charge as well as other members of the Wikipedia community. In the next phase, they updated existing Wikipedia articles with a minimum of 1000 words which underwent similar review. Some initial articles were deleted for not conforming to the requirements and policies set forth by Wikipedia which proved to be a learning experience for the contributors. A rubric was developed to assess their learning and regular feedback was collected and incorporated via a network of student mentors who worked with the faculty in charge to manage the overall experience. At the end of the three-month activity, a student evaluation sheet was filled in to trace their learning curve which was graded for final awarding of marks.

This activity primarily gave teacher trainees the insight of the potential of using Web2.0 tools within the classroom, especially collaborative wiki-based assignments for their students to in turn acquire an excellent, thorough understanding of concepts being taught within the curriculum.

Integrating Wikipedia within the curriculum
Similar to the Wikipedia experience designed for the teacher trainees, the teacher could provide training to the school students after which practice assignments could be given to students to review existing pages to modify grammar style or reword sentences. Once the student gains confidence, smaller initial assignments can be given to add sections to existing articles on the website with information collected from authentic and verified sources. This canbe followed by creation of information pages of the student's choice – individually or in a group. Various combinations and iterations of these assignments can be done

which is then open to peer review, teacher's review as well as an unbiasedconsideration by the Wikipedia editors. This allows for immediate feedback regarding the quality of the article contributed to the student by different people. The history of edit information allows the teacher to assess the student involvement and contributions, especially within collaborative contexts and grade the article refinement process accordingly. Suitable rubric could be designed to evaluate the student learning experience and grade them accordingly. The possibilities of using wiki-based assignments are endless and not restricted to any one subject or pedagogy. While it may appear to teachers as additional mentoring and management of online groups, wikis as a tool, in particular, Wikipedia offer more capabilities to the teacher as well.

Conclusion

In 2006, TIME magazine announced the "Person of the Year" as "You" as the year marked the beginning of the information revolution and advent of Web2.0 capabilities. It recognized the potential of a single person's contribution and the power of people networks in altering the way we see information, thus redefining the learning process. (Grossman 2006)

The differentiator of using Wikipedia as a collaborative learning Web2.0 tool is that it is highly user-friendly but still governed by strategic policies and rules that maintain content integrity. It is also accessible freely across the world to anyone with internet access thus enabling knowledge sharing across geographies and various age groups. The wiki tools of a simple,user-friendly interface, edit history, collaborative generation of data, community review, and hyper linking allow a multi-dimensional creation of knowledge that is interrelated and constantly growing, adding to the information sharing capabilities of every individual.

The digital boost given to the much powerful constructivist movement is also a force to reckon with. Every student can now construct his or her knowledge and needn't be stymied by technological skills or lack thereof. The students are also exposed to the fundamentals of research as they plow through various sources of information to accredit the articles they are authoring. They learn to read other research articles and relevant data sources, peer

review each other, write consistent and sound articles and collaborate with different persons to create the next generation of information, enabling the next generation of learners.

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