



# The Effects of Integrating Diigo Social Bookmarking into Schoology Learning Management System on EFL Learners' Autonomy and Use of Reading Strategies

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## Abstract

*Since its first appearance in pedagogy, Web-Enhanced Language Learning (WELL) has turned educators' eyes to a novel approach in education. Though many believed that the integration of web into learning environments would go no farther than one way teacher-learner interaction, the development of web 2.0 has added to the sociality of the web even more than ever before. According to the socio-constructivist approach, this sociality can encourage student-generated content, which in turn, can lead to more autonomy on the part of the learner. Although extensive research shows the effectiveness of web 2.0, especially social networks, in promoting language learning and learner autonomy in a traditional classroom setting, researchers have not treated the effectiveness of integrating social networks into the context of web-based Learning Management System (LMS) in much detail. This case study investigated the impact of learning with Schoology® (the LMS selected for this study) on learners' autonomy and use of reading strategies while incorporating Diigo®, a social bookmarking website. The participants were four upper intermediate EFL adult learners divided into two control and experimental pairs. The learners in both pairs received instruction on different reading strategies and practiced using them by bookmarking several articles on a given topic in Diigo over a 7-session treatment period. They used its toolbar to highlight, capture pictures, or tag different parts of the web content. Once a week, each pair prepared presentations based on their overall understanding of the content of the bookmarked links while focusing on a specific reading strategy. The control pair submitted their assignments to the instructor, presented their work to the class and received feedback in the conventional way. However, the experimental pair used the LMS as a platform to share the bookmarked links, upload their presentations on the assignment page, and receive teacher and peer feedback in the LMS discussion room. At the end of the treatment, the students in both pairs were compared in terms of their use of reading strategies, reading ability, and perception of learner autonomy.*

## 1. Introduction

With the rise of socio-cultural approaches, pedagogical web design has moved from "...consuming what was available on the Internet to producing the content on the Internet" [1]. Popularized by Tim O'Reilly [2], Web 2.0 has been introduced as an environment where knowledge is created, shared, remixed, repurposed, and passed along [3]. The building of Learning Management Systems (LMS) or open-source learning systems which offers the chance of creating online classes is an example of web 2.0 educational affordances. This learner-specific environment promotes learner autonomy as it facilitates taking charge of one's own learning and allows for inter-relational development of mutual interaction between learners and teachers [4].

## 2. A Cutting Edge in Web-based Technologies

Lee, Williams and Kim [5] regard sociality as the essential foundation of web applications. The web tools that are being used now have different functions, namely, helping the user stay organized (graphic organizers and social bookmarking tools), enabling the user to communicate and collaborate (instant messaging, blogs, and wikis), presenting content (screencasting and podcasting tools), assisting the instructor to assess learning, (e-portfolios and learning management systems), and enabling the user to transform their identities (virtual worlds and social networks).

### 2.1 Learning Management System

The electronic learning management system (LMS) is a recently introduced web-based tool which offers the possibility to deliver online courses accompanied by electronic tools such as discussion board files, grade book, electronic mail, announcements, assessments, and multimedia elements to



manage the course [6]. LMS encourages students to take the responsibility of their learning and use their creativity to utilize the aiding tools at their hands [7], thus fostering learner autonomy.

## 2.2 Bookmarking

The notion of Social Book Marking System (SBMS) has been developed through the sociality attributes of web 2.0, and is used to store and organize website pages or any content of a website like images or texts. It gives the user the 'tag' option to describe the stored URL, so that it can be easily identified by other users of the same interest [1]. As an educational tool, it enables the teacher to create a group and bookmark the websites about the desired topic for its members. It also enables the students to bookmark additional materials themselves, share them with their peers, and engage them in the process of building course content. Diigo - defined as one of the tools of exceptional value to inquiry-based teaching and learning [8] – is an instance of SBMS which resembles the popular social networks such as 'Facebook' and Twitter' as the users can like and comment on each others' bookmarks.

## 3. Web-enhanced Reading

With the rapid growth of the free and synchronous series of online databases and communication services, the need for learning a foreign language and developing computer literacy is increasing. More importantly, reading is the primary mode of Internet communication, which necessitates knowing the useful fundamental reading strategies required for comprehending a text. Hence, the functions of web 2.0 tools in computer-assisted language learning can be of prime importance in the development of such strategies and enhancement of both digital and language literacy.

## 4. Learner Autonomy in Web-based Learning Environments

Factors such as lack of motivation, limited experience of independent learning, and fixed curriculum hinder the development of learner autonomy in a natural language classroom [9]. However, the web environment is mainly learner-centered, is not built strictly around the curricula, and generates the sense of responsibility in the user-learner. This conforms to the definition of an autonomous learner who takes responsibility of his learning, monitors the learning progress, can self-evaluate, and deal with his learning problems without the teacher's intervention [10] and [11].

## 5. The Study

### 5.1 Research Question

This study addressed the following research question:

To what extent does the integration of web 2.0 social bookmarking into a Learning Management System affects EFL learners' autonomy and use of reading strategies?

### 5.2 Participants

The present case study was conducted at a small scale in order to provide the researchers with some insight prior to the actual study. Therefore, only four upper intermediate female students aged between 13 and 19, with low to average computer skills, were chosen as the participants of this study. They were randomly assigned to one control and one experimental pair. The control pair received instruction on how to use reading strategies and practiced using them by bookmarking articles with Diigo social bookmarking on the Internet, while the experimental pair received the same instruction and practiced the strategies by including the Diigo bookmarks in Schoology learning management system.

### 5.3 Instruments and Materials

The following instruments were used to collect the required data:

- a. A reading comprehension pre-test
- b. An autonomy questionnaire [12]
- c. A reading comprehension post-test
- d. Two Diigo® accounts to invite the participants to join the network
- e. One Schoology® account to create the online class for the experimental group
- f. A video tutorial detailing the steps in using the required web tools

### 5.4 Procedure

At the outset of the study, a reading comprehension pre-test and an attitude to autonomy questionnaire were given to the participants. Then the participants were provided with a timetable



regarding the reading strategy to be taught and the topic to be searched for. The target reading strategies included using context clues, scanning and skimming, finding the topic and the main idea, identifying the supporting details, understanding the connecting words, and making inferences. Next, a training session was held to prepare the participants for using the bookmarking tool and the LMS. In the course of the treatment, each session the students learnt about a reading strategy through interactive power point slides and received some related exercise sheets as controlled practice. Then as a free form of practice, they were asked to search for the topic of the day on the Internet, find several articles, bookmark them in their Diigo accounts, and share them with their peers. While enjoying what their classmates had bookmarked, the students also practiced the reading strategy of the day. The following session, before moving to a new reading strategy, the students presented a summary of the bookmarked articles in the power point slides, which required them to employ the learnt reading strategies. Then the teacher asked them several comprehension check questions. However, in the experimental pair, the bookmarks were posted by the students in the discussion room of the Learning Management System (Schoology), where they were viewed and discussed by the teacher and the learners. Once all the bookmarks had been viewed, the summary presentation assignment was given to the students with an exact submission time and date using the features of Schoology. The uploaded assignments were then collected and scored by the instructor and discussed in LMS's chat room. The participants could view their peers' uploads there and comment on them, while the instructor posted some comprehension check questions about the summaries for them to answer. All the materials presented in the class were available to the students on the LMS. In the control pair, the same activities were performed as in a conventional class. Finally, a reading comprehension posttest and the same autonomy questionnaire were given to the participants to check the effects of the treatment.

## 6. Data collection and results

Initially, the pairs were given a multiple-choice reading pretest measuring their use of reading strategies. They were also asked to fill in an autonomy questionnaire. The results indicated that there were no significant differences between the control and experimental pairs in terms of autonomy and reading strategy use. After the 7-week treatment period, the same autonomy questionnaire and a multiple-choice reading posttest measuring reading strategy use were given to the students. The results indicated that the experimental pair had obtained a slightly higher mean score on the second administration of the autonomy questionnaire, which was not significantly different from the first one. The control pair had predictably scored almost the same on this instrument as on its first administration. Nevertheless, the comparison of the mean scores of the two pairs on the reading strategy posttest indicated that the experimental pair had significantly outperformed the control pair in terms of their use of reading strategies.

## 7. Discussion

This study investigated the effects of the integration of social bookmarking into a learning management system on EFL learners' autonomy and use of reading strategies. Apparently, the use of this technique did not significantly affect the participants' sense of autonomy. The experimental pair improved its autonomy score slightly. The researchers attribute this to the possibility that, while the LMS provides L2 learners with a less controlled learning environment, the integration of social bookmarking into this system, helps them to move from being consumers to creators of online materials. However, it seems that 7 weeks was not long enough for the treatment to lead to significant changes in the learners' sense of autonomy. This prompted the researchers to carry out a full-scale study on the same variables over a longer period.

However, a comparison of the pairs' mean scores on the reading strategy posttest indicated that the experimental pair had significantly outperformed the control pair, providing support for the efficiency of the LMS in helping the learners to employ more reading strategies and, possibly, become better L2 readers.

In course of the experiment, the researchers observed several interesting facts. The participants entered the study with a rather low level of computer skills. However, at the end of the course, both control and experimental pairs had noticeably progressed in this area and stated that they had enjoyed using the technological tools used in this study, which granted them more freedom in terms of the time and place of learning. The experimental pair felt more strongly in this regard since all the learning aids, such as the resources and exercises, were only a few clicks away from them anytime and anywhere during the course. They also believed that the access to the Internet in the class was a motivating element for them in the process of learning.

Besides, in a feedback session at the end of the course, the experimental pair stated that the LMS had affected their sense of autonomy. This was because not only could they freely interact with the other learners and their teacher even after the class time, but they could also submit their assignments and participate in discussions, knowing that all of them were being observed and controlled by the teacher through the learning management system.

Finally, the students were quite surprised to see how applying reading strategies could facilitate their understanding of a text. All four participants stated that they did not know, at least consciously, that such strategies existed. More importantly, they were satisfied with the way they could use the reading strategies to understand authentic English texts on the Internet. Interestingly enough, the experimental pair expressed their willingness in attending other similar courses and said that they would recommend their friends to volunteer for future classes of this type. Overall, the findings of this case study convinced the researchers that it was worth repeating the same experience in large classes in the course of a full semester.

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