

ESL students' perceptions of using a social bookmarking tool for the development of reading in a second language

Oksana Vorobel

*Borough of Manhattan Community College, City University of New York
ovorobel@bmcc.cuny.edu*

T. Voorhees

*Borough of Manhattan Community College, City University of New York
tvoorhees@bmcc.cuny.edu*

Deniz Gokcora

*Borough of Manhattan Community College, City University of New York
sgokcora@bmcc.cuny.edu*

Building on research on the development of reading and use of technology for language learning, this multiple-case study explored English as a second language (ESL) students' perceptions of using a social bookmarking Web 2.0 tool for the development of reading from an ecological perspective. Five students in a community college ESL course in the northeastern part of the USA participated in the study. The data sources included interviews, observations, e-journals, and artifacts. Thorough within-case and cross-case analysis of data revealed a number of Diigo affordances which ESL students found beneficial for their development of reading, the role of context and mode, participants' collaborative stance, and various aspects of influence Diigo had on ESL students' development of reading. The findings and discussion of the study highlight the role of social bookmarking tools in raising ESL students' motivation and engagement in reading. The study offers suggestions for further research and implications for practice.

Keywords: social bookmarking tools; second language reading; collaborative learning; interactive learning environments; learning communities; ecological perspective

Technology has become an important component of all spheres of our life, including education. In most cases, students – digital natives – expect to use technology in their classes for enhanced efficiency and access to learning materials (Prensky, 2011). Over the course of several decades, technology has influenced and transformed the content, contexts, means, and ways of studying. For example, reading online using technology

has become an essential required literacy activity for most people, including students (Lin, 2011). Such rapid drastic changes have created numerous challenges for educators and scholars in terms of effective implementation of innovative technological tools in teaching. Simultaneously, technology provides educators with various ways to enhance their teaching and students' learning with new affordances that is, opportunities for learning (Brill & Galloway, 2007; van Lier, 2004).

In the area of second language (L2) reading, many researchers started exploring the influence of technology by investigating differences between reading a conventional book and reading online (Davis & Lyman-Hager, 1997; Stakhnevich, 2002). Later, development of technology from Web 1.0 to Web 2.0 afforded its use not as a mere access to information, but as a means of creation, participation, and collaboration (Tu, Blocher, & Ntoruru, 2008). Today, discussion boards, blogs, wikis, and other Web 2.0 tools serve as platforms for learners' communication, collaboration, and creation of classroom communities (Alharbi, 2015; Dippold, 2009; Kessler, 2009).

While there have been a number of studies on the use of Web 2.0 tools in L2 learning and teaching, few researchers have explored the use of social bookmarking tools for the development of reading in L2 (Prichard, 2010). Meanwhile, such websites as Delicious and Diigo are widely used by students and educators, including in L2 courses. Thus, in this study, we address this gap in research by exploring ESL students' perceptions of using a social bookmarking tool, Diigo, as a platform with rather universal features of design – bookmarking and sharing materials, for the development of reading in L2. The findings of the study will inform researchers and practitioners of the role of a social bookmarking tool in L2 reading development.

Theoretical framework and literature review

Ecological perspective

The ecological perspective on language learning (van Lier, 2004) served as a theoretical lens in this study. From an ecological perspective, language learning should be explored in the context or environment, which is a larger organism with various meanings and affordances for interaction and learning. Language learners are seen as active members in the environment who perceive affordances, interpret them, and act accordingly. Perceptions are, therefore, crucial in the process of learning because during this first stage students perceive affordances in the context and interpret them as relevant or not, which further determines whether the learners will choose to employ these affordances and proceed to action accordingly. Based on our theoretical framework, our view of reading is in alignment with those who approach it as a constructive meaning-making social process with readers' dialogues, interaction, and transaction between the readers and the text, situated in a certain context or environment (Bakhtin, 1986; Gee, 2000, 2001b; Rosenblatt, 1982). Approaching reading as a social process from an ecological perspective implies holistically and critically embracing contextual factors and cognitive and social processes as well as taking into account the identities of readers, discourse, culture, and society (Gee, 2000, 2001a, 2001b; van Lier, 2004; Warschauer, 1999).

Technology and L2 reading

With the vast expansion of technology in all spheres of our lives, researchers have started exploring the use of technology for L2 reading and developing technology tools to enhance L2 learning. Web 2.0 tools for L2 reading include, for example, online dictionaries, bookmarking and annotation websites, and a number of Web-based activities and training programs, which target various aspects of reading comprehension (Chun, 2006). In the subsequent sections of this literature review, we provide a brief overview of research studies on technology and its influence on L2 reading comprehension and collaborative L2 reading with technology.

Technology and L2 reading comprehension. According to Grabe (2009), knowledge of vocabulary and grammar is essential for reading comprehension in L2. A number of studies have provided evidence of the positive influence and effective use of technology for expanding L2 vocabulary knowledge. In particular, research suggests that L2 learners benefit from (a) online dictionaries when working at reading tasks (Tseng, 2009); (b) multimedia glossaries that is, text and picture information (Yanguas, 2009); and (c) computer programs with comprehensible English texts designed to offer frequent exposure to the target vocabulary units (Huang & Liou, 2007). In addition, a variety of Web 2.0 tools afford L2 learners a number of ways to improve their grammar knowledge in L2. Specifically, L2 learners can improve their understanding of patterns of language use through large corpora of authentic linguistic texts (Vannestål & Lindquist, 2007). Students can also develop their L2 syntactic awareness through computer-mediated feedback (Sauro, 2009). Thus, the effective use of various Web 2.0 tools and computer programs targeting vocabulary and grammar can enhance L2 learners' reading comprehension.

Collaborative L2 reading and technology. A wide range of affordances of Web 2.0 tools has brought new venues for collaborative L2 reading, which can be broadly defined as any reading activity that involves L2 learners' discussion either with other students and/or with the teacher (Yu, 2014). Engaging in reading discussions online allows for flexibility in time and place, more opportunities for reflection and analysis, and equality in participation. It also improves reading comprehension and L2 proficiency while bringing a number of challenges, such as a lack of immediate feedback, an inability to determine the tone, the typing speed, technological problems and discouragement (Coffey, 2012; Lan, Sung, & Chang, 2009).

Looking at the various Web 2.0 tools for L2 collaborative reading, most studies have focused on the use of online annotation programs (Chang & Hsu, 2011). Their findings show that online annotations promoted and enhanced L2 readers' knowledge sharing, interaction and collaboration, higher-level cognitive abilities (analyzing, summarizing, and evaluating), vocabulary knowledge, and reading proficiency in L2 (Yang, Zhang, Su, & Tsai, 2011). Some L2 students, however, found online annotation sharing targeting new vocabulary unhelpful and distracting when their peers with the same or lower level of reading proficiency shared annotations with words that were not new for them. Those students perceived such annotations as disruptive and useless (Hsu, Hwang, & Chang, 2013).

One of the most popular bookmarking Web 2.0 tools is Diigo, short for Digest of Internet Information, Groups and Other Stuff (Ruffini, 2011). It is an online social bookmarking tool, which affords users the chance to create private groups, share and comment on information, annotate, and tag. Diigo is free to use for educators and students,

which might situate this social bookmarking tool in conversation with Open Educational Resources (OER). Furthermore, it takes an easy approval process to have an account upgraded to Diigo Educator in order to get access to a number of advanced features, including the ability to create and manage students' accounts.

In the first language (L1) research on Diigo, pre-service teachers used sticky notes and comment features in Diigo for discussing the use of Google forms in an education technology course. The findings show the participants' high motivation, self-reflection, and support for others (Gao, 2013). In Lu and Deng's study (2012), high school students used two features of Diigo, highlighting and sticky notes, when they worked at critical reading tasks in L1. Lu and Deng found that Diigo enhanced the participants' higher order and critical thinking skills and developed a positive attitude to this social bookmarking tool. Castek, Beach, Cotanch, and Scott's (2014) study on middle school science students' annotations in Diigo revealed that students read texts more actively and used them for a variety of purposes, such as asking questions, requesting evidence from classmates to answer questions, and making judgments about the scientific texts.

Research on the use of Diigo for L2 reading development is scarce. Few studies with L2 participants investigated the use of this social bookmarking tool in relation to reading. In English as a Foreign Language (EFL) context, Prichard (2010) explored the influence of Diigo on L2 students' independent reading in an English reading class at a private university in Japan. Twenty-three intermediate-level English learners used Diigo for reading, summarizing, "liking," and tagging articles for their independent reading projects during one semester. Data sources included participants' artifacts and surveys. The findings of the study show that Diigo enhanced EFL students' interaction, improved their skills in searching articles and sites online, and contributed to their motivation to read in English online. The encountered challenges included technological problems with computer access and use as well as several summaries of low quality due to students' reading abilities or a lack of effort.

While Prichard's study provides an insight into the influence of Diigo on EFL learners' independent reading in English, the gap in the research literature highlights the need to conduct more studies, exploring English learners' perspectives on the use of social bookmarking tools for the development of reading in L2, including in ESL contexts. Furthermore, learning from emic voices of ESL students could help teachers implement social bookmarking tools for reading development more effectively. Therefore, to fill this gap in the research literature and enhance researchers' and practitioners' understanding of the use of social bookmarking tools for the development of reading in L2, we address the following research question:

- ✧ How do five focal ESL participants perceive the use of a social bookmarking tool for the development of reading in L2 in a community college course?

Method

Based on the guiding question, we designed this research as a qualitative multiple-case study (Stake, 2006) as the five cases were bound by time and context (Creswell, 2012). Noteworthy, the purpose of our research was not to generalize, but to explore and provide a rich description of all aspects of the study to enhance the reliability (Dzakiria, 2012) or transferability (Lincoln & Guba, 1985) of our findings to other contexts. In other words, we hope that the rich description of the study will help the readers see the relevance and value of this qualitative research study to their contexts (Geertz, 1973). As this study is a

naturalistic inquiry (Lincoln & Guba, 1985), we did not measure our ESL participants' reading ability before and after their use of Diigo, and it was not part of the students' coursework. Instead, we focused on exploring their perceptions of the use of a social bookmarking tool for the development of reading in L2 in a community college course.

Participants

The recruitment of the participants for our study started with purposefully sampling the ESL course where the professor, also a co-researcher, was using a social bookmarking tool for L2 reading development (Creswell, 2012). Next, we invited all 22 students in the course to participate. Finally, we purposefully selected five focal participants (Duhahude, Jennelle, Manik, Naruto, and Syful) because they (a) attended all class meetings related to the use of Diigo, (b) submitted all assignments relevant to our research question, and (c) participated in all stages of data collection. The participants' age ranged between 19–25 years old. Four of them (Duhahude, Manik, Naruto, and Syful) were male, and one (Jennelle) was female. Manik and Syful were from Bangladesh with Bengali as their L1. Naruto and Jennelle were born in the USA and raised in the Dominican Republic with Spanish as their L1. Finally, Duhahude was from Burkina Faso with Dioula as his L1. The length of participants' stay in the USA ranged from 1 to 5 years. The participants had been learning English as an L2 for 10–13 years. All of them spoke other languages in addition to their L1 and English and majored in different programs (see Appendix A). Overall, all participants had positive perceptions of technology in general and technology for learning (see Appendix B).

Context

We conducted our study in a community college, one of seven two-year colleges within a large university system in the northeastern part of the USA. Most students in the college receive financial aid and are the first generation in their family to continue their education after high school. Our focal participants were all students in the advanced-level ESL intensive writing course, designed to prepare students for college-level academic writing. By the end of the course, the students were expected to (a) read effectively, (b) identify, summarize, and analyze main ideas in a text, and (c) critically respond to a key idea or ideas in an essay. The curriculum of the course included reading short passages in a timed situation, critically analyzing texts, and responding to significant ideas. Upon completion of the course, the results of a standardized writing test determined if students could exit the ESL writing program. The test included students' reading an excerpt of the text, selecting a significant idea, and critically responding to it in an essay.

The course met face-to-face for 6 hours per week. Twice a month or every other week, the professor, Melody, reserved the ESL lab where students mostly worked at their reading assignments synchronously with Diigo. At the beginning of the semester, the professor provided training for the students on how to use Diigo. Her goal of incorporating this social bookmarking tool in the course was to engage students in reading more. Melody created a private group in Diigo so that only the students in the course could participate and have access to their postings (see Figure 1 for the screenshot of the homepage in Diigo).

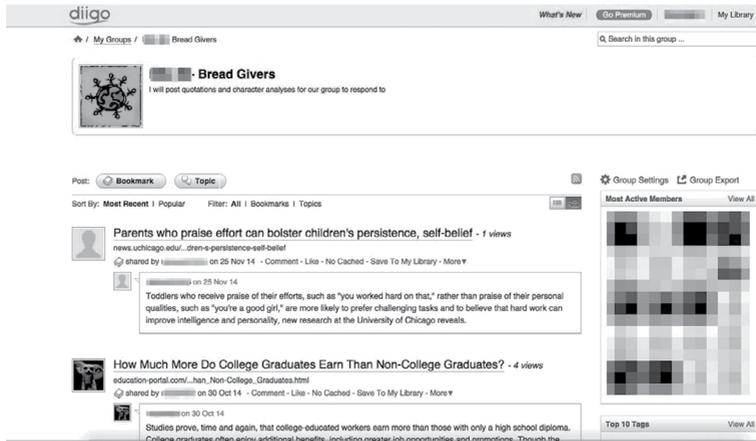


Fig. 1. Screenshot of the homepage of the Diigo group.

The students were to bookmark articles related to the topic under discussion, post one-paragraph summaries of the bookmarked articles, and respond to other students' postings.

Noteworthy, the students also worked in Diigo asynchronously in the out-of-classroom context, either as part of their homework or voluntarily. While the students worked on some assignments in the course in groups and pairs, they were asked to bookmark articles and write summaries in Diigo individually.

Data collection

The data collection lasted four months (September–December 2014). To ensure the ecological validity of the findings and discussion, data collection included multiple sources: interviews, observations, researchers' e-journals, and artifacts (Lincoln & Guba, 1985; van Lier, 2004). Specifically, we conducted two one-hour individual semi-structured interviews with ESL participants (in the middle and at the end of the semester; Kvale & Brinkmann, 2009).

In addition, we observed the participants for 3 hours 5 times during the semester. When selecting course meetings for observation, we particularly targeted those, which aimed at the use of the social bookmarking tool. While observing, we took detailed descriptive field notes on the context, participants, our reflections, ideas for subsequent data collection steps, and interpretations of the participants' behavior related to the use of Diigo and the development of reading. We audio-recorded all interviews and observations with Voice Memos, free software available for iPhone users.

Researchers' e-journals served the purpose of recording reflections at all stages of data collection. We wrote entries after each observation and interview with the participants. The professor-co-author also recorded her reflections on the implementation of Diigo in her course, students' progress, and the influence of Diigo on the participants' reading in L2. For writing e-journals, we chose penzu.com, a free Web 2.0 tool, which afforded private entries and sharing of entries upon permission. Finally, the participants' posts in Diigo and other relevant distributed handouts constituted the artifacts for this study.

Data analysis

We started analyzing data early – after the first round of interviews. The data collection and analysis in this study were spiral, inductive, and iterative (Creswell, 2012). This allowed us to develop and modify the next steps in data collection in order to better address the research question. First, we organized the data based on its type and in chronological order. Second, we transcribed the audio recordings of observations and interviews with Transcriptions and Dictation, free software for Mac, and Express Scribe, a similar free software program for PC. We also substituted our participants' names with the pseudonyms, which they selected during the interviews. After organization and preparation of the data, we proceeded with coding the data, constructing analytic categories, and uncovering emerging themes (Janesick, 2011).

For the *within-case analysis*, we analyzed data case-by case (Stake, 2006). In particular, we started with the data collected through interviews as our research question focused on the ESL participants' perceptions of the use of a social bookmarking tool for the development of reading in L2. We read and color-coded the relevant units to our guiding research question and created the names of the coded units based on their content – descriptive coding (e.g. “interest in the USA due to reading in Diigo” and “appreciation of diversity of info and sources”). When coding the rest of the data (transcribed audio-recordings of observations, field notes, researchers' e-journals, and participants' posts in Diigo), we kept in mind the codes from the interview data, but also constantly reflected on the relevance of the codes to the research question, evaluated their recurrence, and revised them based on the data from the other sources (Miles, Huberman, & Saldana, 2014). Noteworthy, when reading the data from observations and in Diigo, we interpreted the participants' actions and interactions, checked if they supported the interview data, and coded them accordingly. The observation and artifact data, for example, provided evidence and supported the participants' positive perceptions and active use of the affordance of commenting in Diigo. We similarly coded the data from the researchers' e-journals and field notes, checking if our reflections on all aspects of the study in these data sources support our developed list of codes and making corresponding changes.

After the first cycle of coding, we looked for the patterns in our codes (Merriam, 1998). These patterns allowed us to sort the codes into clusters or categories, based on their content and our research question (e.g. “development of vocabulary” and “commenting”). When creating categories, we evaluated them based on the list of criteria suggested by K. Richards (2003). Specifically, we checked if (a) the categories provided overarching umbrellas for the relevant codes and fit the data, (b) they were clearly defined and mutually exclusive, (c) they were coherent with the ecological perspective, and (d) they helped us understand the data. Afterwards, we looked for emerging themes (Janesick, 2011), grouping the categories in a set of themes, following the same procedure, as described above for category construction. When working at the cross-case analysis of data, we focused on similarities and differences in ESL students' perceptions of the use of the social bookmarking tool in the development of reading in L2. We revisited the initial codes and categories and revised themes based on their quality in terms of support from the data (Stake, 2006).

Data analysis for this study was done both independently and through collaboration. The researchers collaborated when transcribing and preparing data for the next stages of data analysis. The initial coding stage was done independently by one of the researchers. When developing categories and themes, the researchers collaborated on coding the

data excerpts that could have been assigned to several categories. All discrepancies were resolved through discussion. We acknowledge that our educational backgrounds, professional experiences in second and foreign language teaching and instructional technology, and worldviews played a role at all stages of conducting this study, including data analysis. Qualitative data analysis (coding, categorization or thematic analysis) is subjective in nature (Ryan & Bernard, 2003), which means that other researchers with the same data could have developed a different set of codes, categories, and themes. Nevertheless, we hope that we ensured and enhanced the trustworthiness of the findings (Lincoln & Guba, 1985) through triangulation of data collection, constant reflexivity at all stages of working on this study, thick description, and member checking (Perry, 2011).

Findings

The main goal of this research study was to explore five ESL students' perceptions of using a social bookmarking tool for the development of reading in the community college ESL course. Five major themes emerged from the data: (a) affordances of Diigo, (b) role of context and mode, (c) collaboration and a community of readers, (d) improvement of L2 reading, and (e) motivation. Each of the themes includes categories, which we describe and discuss in the subsequent parts of Findings and Discussion.

Affordances of Diigo

Four participants (Manik, Duhahude, Syful, and Jennelle) chose to discuss a number of affordances of the social bookmarking tool as important for their development of reading in L2. We further present them under the categories of (a) creating a large collection of diverse materials and (b) commenting.

Creating a large collection of diverse materials. All five participants stressed the importance of having an online platform, which could afford the creation of a large collection of reading materials. Specifically, the students appreciated the immediate access and ability to find reading materials on the topic without difficulty. Duhahude, for instance, said: "It [Diigo] was really helpful because the thing is I can find the information without going down many paths so that's why I like it most." The student further expressed the expectation and trust that the reading materials which the students posted in Diigo were interesting to read and contributed to the knowledge about the topic under study.

ESL students appreciated Diigo because as Syful said, "this website allow us to collect a lot of news articles." Similarly, Manik stated,

Other website could not tell you like that. Other website only give you one topic or one thing. Here we are 20-25 students, and 20-25 are using Diigo. And everyone's putting new each article so it's almost 20-30 articles.

Our analysis of the students' posts in Diigo and the observation data show the participants' active contribution to this online collection of sources on the topics assigned by the instructor. According to Manik, the diversity and amount of reading materials in the social bookmarking tool made him read more: "Diigo help us because every student have different article so when we see any different article we have to read that." Thus, the affordance of

a large collection of diverse reading materials in L2 which the students felt they needed to read to improve their L2 and reading in English.

Commenting. Manik, Syful, Jenelle, and Duhahude acknowledged the affordance of writing comments in Diigo. The participants considered the affordance of commenting important because it provided them with an opportunity to voice their opinions and, thus, to learn about the opinions of other students in their group. Jenelle said,

It's not only my opinion. I can listen what other people are saying because it is not only me, there is so many other students in this class, so it is really helpful. For example, now that we're in ESL class, I feel like they understand me because I'm another student so I can see their opinion about a topic. For example, from here and I can see the different point of view of each one, of each culture, so it's really good.

Jenelle acknowledged the diversity of their ESL multicultural group and pointed out that comments in the social bookmarking tool allowed her not only to read the opinions of other students, but also to learn about their thinking from a cultural standpoint.

Syful echoed Jenelle's perception and said,

It is absolutely essential because the comment... because different people have different way of express, different way of thinking, different way of writing, and different way of collecting information. So they comment on the topic, and on the topic... commenting for a lot of people... single topic can be understood easily.

Therefore, for Syful, commenting in the social bookmarking tool afforded learning from the diversity in student voices and contributed to his understanding of the topic.

Role of context and mode. When sharing their perspectives on the use of the social bookmarking tool for the development of reading in L2, the participants continued returning to the theme of context. In particular, they discussed the use of Diigo asynchronously out-of-school and synchronously with other students in the ESL computer lab during their class time.

Asynchronously out-of-school or synchronously in the ESL computer lab? According to the participants, the use of Diigo asynchronously out-of-school and synchronously in the ESL computer lab differed, with each mode and context contributing to the development of reading in L2 in a different way. The participants emphasized that it was difficult to compare them as each context and mode offered different experiences and affordances.

When working *asynchronously out-of-school*, the participants felt more focused on the task of using the social bookmarking tool and reading in L2. For instance, Duhahude said, "It is interesting to do it at home... to be more focused and to more concentrate, and do exactly your work: what exactly you want to say and what exactly you want to do." Having more time to focus and concentrate when using Diigo and reading in L2 contributed to feeling less pressure, according to Syful and Duhahude. Both Jenelle and Syful shared that using Diigo asynchronously out-of-classroom is important because the class meetings and class time are limited. Syful said that he uses Diigo mostly at home: "Because most of the time, I stay at home because I have class only two days." Jenelle added: "On the days we're off the class, we can interact online because we don't see each other every day." Thus, having a choice of using this social bookmarking tool asynchronously in an out-of-school context

allowed students to work on their reading tasks with more concentration, focus, and time as well as with less anxiety and pressure.

The participants also talked about the benefits of using the social bookmarking tool *synchronously in the ESL computer lab*. The ESL students perceived the immediacy of interaction in the synchronous mode online and physical presence in the same setting as an advantage. Duhahude stated: "You are getting something like right away, and if you have something on your mind, you can exchange with them right away and get a response." Immediacy as an aspect of synchronous work in the same physical setting (ESL computer lab) was also important for Syful. He said, "Sometime reading an essay or an article, sometime it doesn't make sense, like what they really talking about." Both Syful and Duhahude expressed appreciation of the immediate teacher's assistance and scaffolding when reading online in the setting of the ESL computer lab when they could ask for her help and get answers and guidance in the face-to-face setting right away. In fact, all our participants asked questions and discussed their work in Diigo when in the ESL Lab, according to the data collected through observation and researchers' e-journals.

Surprisingly, both Manik and Duhahude stated that they used the information they had read through the social bookmarking tool in other contexts for various purposes. Manik stated that he found the reading materials posted in Diigo helpful for his developmental reading class while Duhahude stated that he could have provided the evidence for his argument when discussing an issue in an out-of-school context. Duhahude said,

I was discussing with a friend about the topic, and I was trying to explain to him something he wasn't trusting me. So I like to defend myself and to show him that black and white: "OK, this is what I am talking about" and to convince him. I have proof. It was the education "If school was worth it." I also like use one of the articles to give to my sister she was trying to do a speech, and she ran out of like sources, and I go through it and find some information, and I give it to her through that. So it's helpful, so we can use even for something else, not only for this class.

In both cases, the participants transferred the knowledge of using Diigo and the knowledge they obtained through this social bookmarking tool to other social contexts: in school and out-of-school.

Collaboration and a community of readers. All five participants acknowledged that collaboration played an important role when using the social bookmarking tool for the development of their reading in L2. As we reported above, the students appreciated having an opportunity to collaborate both asynchronously in the out-of-school context and synchronously in the ESL computer lab. However, the nature of collaboration was different due to contextual factors and affordances. While the professor asked students to provide comments to other students' postings in Diigo, she did not encourage them to discuss their work in the face-to-face setting when using Diigo in the ESL Lab. Nevertheless, according to our observation data and e-journal entries, the students did initiate interaction and engaged in collaborative reading.

Surprisingly, the participants kept interacting face-to-face throughout their synchronous sessions in the social bookmarking tool in the ESL lab (observation notes and interview data). During the interview, Manik recalled that Syful and he discussed the summaries they posted to the articles they had shared in Diigo and remarked that it was beneficial for

his reading comprehension. The participants also asked for feedback and offered feedback to each other on their reading tasks in the social bookmarking tool. Duhahude said,

That day with a classmate, I was trying to find an article. And when I read it, I wanted to get an idea of another person to know if my idea was good or not... like the article I found it was good or not. So I share my idea with him like if I can read and get a better idea of what this thing about what I found in that article to post.

Duhahude stated that he needed the feedback from another student who could help him understand the article and confirm if the reading material would be appropriate for posting in Diigo.

The participants also acknowledged challenges of collaborating in the face-to-face context. As Syful reported,

Sometime I feel **very anxiety** to ask my problems ...as a result I... I... I need to drop some of the class because I feel anxiety to ask the questions. So, I'm like the fact actually like...why did I feel anxiety, because I feel like if I ask the questions, then everybody know that I don't know, I feel, I would be ashamed.

The participant explained that he felt anxious and hesitated to ask questions when in the classroom. Duhahude seconded Syful's statement, and added that Diigo as an online platform afforded collaboration with less pressure and anxiety. He said,

You are sitting down in front of your laptop. And you **feel like no threats, no pressure** on you. You can say... you are free to say what you want. But if you are talking in person, you can be like intimidated or to feel uncomfortable.

Thus, the participants stated that the use of the social bookmarking tool allowed them to collaborate with others with less pressure of feeling uncomfortable when making mistakes or asking questions.

The participants all reported about collaboration at reading tasks in L2 in the ESL lab, but they used the term "community" and "group" only when talking about collaboration online in Diigo. Duhahude said:

It [Diigo site] is something like a **community** so it's not only me. I can get maybe something and will be wrong and to post over there would be.... It was like, kind of to get an advice to know exactly what he think about the article.

The participant considered himself a part of the community and relied on his community of readers in terms of support in the form of feedback.

Syful's perception of having a private group in Diigo – community of readers online – aligned with Duhahude's. He said,

I read an article from Diigo about those, about this, this, this, but Diigo, why? Because I can easily access, and this is **my own group**. It makes a lot of difference because first of all, what I told you, because Diigo is different website... This is a private website, in other website that is ...somebody is going to edit that...but here nobody is going to do something like that. And I see that, and that's very helpful because that is a **private group**.

Syful emphasized that his belonging to the private group where only members can contribute and make changes is important and beneficial. Thus, the social bookmarking tool served as a platform for building a community of readers and learners.

Improvement of L2 reading: Vocabulary. All five participants reported that they desperately needed to improve their vocabulary knowledge in L2 and found the social bookmarking tool beneficial in this respect. When reading authentic materials through Diigo, ESL students had exposure to a large number of new words. Manik said,

When I read, I found **many new words**. I never know that before. And when I read, I can learn like a little bit, little bit. Sometime maybe I don't know what "gregarious" means. I know it's "social," like "outgoing," as like as that. **It [Diigo] helps me to learn vocabulary, to read.**

In this excerpt, Manik stated that reading in Diigo allowed him to enrich his vocabulary step-by-step which enhanced his reading in L2.

The participants emphasized that reading in Diigo exposed them to more words, which they would rarely hear in colloquial speech. For example, Syful said,

Whenever I go to Diigo, and I see lot of new adjectives, basically like article from New York Times, like Wall Street Journal, they have a unique way to write a same topic than the other because the word they use... If I read more, basically if I go through the articles, I find like five to 15 words new to me.

Manik echoed Syful's perception,

They use like formal word so it's helpful because easy word... most of the students can use easy word, but formal word you have to learn them. Then you can use that. So it's helpful.

Thus, the use of the social bookmarking tool in the ESL classroom afforded the participants the opportunity to read materials with an advanced level of vocabulary.

Grammar. In addition to vocabulary, the use of the social bookmarking tool contributed to the participants' improvement of grammar in L2. Four participants (Jenelle, Naruto, Duhahude, and Syful) stated that reading materials online in Diigo afforded them the exposure to grammatically correct sentences and helped them improve their grammar in English. Naruto said, "How they write... with great grammar, college level grammar! That helps you to see... if you go to any article there, they speak properly, every sentence correctly." Duhahude perceived it in a similar way. When talking about the influence of Diigo on his development of reading, he stated,

When you read the article, they are using appropriate grammar and the way that they construct the sentences because when I am going to use French, it is different sometimes because we don't have to use some kind of word in English, we have to skip it. And when you read an article, it give you an idea of how they use... to make a correct sentence. Grammar.

Overall, the participants stated that the use of the social bookmarking tool helped them develop awareness of various structures and grammar rules, reflect on their grammatical errors, and work on addressing issues with their use of grammar in L2.

Motivation. All five participants stated that the social bookmarking tool motivated them to read more materials in English. Duhahude explained how it worked for him,

I share some link, I can go through it, and it help me to read more and get an idea... like a kind of motivation to read, but I don't like reading to be honest. I don't like reading like a book or stuff like that. I am getting better in reading, but I'd rather do other stuff than to read... When I saw a link someone shared, a new thing, I have curiosity to go through it so he give me the desire to read it.

The participant acknowledged that though reading is not one of his hobbies, seeing new postings and feeling the need of sharing links in Diigo motivated him to read more.

Jenelle also seemed to share the curiosity about other students' postings and stated that she checked what other students posted in Diigo every time she saw new links and comments "because I wanna see the opinion of other people." The student also remarked that reading in Diigo in her ESL class made her more interested in reading in English and, surprisingly, contributed to her interest in the United States. Jenelle shared, "I'm interested more in novels in English and writers, also newspapers. And...I'm more interested about the news of United States because I was only caring about my country. So now I love this country as well." Thus, due to increased motivation and reading in ESL when using the social bookmarking tool, Jenelle changed her attitude toward the country of her L2.

Discussion and implications

The findings of the study reveal ESL students' perceptions of a social bookmarking tool, Diigo, for the development of reading in L2. In this part of the article, we discuss how our findings contribute to research on L2 reading. Mainly, we elaborate on (a) the benefits, which the social bookmarking tool can bring to ESL classes; (b) the role of Diigo in building a community of readers online; and (c) implications of our findings.

Benefits of using a social bookmarking tool for the development of reading in L2

Due to scarce research on the use of social bookmarking sites for L2 reading, our findings address the gap in the research literature and illuminate that their use contributes to and enhances ESL students' development of reading in terms of *vocabulary* and *grammar*. Working with a large collection of diverse authentic reading materials in Diigo, the participants got exposed to many unfamiliar words and phrases as well as advanced grammatical structures. Though exposure does not necessarily entail acquisition or learning, the participants positively reflected on their experiences and offered a number of examples, which provided evidence of expanding their vocabulary and learning grammar through the use of Diigo. Overall, our study shows that using social bookmarking tools in ESL classes potentially contributes to L2 learners' vocabulary and grammar learning.

In addition, our findings complement the results of Prichard (2010) and Gao (2013) and show that the use of the social bookmarking tool *motivated* our participants to read more in L2 and contributed to their *engagement* with reading tasks in L2. According to the emic voices of the participants and observation data, affordances of instant sharing the links in the social bookmarking tool, immediate access, and commenting raised the participants' curiosity and added to their desire to read the new posts as well as to learn about other students' opinions expressed in Diigo's posts and comments. Moreover, the use of the social bookmarking tool might have contributed to all motivational aspects, such as

choice, curiosity, feedback, interest, involvement, and control (Guthrie & Wigfield, 2000). While our study focused on ESL students, this finding can have implications for research on reading in L1. In addition, it could inform practitioners about the possible use of Diigo in other content areas such as Science, Technology, Engineering, and Mathematics (STEM).

The participants appreciated having the choice of what articles to share and include in their collection in the bookmarking tool, what links to open, what comments to make, and how many posts to share. This also contributed to the students' feeling more control over their learning. The use of the social bookmarking tool also afforded the students the opportunities to share and receive feedback synchronously and asynchronously with less pressure and anxiety, but with more confidence and focus. Surprisingly, the use of the social bookmarking tool afforded our L2 participants from diverse cultural and linguistic backgrounds the opportunities to express their voice, learn about cultural aspects of their local context and from abroad, and develop an interest and a more positive attitude towards their country of residence.

Collaboration across contexts and modes and building a community of readers

Due to the employment of the ecological perspective as a theoretical lens in the study, we could observe, record, and interpret ESL students' perceptions of complex processes, practices, and their interconnectedness as situated in certain contexts and modes. Our ESL focal participants collaborated in and across face-to-face and online settings, synchronously and asynchronously. However, the nature of their collaboration was different, affected by the contextual factors and affordances. When in the face-to-face-setting of the ESL Lab, the participants appreciated the immediacy of feedback of other agents in their environment. Meanwhile, online in the asynchronous mode of work in the social bookmarking tool, the participants underscored the advantages of having more time to work on their reading tasks in L2, being more focused and less pressured or anxious. The participants' perceptions of their collaboration of using Diigo for the development of reading in L2 differed as well.

The nature of collaboration in the social bookmarking tool was influenced or even determined by a number of affordances, but we would like to point out the affordance of creating a private group. This privacy setting of Diigo allowed Melody, the course instructor, to provide students with an opportunity to form the content and context for their work on reading in L2 in the social bookmarking tool. While the students worked together in the face-to-face setting of their classroom and ESL Lab, it was Diigo, which they singled out when talking about the sense of belonging to a private group or having a community of readers. The students felt the need (a) to support other group members through comments, (b) to contribute to the collection of their reading materials with links to new articles, (c) to learn from other community members' opinions, and (d) to express their voice. Noteworthy, though our participants worked at their reading in Diigo, any social bookmarking platform with affordances of posting links to reading materials, commenting, and sharing information could serve the same purpose and have comparable benefits for students' learning.

Implications

204 Based on the previous research on technology and L2 reading and findings of our study, we offer a list of questions which ESL teachers or teachers of other disciplines might consider

when incorporating a social bookmarking tool in their courses: (a) What affordances of the technological tool will learners employ and benefit from? How will these affordances influence students' learning? (b) In what context(s) will students use the target Web 2.0 tool? How might these context(s) influence learners' motivation and engagement and use of the social bookmarking tools? (c) How can collaboration be enhanced in face-to-face synchronous and/or online asynchronous context(s)? These questions might facilitate teachers' planning process and guide their reflection activities.

In addition, we suggest setting aside time for in-class students' collaboration during synchronous work on online reading tasks in the social bookmarking tool. In our study, though Melody did not ask students to engage in in-class discussion in the ESL Lab when using Diigo, the students pointed out the perceived need and resulting benefits of allowing for greater forms of collaboration with, immediate feedback from, and support of other students in their ESL class within the actual classroom context. The teachers in ESL and other classes might improve students' collaboration by explaining the objectives of students' working with each other and guiding their in-class discussion through training and/or feedback. Considering if students will have the option to choose with whom they will collaborate at reading tasks when using a social bookmarking tool could also facilitate ESL teachers' planning.

Conclusion

While there have been studies which investigated the use and influence of technology on L2 reading, scarce studies have focused on the use of social bookmarking tools for the development of reading in L2. Our study found that a number of affordances of the social bookmarking tool allowed ESL students to create a large collection of diverse materials and share their opinions through commenting. Both synchronous and asynchronous use of the social bookmarking tool in the ESL lab and out-of-school contexts turned out to be beneficial for ESL students' development of reading in L2. It afforded the participants the opportunities to engage in collaborative practices and create a community of L2 readers as well as contributed to their development of reading. Finally, the social bookmarking tool enhanced ESL students' motivation and engagement in reading in L2.

The findings, discussion, and implications of our qualitative inquiry might help educators in incorporating a social bookmarking tool in their ESL classes for the development of reading in L2. Some findings of this study could also inform researchers and practitioners of other subject areas about the benefits of using a social bookmarking tool in the classroom and may serve as a foundation for the further research on the use of social bookmarking tools for language learning and teaching. In particular, the following are a few directions we suggest for further research studies: (a) co-construction of knowledge during collaborative reading tasks using social bookmarking tools, (b) use of annotation affordances of social bookmarking tools as a source of collaborative reading activities in L2, and (c) content and nature of discourse when working at reading in L2 using social bookmarking tools. Further quantitative inquiry could complement the results of the current research by measuring students' improvement in reading in L2 due to the use of the social bookmarking tool.

References

- Alharbi, M. (2015). Effects of Blackboard's discussion boards, blogs and wikis on effective integration and development of literacy skills in EFL students. *English Language Teaching*, 8(6), 111–132. doi:10.5539/elt.v8n6p111
- Bakhtin, M. M. (1986). *Speech genres and other late essays*. Austin, TX: University of Texas Press.
- Brill, J. M., & Galloway, C. (2007). Perils and promises: University instructors' integration of technology in classroom-based practices. *British Journal of Educational Technology*, 38(1), 95–105. doi:10.1111/j.1467-8535.2006.00601.x
- Castek, J., Beach, R., Cotanch, H., & Scott, J. (2014). Examining middle-school students' uses of Diigo annotations to engage in collaborative argumentative writing. In R. Anderson & C. Mims (Eds.), *Handbook of research on digital tools for writing instruction in K-12 settings* (pp. 80–101). Hershey, PA: Information Science Reference. doi:10.4018/978-1-4666-5982-7.ch004
- Chang, C. K., & Hsu, C. K. (2011). A mobile-assisted synchronously collaborative translation-annotation system for English as a foreign language (EFL) reading comprehension. *Computer Assisted Language Learning*, 24(2), 155–180. doi:10.1080/09588221.2010.536952
- Chun, D. M. (2006). CALL technologies for L2 reading. In L. Ducate & N. Arnold (Eds.), *Calling on CALL: From theory and research to new directions in foreign language teaching* (pp. 69–98). CALICO Monograph Series Volume 5. San Marcos: Computer Assisted Language Instruction Consortium.
- Coffey, G. (2012). Literacy and technology: Integrating technology with small group, peer-led discussion of literature. *International Electronic Journal of Elementary Education*, 4(2), 395–405. Retrieved from http://www.iejee.com/4_2_2012/IEJEE_4_2_Coffey_395_405.pdf
- Creswell, J. W. (2012). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage.
- Davis, J. F., & Lyman-Hager, M. (1997). Computers and L2 reading: Student performance, student attitudes. *Foreign Language Annals*, 30, 58–72. doi:10.1111/j.1944-9720.1997.tb01317.x
- Dippold, D. (2009). Peer feedback through blogs: Student and teacher perceptions in an advanced German class. *RECALL*, 21(1), 18–36. doi:10.1017/S095834400900010X
- Dzakiria, H. (2012). Theory of relatability as a possible alternative to the issue of generalising of research findings: The case of Open and Distance Learning (ODL) at Universiti Utara Malaysia. *Malaysian Journal of Distance Education*, 14(1), 41–58. Retrieved from http://mjde.usm.my/vol14_1_2012/mjde14_1_4.pdf
- Gao, F. (2013). A case study of using a social annotation tool to support collaboratively learning. *The Internet and Higher Education*, 17, 76–83. doi:10.1016/j.iheduc.2012.11.002
- Gee, J. P. (2000). Discourse and sociocultural studies in reading. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 195–207). Mahwah, NJ: Erlbaum.
- Gee, J. P. (2001a). Identity as an analytic lens for research in education. *Review of Research in Education*, 25, 99–125. Retrieved from <http://www.jstor.org/stable/1167322>

- Gee, J. P. (2001b). Reading as situated language: A sociocognitive perspective. *Journal of Adolescent & Adult Literacy*, 44(8), 714–725. Retrieved from <http://www.jstor.org/stable/40018744>
- Geertz, C. (1973). *The interpretation of cultures*. New York, NY: Basic Books.
- Grabe, W. (2009). Reading in a second language: Moving from theory to practice. New York: Cambridge University Press.
- Guthrie, J. T., & Wigfield, A. (2000). Engagement and motivation in reading. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (p. 403–422). London: Lawrence Erlbaum Associates.
- Hsu, C. K., Hwang, G. J., & Chang, C. K. (2013). A personalized recommendation-based mobile learning approach to improving the reading performance of EFL students. *Computers & Education*, 63, 327–336. doi:10.1016/j.compedu.2012.12.004
- Huang, H. T., & Liou, H. C. (2007). Vocabulary learning in an automated graded reading program. *Language Learning & Technology*, 11(3), 64–82. Retrieved from <http://llt.msu.edu/vol11num3/pdf/huangliou.pdf>
- Janesick, V. J. (2011). *“Stretching” exercises for qualitative researchers*. Thousand Oaks, CA: Sage.
- Kessler, G. (2009). Student-initiated attention to form in wiki-based collaborative writing. *Language Learning & Technology*, 13(1), 79–95. Retrieved from <http://llt.msu.edu/vol13num1/kessler.pdf>
- Kvale, S., & Brinkmann, S. (2009). *InterViews: Learning the craft of qualitative research interviewing* (2nd ed.). Thousand Oaks, CA: Sage.
- Lan, Y. J., Sung, Y. T., & Chang, K. E. (2009). Let us read together: Development and evaluation of a computer assisted reciprocal early English reading system. *Computers & Education*, 53(4), 1188–1198. doi:10.1016/j.compedu.2009.06.002
- Lin, C. M. (2011). A survey on E-reading habits and behaviors of elementary school students in Taiwan. *National Central Library Bulletin*, 100(2), 30–59. Retrieved from <http://www.ncl.edu.tw/upload/P1010104001/cats/100-2-30-59.pdf>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Thousand Oaks, CA: Sage Publications.
- Lu, J., & Deng, L. (2012). Reading actively online: An exploratory investigation of online annotation tools for inquiry learning. *Canadian Journal of Learning and Technology*, 38(3), 1–16. Retrieved from <http://www.cjlt.ca/index.php/cjlt/article/view/677>
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Thousand Oaks, CA: Sage.
- Perry Jr, F. L. (2011). *Research in applied linguistics: Becoming a discerning consumer*. Taylor & Francis.
- Prensky, M. (2011). Digital wisdom and Homo sapiens digital. In M. Thomas (Ed.), *Deconstructing digital natives: Young people, technology, and the new literacies* (pp. 15–29). Hoboken, NJ: Routledge.
- Prichard, C. (2010). Using social bookmark sites for independent reading projects. *JALT CALL Journal*, 6(2), 115–128. Retrieved from http://journal.jaltcall.org/articles/6_2_Prichard.pdf
- Richards, K. (2003). *Qualitative inquiry in TESOL*. Springer.

- Rosenblatt, L. M. (1982). The literacy transaction: Evocation and response. *Theory into Practice*, 21(4), 268–277. doi:10.1080/00405848209543018
- Ruffini, M. F. (2011). Classroom collaboration using social bookmarking service Diigo. *Educause Review*. Retrieved from <http://er.educause.edu/articles/2011/9/classroom-collaboration-using-social-bookmarking-service-diigo>
- Ryan, G., & Bernard, H. R. (2003). Techniques to identify themes. *Field Methods*, 15(1), 85–109. doi:10.1177/1525822X02239569
- Sauro, S. (2009). Computer-mediated corrective feedback and the development of L2 grammar. *Language Learning & Technology*, 13(1), 96–120. Retrieved from <http://llt.msu.edu/vol13num1/sauro.pdf>
- Stake, R. E. (2006). *Multiple case study analysis*. New York, NY: The Guilford Press.
- Stakhnevich, J. (2002). Reading on the Web: Implications for ESL professionals. *The Reading Matrix*, 2(2), 1–8. Retrieved from <http://www.readingmatrix.com/articles/stakhnevich/article.pdf>
- Tseng, F.-P. (2009). EFL students' Yahoo! online bilingual dictionary use behavior. *English Language Teaching*, 2(3), 98–108. doi:10.5539/elt.v2n3p98
- Tu, C., Blocher, M., & Ntoruru, J. (2008). Integrate Web 2.0 technology to facilitate online professional community: EMI special editing experiences. *Educational Media International*, 45(4), 335–341. doi:10.1080/09523980802588634
- van Lier, L. (2004). *The ecology and semiotics of language learning. A sociocultural perspective*. Boston: Kluwer Academic.
- Vannestål, M. E., & Lindquist, H. (2007). Learning English grammar with a corpus: Experimenting with concordancing in a university grammar course. *ReCALL*, 19(3), 329–350. doi:10.1017/S0958344007000638
- Warschauer, M. (1999). *Electronic literacies: Language, culture, and power in online education*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Yang, S. J., Zhang, J., Su, A. Y., & Tsai, J. J. (2011). A collaborative multimedia annotation tool for enhancing knowledge sharing in CSCL. *Interactive Learning Environments*, 19(1), 45–62. doi:10.1080/10494820.2011.52888
- Yanguas, I. (2009). Multimedia glosses and their effect on L2 text comprehension and vocabulary learning. *Language Learning & Technology*, 13(2), 48–67. Retrieved from <http://llt.msu.edu/vol13num2/yanguas.pdf>
- Yu, L.-T. (2014). *Using online annotations in collaborative reading activities with elementary-aged Taiwanese learners of English* (Doctoral dissertation). Retrieved from <http://hdl.handle.net/2152/26898>

Appendix A

Table 1. Demographic data about participants as of fall 2014

Pseudonym	Age	Home country	L1	Learning ESL	Other languages	Length of stay in the USA	Major
Duhahude	25	Burkina Faso	Dioula	11 years	French, Malinke, English	2 years 8 months	Computer science
Jenelle	19	USA (raised in Dominican Republic)	Spanish	10 years	Spanish, English	1 year, 9 months	Communication studies
Manik	23	Bangladesh	Bengali	13 years	Hindi, Urdu, Arabic, English	5 years	Accounting
Syful	20	Bangladesh	Bengali	13 years	Hindi, Urdu, English	1 year	Computer science
Naruto	20	USA (raised in Dominican Republic)	Spanish	10 years	Spanish, English	2 years	Business

Appendix B

Table 2. Participants' perceptions of technology in general and technology for learning

Pseudonym	Perceptions of technology	Perceptions of technology for learning
Duhahude	"Technology is something very powerful. We can't live without technology today. It's like the center of everything."	"Technology for learning, I think, is good for learning because... some people understand more when they use technology to learn. I prefer to learn from technology than a book. It's kind of, I don't know that one in English, you are more free. You can use it whenever you want."
Jenelle	"I think it [Technology] is good. It's really good because it helps us, I mean the society, a lot to do the things that we need to do entirely. The thing I like about technology is that, for example, if I'm looking for some type of information, I can find many opinions of that issue. For example, let's see Ebola. I can see opinions of people from Africa as well as people from Mexico, so I can have a lot of information in part of time, so I think that's really good. I think it cuts the distance between countries."	"I can find information in my home really quick if I don't have time. So I can learn really... I can read really fast and do my essay and think about it. I think technology is really good for learning. It's amazing because you can do it fast. That's the thing; you can learn faster."
Manik	"It [Technology] is great for every person because without technology we cannot improve ourselves, even improve our society."	"It [Technology] helps you learn, to learn and to decide and also to understand what's going on, and where it's going on. Also, it's... help you to learn your academic skill."
Syful	"Now everything is in technology. That's what I can say, I can tell... like from the... like sleeping from morning to evening... like get up from sleep to like even going to bed... still everywhere is technology. Now we cannot dream anything with the technology."	"With technology everything is very easy. And it allow students and other people to learn it right away, and they can save it, and they can do it anywhere, any places. So that's what I think about the technology. That is a good advantage, and at the same time it's very helpful."
Naruto	"What I think about technology... There is going to come a point that people would depend more on technology than actual learning. So I love to use the technology, but it's taking up, it's taking over the... It's making human more dependent to it. People don't want to go and read a book. I just feel that way. It is very useful, but if we put on a scale from 1 to 10, it's distracting more that it's helping."	"Incredible. The best tool. It [Technology] is easier than a book because with a book, you are just reading, and it makes you tired most of the time. But when you go to YouTube, and you look for a class, and you find a professor that teaches the class in a different way, he might use cartoon characters to make it funny, entertain, and you are still learning. So it helps incredibly."