

# **Incorporating Online Tools to Promote English Reading for EFL Learners: an Action Research Study**

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## **Abstract**

The purpose of this action research was to explore EFL learners' English reading and learning experiences while using online tools in a face-to-face EFL classroom. The pedagogical intervention, based on the use of infographics as the main learning assignment along with other online tools: Padlet, Google Docs, and Canva, was implemented to promote English reading for EFL learners. The data were gathered from students' reflections and questionnaires. The findings revealed that the class tasks over the period of eight weeks, incorporating online tools, enhanced students' experience when reading English. The students viewed the use of infographics as motivating, and the easy-to-read visual texts enabled them to understand the assigned reading topics much easier. In addition, the infographic assignments incorporating the use of online tools encouraged them to actively participate in English reading activities in a collaborative atmosphere while allowing them to exercise their creativity and develop positive attitudes toward the supportive role of technological tools in educational settings.

**Keywords:** English reading, infographics, online tools

# การใช้เครื่องมือออนไลน์เพื่อส่งเสริมการอ่านภาษาอังกฤษของผู้เรียน

## ภาษาอังกฤษเป็นภาษาต่างประเทศ: งานวิจัยในชั้นเรียน

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### บทคัดย่อ

งานวิจัยในชั้นเรียนนี้มีวัตถุประสงค์เพื่อศึกษาการอ่านภาษาอังกฤษและประสบการณ์การเรียนรู้ของผู้เรียนภาษาอังกฤษเป็นภาษาต่างประเทศที่ใช้เครื่องมือออนไลน์ประกอบในชั้นเรียนปกติ โดยแทรกรูปแบบการเรียนรู้ การสอนผ่านกิจกรรมการใช้อินโฟกราฟิกและเครื่องมือออนไลน์ ได้แก่ กระดาน แพนดเล็ท กูเกิลเอกสาร และเว็บแคนวา เพื่อส่งเสริมการอ่านภาษาอังกฤษให้กับผู้เรียน โดยเก็บข้อมูลความคิดเห็นสะท้อนกลับ แบบสอบถาม ผลการวิจัยพบว่าช่วงระยะเวลาแปดสัปดาห์ของการเรียนที่ใช้เครื่องมือออนไลน์ การเรียนการสอนประกอบช่วยเพิ่มพูนประสบการณ์การอ่านภาษาอังกฤษของผู้เรียน ผู้เรียนเห็นว่าการใช้อินโฟกราฟิกสร้างแรงจูงใจในการอ่าน และการใช้ข้อความที่มีรูปและอ่านง่ายช่วยให้ผู้เรียนเข้าใจหัวข้อการอ่านภาษาอังกฤษได้ง่ายขึ้น นอกจากนี้ กิจกรรมการเรียนรู้ผ่านอินโฟกราฟิกผสมผสานกับการใช้เครื่องมือออนไลน์ต่างๆ ยังช่วยเสริมสร้างบรรยากาศการเรียนรู้ร่วมกันระหว่างผู้เรียน ส่งเสริมโอกาสให้ผู้เรียนได้ใช้ความคิดสร้างสรรค์ และสร้างทัศนคติเชิงบวกที่มีต่อบทบาทของเทคโนโลยีในแวดวงการศึกษา

**คำสำคัญ:** การอ่านภาษาอังกฤษ อินโฟกราฟิกส์ เครื่องมือออนไลน์

## **Introduction**

Reading is recognized as an essential academic language skill for all foreign language learners and through reading, students learn new information and learn to synthesize, evaluate and interpret the subject matter (Noor, 2011). Anderson (2003) stated that individual learners with good reading skills are able to make greater progress in other areas of language learning, while those without good reading ability may encounter many challenges in a language classroom. In a Thai EFL tertiary-level context, reading competence is important to Thai students as they are exposed to course texts, references, and online materials that are in English. However, many of them have poor English reading skills and thus require improvement in reading comprehension strategies (Wisaijorn, 2009).

English education in a Thai educational context emphasizes the development of students' language proficiency to achieve purposes such as communication and business to gain economic competitiveness in the globalized era and also focuses on lifelong education (Darasawang, 2007). An English as a foreign language classroom selected in this action research focuses on English skills development and aims to motivate students to extend their exposure to English language inside and outside the classroom so that they can develop their English language skills and increase content knowledge which is useful for their future study and careers. Nonetheless, most of the students in the selected class have low levels of motivation and proficiency with limited vocabulary knowledge. Many of them need improvement in all English skills, particularly the reading skill which is an important skill to support and enable them to comprehend increasingly more complex content that is specific to their fields of study. To address the problems in the Thai EFL classroom, it would be necessary to look for ways to motivate students to read and increase their reading skills at the same time.

According to Velandia et al (2012), new information and communication technologies have become an important tool that can encourage new interests and abilities among people. Crane (2012) argued that teaching tools for teaching and learning with technology or Web 2.0 tools are ideal for students' learning English

because they provide them opportunities to use authentic language and be actively engaged in learning by motivating them to listen, speak, read, and write. There are many online tools that can be used at various levels and in various subject areas. Holzweiss (2014) listed several web tools that teachers can integrate into the curriculum to motivate student learning. Collaboration tools such as Google Docs and Padlet, for example, are web tools that allow students and teachers to share documents and files, whereas Piktochart, Easel.ly, and Canva are tools that help students to create instant infographics online.

By incorporating technology in English education, Cote Parra (2015) found that technology-supported learning environments allow a dynamic and more engaging way of learning to foster student interaction and the use of a foreign language in authentic contexts. Donaldson (2014) argued that the use of Web 2.0 technologies in classrooms can empower learners to take a more active role in their learning through collaborative online opportunities. It can be seen that technological innovations like online tools can help redesign learning and teaching in higher educational environments, and this would be beneficial to students to improve their competence in the target language.

Regarding reading skill development, infographics can be powerful sources for engaging students in critical analysis via close reading. Davis and Quinn (2013) stated that infographics can support reading comprehension and writing while strengthening critical thinking and synthesizing skills. Krauss (2012) suggested using infographics as a tool for engaging and developing analysis and interpretation capabilities, both when students interpret the graphics and when they create them. Using online programs for infographic creation such as Pikochart, Visual.ly, Infogr.am and Canva, which are user-friendly and do not require design skills, not only support the language learning process in a motivating way, but also increase students' computer literacy (Wertz & Saine, 2014).

In order to enhance student motivation to read English texts and to develop English reading for students with low levels of motivation and limited vocabulary knowledge and reading skills in *English for Science and Technology*

2 class, Maejo University, the teacher/researcher decided to introduce a technology-related change to classroom instruction. The classroom action research was conducted to provide students with an opportunity to practice applying reading strategies when reading texts with the help of infographics and technological online tools. The study aimed at addressing the following research questions:

1. Can infographic assignments make English reading easier and students more motivated?
2. What are students' views about technology tools: Google Docs, Padlet, and Canva, in terms of the advantages, disadvantages and obstacles to the implementation of such online tools in the classroom?

## **Review of Literature and Related Studies**

### **Technology integration in a classroom**

Using technology in foreign language learning and teaching is useful for both teachers and students. According to Altun (2015), technology-based instruction can contribute to the quality of teaching and the learning experience. Technology is a facilitating and supportive tool of education with which teachers and students can get a great deal of benefit. To integrate technology in language teaching, Altun (2015) argued that since different technological materials offer different advantages, a teacher should be aware of utilizing technology by applying technology to his/her teaching skills and needs. In addition, to achieve the full benefits of incorporating technologies into educational settings, it is necessary for teachers to understand appropriate ways to integrate the technological tools to support students to learn meaningfully and to participate in authentic experiences that build motivation and enhance learning (Keengwe et al., 2008).

Web 2.0, the second generation of the Internet, offers a wide variety of tools, such as Google Docs, Popplet and Prezi, which allow multiple users to collaborate on shared documents (Jacobs & Seow, 2014). To help students gain competence in the second language, Crane (2012) suggested that teachers should

incorporate Web 2.0 tools into language instruction by providing a meaningful and interesting context for the introduction of new items, encouraging students to use English for communication, and paying attention to different student learning styles and cultural differences. Moreover, using a variety of resources available through Web 2.0 can help promote interest in learning for English-language learners and provide an atmosphere that supports the learning. The Internet, especially with Web 2.0 and social networking tools for communication and collaboration, offers creative tools allowing students to practice English skills even outside the classroom. It is obvious that students benefit in a number of ways when using Web 2.0 tools as integral parts of lessons.

In this action research, the selected Web 2.0 tools are Google Docs, Padlet and Canva. The descriptions of each are presented below.

### **Google Docs**

Google Docs is free browser-based software offered by Google providing applications including a word processor, a spreadsheet, a presentation package and a form designer (Firth & Mesureur, 2010). Google Docs gives students a way to publish and share their work (Yamauchi, 2009). Jacobs and Seow (2014) provided an example of using Google Docs with a group of students collaboratively writing a research report. After the students had finished their individual research, they shared their draft in Google Docs so that every student could view the document and had an equal opportunity to comment or edit the shared document. As they worked together on the report, peer interactions were facilitated, and as a result, higher order thinking skills were stimulated. Through the process of collaborative writing, students are able to recognize the value of cooperation and learn to be aware of their contributions to teamwork achievement. In addition, the study by Matta Abdelmalak (2015) showed that students agreed that using Google Docs gave them a sense of learning community and was a great way to collaborate since it allowed all members to work on the document collaboratively. It can be said that this Web 2.0 tool influences

students' learning experience by changing the ways they collaborate and construct knowledge.

### **Padlet**

Padlet (<https://padlet.com>) is an online board that both teachers and students can use to express their thoughts or to post content on the page (Kaya, 2015). Byrne (2015) identified "Padlet" as one of the collaborative research tools that is a free-of-charge service allowing the creation of online pages of shared notes, videos, and documents. Using Padlet in classroom learning increases the cooperation and collaboration among students, who can access the virtual walls anywhere and anytime (Kaya, 2015). Based on Fuchs (2014), she used Padlet to increase student participation in class and pointed out several advantages of the Padlet wall by saying that "Padlet is a useful tool in the information literacy classroom because it works on a variety of different devices, does not require participants to create accounts to use it, and requires no special technical know-how" (Fuchs, p.7). Fuchs then concluded that using Padlet in instruction has provided a supportive space for collection and classroom collaboration because students are encouraged to contribute and learn from one another.

Shields (2014) suggested several learning activities in combination with Padlet. For example, Padlet can be used to create lesson plans, vocabulary lists, multimedia projects, assignment postings, collaborative group work and brainstorms, teacher or peer feedback, and much more. Moreover, this user-friendly tool allows the posting of pictures, videos, links and digital documents like Word files or PDFs. Shields further explained that creating an account for Padlet allows teachers to save and edit Padlets and also Padlet URL can be embedded into a website. These features have made Padlet a potential collaborating space.

### **Infographics in classroom instruction**

An infographic is "a visual representation, chart, or poster of information about a particular topic" (Fowler, 2015, p.44). Krauss (2012) explained that an

infographic is an engaging method to teach new information and critical thinking as a visual presentation of data can make the brain process more effectively.

Infographics are regarded as promising learning tools that can be adapted to any educational setting to enhance students' learning experience. Matrix & Hodson (2014) studied the benefits of infographic adoption in the online college classroom by incorporating a research-based graphic design assignment into coursework. Their study revealed that teaching with infographics encouraged students' visual digital literacy competencies which are essential for 21<sup>st</sup> century learners. They also concluded that the infographic assignment is well suited for online and blended courses offering a motivating learning experience to today's students of Gen Y learners, who prefer using digital tools to interact and perform a more active role in their learning process.

Additionally, Davidson (2014) explained that when students work on their infographics projects, they reach several literacy goals. They learn appropriate methods for filtering information to find credible sources. They learn how to sort data and interpret what they find and to decide what they can use to provide evidence for their points. Students can also develop their media and digital literacy by exercising their creativity in creating their own designs and revising their design elements until they find the right combination of information and artwork to communicate their message.

There are a lot of options for creating graphs, charts, and other visuals. Commonly used web-based applications for creating infographics are Infogr.am, Piktochart, Easel.ly, Dipity, Google Drawing tools, PowerPoint and NCES (Abilock & Williams, 2014) and Canva (Neltner, 2015). In this study, Canva ([www.canva.com](http://www.canva.com)) was selected. Neltner (2015) explained that Canva is "an online graphic design program that can be used to create anything from blog graphics, Facebook headers, to posters to flyers" (Neltner, p.24). She further added that Canva is free to access and user-friendly as it is a drag-and-drop image editor and also users can download a PDF or JPEG of creation to share. As such, Canva is a good choice for infographic creation which can be handled even by users who are not technologically-savvy.



In this action research, Canva and other two more collaborative online tools: Google Docs and Padlet were integrated into the instruction practices to support reading activities, learning motivation and engagement.

## **Methodology**

### **Research design**

This classroom action research was to incorporate infographic assignments and some online tools into classroom instruction over the period of eight weeks to enhance English reading for EFL students. Since this study focuses on one instructor and the instructor is also the researcher, the findings from this study, have limited generalizability.

### **Participants**

The participants in this study were 27 tertiary-level students enrolled in *English for Science and Technology 2*, 1/2015 academic year, Maejo University, Chiang Mai campus. Among these participants, 22 majored in Architecture and the rest were Computer Sciences, Information Technology and Biotechnology students.

### **Materials**

Throughout the eight week period, four infographic assignments were designed to engage the students in close reading to comprehend the English texts and to practice reading strategies such as taking notes and summarizing as well as developing digital literacy skills using technological tools. These were facilitated by using Google Site as a class portal where the extra and relevant resources were found, in combination with other online tools access. The integration of Web 2.0 tools was implemented as follows:

- Infographics, a representation of information in a graphic format, were the main online tools used in this action research. They allowed readers to understand the information more easily as they combine texts, images, and other visual elements to help readers to focus on essential facts.

- Padlet walls were used for whole-class engagement and students' infographics exhibitions.
- Google Docs were used for collaborative writing among group members.
- Canva, a free graphic design tool website available on [www.canva.com](http://www.canva.com), was selected for the students to design and create their own infographics in order to present what they had learned from the assigned reading texts in a creative and motivating way.

Typically, a task involved the students in a close reading activity. The reading contents were part of Unit 1, concerning innovations and Unit 2, concerning environmental issues, respectively. The following table describes the four infographic assignments.

Table 1 Descriptions of four infographic assignments

No.	Aims	Descriptions	Web 2.0 technologies in use
1	To practice note taking strategies and get students to know about Canva, a free website for making infographics, and to learn how to use it.	After studying different types of innovations, students choose one innovation inspired by nature to study. They collect and filter what they have learned, taking notes about the main ideas and supporting details. They then organize the notes and present them in the form of graphics using Canva. They post their infographics on the Padlet wall. To get the students be aware of the usefulness of an infographic criteria, they are reminded of following the criteria strictly and also are assigned to evaluate their peers' products.	<ul style="list-style-type: none"> <li>- Canva</li> <li>- Padlet</li> </ul>

No.	Aims	Descriptions	Web 2.0 technologies in use
2	To practice note taking strategies and to get to know Google Docs.	Students are assigned to study reading texts about a particular innovation, reading, rereading, discussing and assessing their understanding with peers before recording notes about the main ideas and supporting details. To finish the assignment, they are encouraged to further their reading and sharing of information on Google Docs, created by group leaders. Each group, again, creates an infographic to present facts on what they have learned about that particular innovation using Canva. Their final product is placed on the Padlet wall.	<ul style="list-style-type: none"> <li>- Google Docs</li> <li>- Canva</li> <li>- Padlet</li> </ul>
3	To increase students' English reading comprehension skills and motivation to read English texts.	After studying and close reading three infographics about food wastage, students get into groups and share what they have learned from the infographics. They help each other make an outline with comprehensible and sufficient content or details to share knowledge about "Food waste". Then, they are assigned to create their own food waste infographic which will be posted on the Padlet wall. They are assigned to write feedback on reading from infographics on the Padlet wall.	<ul style="list-style-type: none"> <li>- Three selected infographics about food wastage</li> <li>- Canva</li> <li>- Padlet</li> </ul>

No.	Aims	Descriptions	Web 2.0 technologies in use
4	To increase students' English reading comprehension skills and motivation to read.	Students are assigned to study about e-waste presented in a graphic format. After that, close reading with ten questions is completed by each pair, and then the students get into groups to study different topics concerning e-waste. A jigsaw reading activity is applied to foster an expert on each particular topic. Again, they form a new group to share their knowledge with the other group members on Google Docs, created by a group leader. They collaboratively work online to organize what they want to present and how to design an infographic to represent the content. They create the group infographic and post it on the Padlet wall.	<ul style="list-style-type: none"> <li>- E-waste infographic</li> <li>- Google Docs</li> <li>- Canva</li> <li>- Padlet</li> </ul>

### Data collection

The methods of data collection in this classroom research included student reflections posted on Padlet walls, a journal kept by the teacher/researcher and a questionnaire consisting of five close-ended questions with 5-point Likert scale (1 = strongly disagree, 5 = strongly agree) and five open-ended questions (see Appendix) adapted from Majid (2014), Abdelalak (2015), and Aikina & Zubkova (2015). To collect the data, the students were asked to write two reflective texts either in Thai or in English on two separate Padlet walls with regard to reading with infographics and the creation of infographics to understand how the use of infographics could influence their English reading. Additionally, the observations of the participants' involvement in the learning activities were recorded. The participants were requested to complete an online questionnaire

consisting of close-ended and open-ended questions to express their preferences about online tool implementation one week after the last assignment was completed. The questionnaire was in Thai so that the participants could understand the questions. The participants answered the open-ended questions in Thai.

### **Data analysis**

Data collected from the close-ended questionnaire were analyzed quantitatively to determine the mean and the standards deviation. The students were asked to rate their agreement to the five statements. A rating guide is as follows: 4.21-5 = strongly agree, 3.41-4.2 = agree, 2.61-3.4 = neither agree nor disagree, 1.81-2.6 = disagree, and 1-1.8 = strongly disagree. In addition, the students' reflections and responses to the open-ended questionnaire were analyzed using content analysis. The data from the instructor's journal were used to substantiate the data collected from students' reflections and comments. The data obtained were analyzed to understand how exposure to and the use of online tools could impact the students' English reading and learning experience.

### **Findings**

In order to address research question 1: Can infographic assignments make English reading easier and students more motivated?, the results obtained from the close-ended questionnaire are displayed below to present descriptive statistics for students' perspectives towards the infographic assignments and the online tools applied. The students were asked to rate their agreement to the five statements as shown in Table 2.

Table 2 Questionnaire results: descriptive statistics

<b>Statements</b>	<b>Mean</b>	<b>Std.</b>	<b>Interpretation</b>
1. Infographic assignments increased students' willingness to read the target language.	4.15	0.662	Agree
2. Infographic assignments helped students to better understand written texts.	4.30	0.609	Strongly agree
3. Infographic assignments enabled students to remember words and language structures better.	3.67	0.734	Agree
4. Infographic assignments encouraged students' creativity.	4.63	0.492	Strongly agree
5. Infographic assignments made the studying process motivating.	4.04	0.649	Agree

\*N = 27

Table 2 shows that most students had very strong to strong opinions about the positive contributions of infographic assignments. In terms of reading comprehension, the activities encouraged them to read English texts, and most importantly, they helped them to comprehend the written English texts much easier. In addition, the students agreed that they gained knowledge about words and language structures and perceived that this technology-based activity increased their creativity and motivation to learn.

The analysis of students' written reflections on reading English texts from infographics revealed that infographics can make English reading easier, and that students become more motivated. Most students expressed the view that infographics make reading English texts easier and also make reading an interesting, rather than a boring activity. The frequent keywords expressed were: "easy to understand", "easy to read", "understand easily", "help to understand", and "make me understand more easily". Some other keywords were "interesting" and "not boring". In addition, their responses to English reading activities using

infographics show that most of them realized that some elements applied in infographics promoted their understanding of the topics presented. The students mentioned that “photos”, “images”, “graphics”, and “diagrams” incorporated in infographic presentations made the texts “attractive”, “interesting”, “beautiful” and “easy to read”. Other responses revealed that students viewed infographics as presenting a text in a simple and straightforward way as well as in a creative and beautiful fashion, making reading activities more motivating and easier.

The students were asked to reflect on their experience of infographic creation assignments and gave positive responses about the activities. The following excerpts show how the students explained in their own words what they had experienced in the assigned activities:

*I have more fun and want to learn more.*

*Infographics help make learning easier and are easier to understand.*

*I think infographics make me understand English subjects better than words alone.*

*Infographics help me better understand English and encourage my creativity.*

The statements above indicate that the technology-integrated infographic assignments not only encouraged the students to read English texts in a more engaging way and understand English more easily, but also created a better learning experience by allowing students to exercise their creativity in generating their own infographics using online tools.

In addition, one of the students stated that infographic assignments made English learning more interesting, and she was looking forward to this kind of classroom. Another one also shared a similar viewpoint by stating that infographics increased her desire to read and learn English and an infographic activity interested her and she loved it. These statements show that the infographic assignments positively influenced students’ English reading.

Furthermore, the data from the teacher’s journals also supported the findings. A high level of student participation was observed. For example, the

students did well in the close reading activity and contributed great time and effort to infographic creation. Though all students were new to Canva, the infographic creation web, they were able to use it to make their own infographics with a drag-and-drop image editor without difficulty.

To answer the second research question: What are students' views about technology tools: Google Docs, Padlet, and Canva, in terms of the advantages, disadvantages and obstacles to the implementation of such online tools in the classroom?, the students were asked to complete open-ended questions by expressing their preferences about online tool implementation. It was found that throughout the period of the technology-integrated instruction, the students experienced learning that was different to traditional teaching methods. They expressed the feeling that technology-integrated learning activities made their learning convenient, interactive and motivating. For instance, one student explained that:

*Working and submitting the assigned tasks became convenient through the use of online tools, using infographics made English reading easier to understand, and creating one's own infographic on Canva was a new and easy way to present information that can attract the readers.*

Some students indicated that they learned and developed skills including reading, listening, cognitive and critical skills as well as online literacy skills. They learned how to use different online tools to benefit their learning. The students also felt that online tools supported interaction between students and the teacher allowing students to work collaboratively to achieve a shared goal, and to receive guidance and feedback from the teacher.

Furthermore, many students' comments on the infographic-incorporated reading activities show that they had a positive experience using online tools. They perceived that technology can facilitate their learning and create a vivid learning atmosphere which is different from the tradition-based language classroom. Some statements revealing the students' views are:



*I had fun with this kind of classroom.*

*I need to learn and use more online tools.*

*Technology makes learning easy and convenient.*

*I would like this kind of classroom to happen in the future.*

*This class is interesting and different from others though the Internet connection is sometimes a problem.*

The students' views toward the technology tools: Google Docs, Padlet, and Canva, in terms of the advantages, disadvantages and obstacles to the implementation of these online tools in the classroom are presented as follows:

### **Google Docs**

The students regarded Google Docs a useful online tool. They said that using Google Docs allowed them to collaborate with group members on the same document without time or place limitations. One of the students stated that *"Using Google Docs makes collaboration easy because we were able to work together while being apart."* Another statement reflected the benefit of Google Docs as a space that allowed online discussion between group members.

### **Padlet**

From the teacher's observation, the students actively collaborated and interacted on an interactive wall of Padlet. They learned to post digital sticky notes to share their ideas, resources and learning products with other users. It can be said that Padlet is a whole-class engagement wall, and some students expressed their preferences on these walls by stating that:

*Padlet is so easy to pin up opinions.*

*It is easy to post and pin my infographics.*

*Padlet is a good tool to show a collection of students' products.*

### **Canva**

Many students were impressed by Canva. They found out that Canva made the learning process more interesting and fun. It enabled them to present

what they had learned from reading the texts in a more creative and interesting way. One student stated that “*Canva allows creativity and a new way of knowledge presentation.*” Some statements indicated that Canva was considered a user-friendly online tool which can make English text presentation fascinating and the English learning process more enjoyable.

Additionally, several students realized the usefulness of personal computers with Internet connections and smartphones. The former allowed more opportunities for online resource access and the latter made learning in a technology-integrated classroom more convenient, anytime and anywhere. Nevertheless, some data obtained from the students showed that utilizing infographics and online tools in English learning led to several problems or hindrances. The results from the open-ended questions were analyzed and the data reveals three main significant factors affecting learning. They are the Internet connection problem, the lack of vocabulary knowledge, and being unfamiliar with the online tools. The statements below illustrate their reflections:

*We need to learn more about English vocabulary.*

*Having good vocabulary knowledge would make it easier to understand English.*

*High speed Internet is needed for the better operation of the online tools.*

*Because I am not familiar with Canva, I find it hard to make a good graphic format.*

Furthermore, a statement made by one of the students revealed that though technology-integrated learning activities provided some benefits, they inhibited her long-term memory of information, so she preferred paper-based instruction where she could jot down notes allowing new knowledge to remain in her memory longer. This indicates that learners’ learning styles can affect each individual perspective towards a particular teaching approach. Another interesting point that the students considered valuable in a technology-supported classroom was the role of the teacher. This indicates that a supportive teacher is always an important component in any classroom instruction. Some students

shared some suggestions for the successful learning through the use of infographic assignments:

*Though infographic makes it easier to understand the English texts, we still need time to read and digest the information in detail.*

*Good computer connected to the Internet is important to complete the tasks assigned.*

Some comments from the students are useful and helpful for the teacher to prepare better learning activities in the future. One stated that it would be good to spend more time learning how to use Canva to create infographics. Another suggested that additional online resources such as videos should be integrated to make learning more interesting.

The data obtained from the study not only demonstrate the benefits of integrating infographic assignments and online tools into classroom instruction, but also provide some technical and instructional challenges. By observing student participation, although some students felt a new motivating atmosphere in reading activities, some felt uncomfortable experimenting with new online tools, and some students with high levels of computer anxiety found it confusing to understand and complete the assigned tasks.

The teacher/researcher may have overestimated students' digital skills, considering that they belong to the digital generation. The use of such technology may have caused some students to feel uncomfortable and then develop negative feelings about the technology-integrated classroom. It appears that these students struggled with the use of certain tools, and became discouraged with the blended learning environment. This evidence indicates that not all students have the same level of computer literacy. In addition, the teacher should not overestimate students' digital skills, but should provide adequate training and step-by-step instructions on how to use the selected online tools. To develop students' technical fluency with Canva, an infographic creation tool, for example, the students need to be provided with a better understanding of infographic devices and the basics of design. Moreover, they require more practice to become

familiar with Canva procedures. It can be said that it is important for the teacher to be aware that it may take considerable time for some students to feel comfortable using new technological tools and obtain new skills.

## **Discussion**

It is clear that the students had a positive experience engaging in infographic assignments and applying different types of online Web 2.0 tools to complete the given tasks. The findings revealed that reading infographics could be an alternative reading activity to assist students to comprehend English texts more easily because they integrate words and graphics to present complex information quickly and clearly (Davidson, 2014). At the same time, an infographic made it easier to understand than words alone and was considered a supportive tool that increases student motivation to read. In addition, the students expressed different views toward each online tool they employed. Google Docs was viewed as a great tool for communication and collaboration. The whole class was able to contribute to the Padlet walls by posting their notes and presenting their production easily and in real-time. Canva, in addition, was seen as a novel tool to present complex information in a more attractive and comprehensible way by integrating words and graphics. Data from the classroom observation also confirmed that the tasks provided an opportunity for the students to perform other skills other than language skills to achieve the learning outcomes. Most of them learned to use online tools, especially Canva, without difficulty and create an attractive infographic of the assigned topic.

Furthermore, in this study, the Padlet wall seems to play a supportive role in this teaching context by encouraging students to participate more. It was used as an online space for whole-class engagement and students' infographics exhibitions. It was found that this online space inspired the students to complete their assignments and therefore increased engagement. It enabled the students to see other people's work and to learn from one another. In a future application, it would be more beneficial to students if the teacher manages them to give peer-to-peer critiques. Peer comments would encourage them to become more critical

and gain valuable insights into the strengths and weaknesses of the design choices. This interactive space is regarded as an online community where the students can share, interact and sustain social conversations. It is thus crucial for the teacher to consider making available space such as a Padlet wall as it allows students to discuss, share and present their work or self-generated infographics, and this will encourage student responsibility and involvement as well.

As one of the major drawbacks that can hinder student performance is the instability of the network system, the teacher requires a backup plan in case of technology failure and should deal with technical issues and any enquiries quickly. Apart from this, students' learning style preferences can impact the attitudes toward a particular teaching technique or instructional tool. To support students with different learning styles, different types of tasks and online tools to match student learning styles should be carefully designed. For example, group work that encourages students with good computer skills to mentor others is a good idea, or selecting some interesting videos on YouTube to introduce a new learning topic can attract student attention. In addition, since most students are accustomed to paper-based instruction, they need time to learn when incorporating online and traditional teaching. It is therefore necessary for the teacher to equip them with sufficient learning strategies and be a facilitator during the activities, as well as monitoring the students' learning process, and providing assistance and feedback when appropriate.

Moreover, to implement the use of infographic assignments and online tools to assist EFL reading and to improve students' reading comprehension successfully, students require some development of vocabulary knowledge and more practice in making full use of the online tools. Students who lack basic knowledge of English might spend too much time figuring out how to start the work. The teacher should therefore encourage learners to acquire sufficient reading vocabulary knowledge that would support their reading for comprehension. Thus, it would be a good idea to present the target vocabulary in infographics and pre-teach it. Furthermore, to understand the use of infographics, it is important that students develop a better understanding of infographic devices

and the basic components of infographic design before creating their own infographics. A good infographic should pay attention to purpose, style, evidence including data and citation, and format (Davis & Quinn, 2013). In terms of ICT skills, since students possess different levels of computer skill, the teacher should provide training and clear instructions to increase students' confidence to employ different online tools to benefit their learning outcomes. In addition, the technical ability and creativity of teacher is also significant in order to create a successful learning environment. Therefore, teachers themselves should receive continuing training in technology implementation to develop more effective instruction.

As the research results have revealed several educational benefits of the use of an online tool, teachers are encouraged to employ appropriate technology to support learning achievement. In addition, they should take into consideration the previously mentioned suggestions to use online tools to assist and improve students' English language learning. Teachers who understand appropriate ways to integrate technological tools will be able to provide meaningful learning and authentic experiences that enhance learning for their students (Keengwe et al., 2008).

## **Conclusion**

The results of the action research confirm that infographic assignments can make learning English easier and motivate EFL students to read English texts in an enjoyable way. In addition, the students identified the benefits of using technological tools, which provide a learning environment that made learning convenient, engaging, and fun. Through a close reading activity, they were exposed to more than just English texts. Reading from infographic provided them with an opportunity to closely examine images, graphs and much more. They therefore improved their reading skills little by little and developed positive attitudes towards English reading activities. Moreover, online tools such as Google Docs, Canva, and Padlet, which required them to conduct various levels of thinking and skills, enabled the promotion of critical and creative thinking as well as collaborative skills.

Using infographic assignments therefore has potential to promote English reading in the EFL class and motivates as well as engages the students in the language learning process. It could be one of the most effective instruction ideas to assist EFL reading, and is a novel creative way to improve the reading skills of students. Incorporating technology in the classroom can clearly enable the teacher to teach better and can enable the students to learn better. Since technology has made a great contribution to the language learning process, it is important that today's language teachers learn how to take advantage of the technology and how to integrate it with their other teaching skills and the curriculum framework (Altun, 2015).

All in all, it is evident that the use of technologies can be advantageous to classroom teaching and studying. Consequently, integrating appropriate online tools into a language classroom to encourage reading in English and to increase the motivation to read is advisable. It is hoped that the findings of this action research will be useful for English language teachers and EFL students in developing better teaching and learning outcomes through the use of technological tools of the 21<sup>st</sup> century.

### **Limitations**

The research was conducted in a particular classroom setting with a small sample size, and therefore the generalizability of the findings should be viewed with caution. However, the results advocate the positive use of technological tools such as Web 2.0 in classroom settings for English language learning, which can boost reading skills and motivation.

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## Appendix

An online questionnaire consists of 5 close-ended questions and 5 open-ended questions as follows:

### Close-ended questions

**Please consider the following statements if you strongly disagree to strongly agree (1-5).**

1. Infographic assignments increased students' willingness to read the target language.
2. Infographic assignments helped students to better understand written texts.
3. Infographic assignments enabled students to remember words and language structures better.
4. Infographic assignments encouraged students' creativity.
5. Infographic assignments made the studying process motivating.

### Open-ended questions

**Please express your opinions towards the following questions.**

- Question 1: Which is the most interesting/motivating/useful online tool you have experienced from the infographic assignments? Why so?
- Question 2: What are three things you felt the most valuable about technology-integrated learning activities?
- Question 3: What problems did you encounter with the infographic assignments incorporated by different online tools?
- Question 4: Can you describe any problems and successes in completing the infographic assignments using online tools?
- Question 5: Do you have further comments about the infographic assignments?

### **Biodata**

I completed a B.A. in English and M.Ed. in TEFL from Chiang Mai University and received a certificate of completion in the online teacher training course: Building Teaching Skills Through the Interactive Web, from American English Institute, University of Oregon. I am currently a lecturer at the Faculty of Liberal Arts, Maejo University, Chiang Mai. My research interests include blended learning approach and L2 vocabulary acquisition.