

The Integration of Technology in Idiomatic Language Instruction: A Synthesis of Research in L2 Contexts

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Abstract: With the development of technology, the instruction of idiomatic language has been mediated with language games, applications, or movie clips. Because research has been conducted to explore the constraints and affordances of integrating technological tools into idiomatic language curriculum, a synthesis paper that seeks to review recent empirical studies in this topic is necessary. This paper thus aims to synthesize 14 research articles published within the last 10 years. The main focus is to present holistically the research contexts, participants, design and findings among these 14 articles. It was found that technology had positive impacts on student acquisition of idiomatic language. Drawing from the synthesis results, this paper also discusses some pedagogical implications for effective integration of technology into idiomatic language classrooms.

Keywords: idiomatic language instruction, technology, systemic review

Introduction

In many recent years, teaching idiomatic language has received great attention in language curriculum for two main reasons. First, given the wide usage of idioms by native speakers, it is necessary language learners be prepared with the meaning of these idiomatic expressions. Cooper (1998) argued that when idioms appear in TV show, the viewers need to be able to comprehend the idioms to understand the plot. Burke (1998) maintained if non-native speakers have little knowledge of English idioms, they may not be able to fully understand American movies, TV shows, news, or even typical conversations. Lundblom and Wood (2012) added that idioms are widely used in daily conversations, newspaper, and public media. Second, how to use idiomatic language competently remains a challenge for second language learners because idioms "add confusion and difficulties to the learning of language" (D'Angelo Bromley, 1984, p. 272). Therefore, even a language student with an excellent knowledge of grammar and vocabulary still need to be prepared with idiomatic expressions (Cooper, 1998). Because of the popularity and complexity of idioms in daily communication, learners should be given more opportunities to practice idiomatic language in their curriculum.

With the development of technology, the practice of teaching idiomatic language is no longer confined to just regular textbooks. New platforms such as online games, mobile messages, language apps have been used to enhance student learning experience of idiomatic expressions. These platforms offer language learners more opportunities to practice idiomatic language. Because empirical studies in this area continue to expand in recent years, a synthesis paper is necessary to explore the applications of technology in idiomatic expression instruction from different perspectives.

Literature Review

Integrating technological tools into idiomatic language curriculum

Multimedia technology has been used for teaching idiomatic language in the last two decades. Some recent studies set to explore the potential of using multimedia

applications in enhancing student retention of idioms. For instance, Tabatabaee and Reisi Gahroei (2008) explored the effectiveness of movie clips on 60 students' learning idioms. In the control group, 30 idioms were taught traditionally through synonyms and antonyms. However, these idioms were taught via movie clips in the experimental group. It was revealed that the experimental group outperformed the control group in the idiom multiple choice test after the experiment. In addition, Amer (2010) investigated 45 university students who used an application called 'Idiomobile' for learning idiomatic expressions and collocations. The study found that the more time students spent on learning idiomatic language on this application, the higher score they could achieve on the quizzes. Furthermore, Motallebzadeh, Beh-Afarin and Daliri Rad (2011) compared SMS-based versus traditional paper-based teaching methods in idiomatic learning. In this study 20 university students received collocations with definitions and examples via SMS while the other 20 students received them in printed hand-outs. Students in the SMS group were found to significantly retain idioms better than students in the paper-based group. Most recently, Haghighi (2017) also examined the effects of Telegram messenger and movie clip on Iranian EFL learners. By dividing study participants into one control group and two experimental groups, the researcher could identify whether Telegram messages and movie clips had any impacts on students' learning of idioms. Analysis of the post-test results showed that, students who were taught idioms via Telegram messages and movie clips apparently achieved higher scores than those in the control group. This study also noted students' positive attitudes towards the use of Telegram messages and movie clips in learning idioms.

With the development of Web 2.0, teaching idiomatic language to second language learners is not confined to traditional classrooms. Some mobile-assisted language learning (MALL) devices such as cellphones, MP4 players and personal digital assistants can considerably facilitate idiomatic language instruction. Specific computer

applications such as Telegram and Movie Clips have also shaped new light in technology-enhanced instruction of figurative language.

This synthesis paper aims to answer three research questions:

1. How were empirical studies in technology-mediated idiomatic language instruction conducted?
2. What results have been recorded when technological tools are integrated into the teaching of idiomatic language?
3. How do current empirical studies inform our instruction of idiomatic language?

Methodology

To gather relevant articles for this paper, we used Google Scholar with the advance search option. Specifically, we entered combined key words of *idiomatic language*, *technology*, and *L2* and set the publication year between 2009 and 2019. Each article found was screened based on its abstract. Articles selected for this synthesis paper must: (a) be an empirical study; (b) be published in a peer-reviewed journal within the last 10 years; (c) explore how technological tool(s) can support the instruction of idiomatic language. Any articles that did not satisfy these three criteria were excluded. A total of 14 articles were selected at the end of the screening process. Table 1 represents the journals in which each article for this synthesis paper was published.

Table 1

Distribution of empirical studies

Journal	Number of studies	Article
International Conference on Advanced Learning Technologies	1	Chew, Jhu, and Chen (2018)
British Journal of Educational Technology	1	Hayati, Jalilifar, and Mashhadi (2013)

Iranian Journal of Language Teaching Research	1	Khonbi and Sadeghi (2017).
Enjoy Teaching Journal	1	Mahmoodi-Shahrehabaki (2014)
CALICO Journal	1	Amer (2014)
Journal of Educational Computing Research	1	Müller, Son, Nozawa, and Dashtestani (2018).
Serious games	1	Shoukry, Caserman, Göbel, Steinmetz (2015)
Modern Language Studies	1	Haghighi (2016).
International Review of Applied Linguistics in Language Teaching	1	Kim and Nam (2017).
Theory and Practice in Language Studies	2	Pam and Karimi (2016) Freynd and Gross (2017)
Second Language Research	1	Durrant and Schmitt (2010)
International Journal of E-Collaboration	1	Jiang (2014)
Electronic Journal of Foreign Language Teaching	1	Vasiljevic (2015)

Each article was thoroughly reviewed based on the first two research questions. Table 2 provides an overview of each research article in five categories: (a) contexts and participants; (b) technology; (c) idiomatic language investigated; (d) study design; and (e) major findings.

Results

Research context and technology

In order to examine the integration of technology into idiomatic language instruction, it is vital to identify the context in which the empirical studies were conducted. Majority of the studies selected were set in the English as Foreign Language (EFL) environments while the rest were in the English as Second language (ESL) environments. Interestingly, Iran was the most popular research context with six studies in total. Other

EFL contexts were Japan, China, Taiwan, Korea, German, and Ecuador. The United States and the United Kingdom were the only two ESL settings. Furthermore, all studies focused on college or university adult learners with the exception of Shoukry et al. (2015) study which was conducted with autistic children.

Table 2

An overview of reviewed articles

Article	Context and participants	Technology	Idiomatic language	Study design	Major findings
Durrant and Schmitt (2010)	United Kingdom 84 non-native speakers of English enrolled in postgraduate course	Computer	Collocations	Experimental group	Students were able to retain and recall English collocations.
Hayati et al. (2013)	Iran 60 Persian learners of English	Short Message Service (SMS)	English idioms	One self-study group, one SMS-based group, and one contextualized group; Pre-test and post-test	Students receiving short mini lessons on their mobile phones via SMS were more enthusiastic and learned more than their counterparts on paper or contextual groups.
Amer (2014)	United States 45 participants	Idiomobile (a mobile software application)	Idiomatic expressions and collocations	Four groups based on their self-reported TOEFL scores; Data collection consisted of a preliminary questionnaire, application usage, and exit interviews.	Participants usage of the application correlated with their average scores on the quizzes in the application. Participants have strong positive attitudes toward the use of mobile technology in language learning.
Jiang (2014)	China 60 non-English major sophomores from a university	Short Message Service (SMS)	English idioms	One control and one experimental group; Pre-test and post-test; Post-study questionnaire	SMS-based input can improve learners' idiomatic proficiency.

Mahmoodi-Shahreabaki (2014)	Iran 60 intermediate EFL pupils' idiom learning	Movie clips	English idioms	One control and one experimental group; Pre-test and post-test	The participants in the movie clips group had better performance in post-test than in pre-test.
Shoukry et al. (2015)	German 12 autistic children	Blitzmerker (a mobile learning game)	Idiomatic expressions	Observations and questionnaires	Participants indicated that they enjoyed playing the game and that the game helped them learn many idioms.
Vasiljevic (2015)	Japan 36 first-year university students (22 females and 14 males)	Imagery-based technology	English idioms	Experimental group	Etymology was found to promote the retention of idiom meaning while pictorial support facilitated the recall of linguistic forms.
Haghighi (2016)	Iran 59 students	Telegram messenger and movie clips	English idioms	One control group and two experimental groups; Pre-test and post-test; questionnaire for two experimental groups	The Telegram and movie clips groups significantly outperformed the control group in the posttest. The participants had positive attitudes towards using Telegram messenger and movie clips in learning idioms.
Pam and Karimi (2016)	Iran 40 adult female students	Textual enhancement (color-coded, bolded, italic and sticky papers)	Idioms, phrasal verbs and fixed expression	One control and one experimental group; Pre-test and post-test	Experimental group performed better than the control group in learning idiomatic expression.
Freynd and Gross (2017)	Ecuador 81 adult college students	Multimedia technology	Idiom comprehension	One control and one experimental group; Data collected from idiom comprehension quiz	Results reveal a significant difference between the two groups and the mean score shows the experimental group scored higher than the control group
Khonbi and Sadeghi (2017)	Iran 47 English language learners at two language institutes	Short movie clip and PowerPoint slides	English idioms	Four experimental groups: each was taught idioms with different modes: short	The one-way analysis of variance (ANOVA) of the posttest results revealed significant differences among the four idiom-teaching modes.

				movie clip, sentences, PowerPoint slides, and role-play conversations	
Kim and Nam (2017)	Korea 100 adult college students	Word Processing SuperLab Pro	English idioms	Bio-data questionnaire; Pre-test and post-test	Structured input (SI) in word processing can develop L2 learners' idiom production ability and facilitate learner's accurate L2 idiom translation.
Chew et al. (2018)	Taiwan 80 university students	Augmented reality (AR)	English idioms	One control and one experimental group; Pre-test and post-test	AR-supported learning application is effective in assisting university students in learning English idioms.
Müller at al. (2018)	Two groups of EFL students in two different contexts: Iran (14 male students) and Japan (17 male and 5 female students)	Web-based education game	English idioms	Data were collected from a pre-questionnaire, a post-questionnaire, a pretest, and a posttest	Both groups had significant gains in idiom knowledge, with some variation. Idiom knowledge improvement was largely mediated by willingness to learn English.

The digital technology tools examined in the 14 articles can be categorized into three major groups: (1) multimedia technology, (2) mobile technology, and (3) augmented reality (AR) technology. The multimedia technology encompassed word-and-imagery-based technology such as Microsoft Word and Microsoft PowerPoint, web-based platforms such as web-based educational game and imagery search engines, and moving visual media (e.g., movie clips). The mobile technology examined were the short message service (SMS), telegram messenger, mobile app *Idiomobile*, and mobile learning game *Blitzmerker*.

Types of idiomatic language investigated

Idiomatic language comprises a profusion of forms, for instance, idioms, metaphors, proverbs, slang, hyperbole, and simile (Liontas, 2018). In addition, idiomatic language is

often associated with a constellation of 73 terms (Liontas, 2019) among which are idiomatic expression, figurative language, fixed expressions, idioms, and collocations to name a few. The present investigation examined 10 studies that focused on English idioms, one study on German idiomatic expressions, one study on collocations, and two study on a blend of idioms, collocations, and fixed expressions.

Research methodology

Thirteen of the studies employed experimentations as the research method and another study (Shoukry et al., 2015) utilized observation. Five of the 13 studies (Jiang, 2014; Mahmoodi-Shahrehabaki, 2014; Pam & Karimi, 2016; Freyn & Gross, 2017; Chew et al., 2018) employed simple experiment method with one experimental group and one control group. Two studies (Haghighi, 2016; Kim & Nam, 2017) employed multiple experimental groups and a control group. The remaining six studies utilized multiple experimental groups without control group for their study. Vasiljevic (2015) and Müller at al. (2018) compared two experimental groups, Durrant and Schmitt (2010) and Hayati et al. (2013) set three experimental groups side by side, and Amer (2014) and Khonbi and Sadeghi (2017) juxtaposed four experimental groups.

Findings

The results presented in these articles suggest that technology has become an essential piece for teaching idioms to L2 learners. For example, Chew et al. (2018) indicated the effectiveness of implementation of the AR technology in assisting university students in learning English idioms. By comparing the control and experimental groups, Haghighi (2016) noticed the positive effects of telegram messenger and movie clips on idiom learning among Iranian EFL learners. The integration of mobile phones into idiom teaching offer opportunities for second language learners. Students receiving short mini-lessons on their mobile phones via SMS were more enthusiastic and learned more than their counterparts on paper or contextual groups (Hayati at al., 2013). Similarly,

periodical input via SMS was found to improve learners' idiomatic proficiency and knowledge (Jiang, 2014).

Idiomobile, a mobile software application, could yield positive results in learning idiomatic expressions and collocations although it is not easy for first-time users. In Amer's 2013 study, learners indicated that they acquired more idioms and collocations within a short period of time. Similar results were seen in Shoukry's et al. 2015 study in which *Blitzmerker*, a mobile learning game, was used for helping children understand idiomatic expressions. This game was created for Android phones and tablets and evaluated with 12 autistic children. Participants expressed that they enjoyed playing the game and that the game helped them learn many idioms.

Movie clip is another multimedia tool explored in two empirical studies. Using movie clips indeed played an important role in learning idioms (Khonbi & Sagedi, 2017) and produced positive effects on L2 student acquisition of idioms (Mahmoodi-Shahrehabaki, 2014). These two studies also reported that students who practiced English idioms using movie clips achieved better results than those who did not have any technological intervention. Muller et al. (2018) investigated the effects of web-based educational games in two contexts, Iran and Japan. This study observed that students in both contexts gained more knowledge of idiomatic expressions. Study participants also expressed that, because educational games were integrated in their curriculum, they were motivated to learn more English idioms. The use of multimedia technology yielded positive results in idiom comprehension in Frey and Gross' (2017) study. They recommended multimedia technology in second language classrooms because students in the experimental group achieved higher scores in idiom comprehension quiz than those in the control group.

Teaching idiomatic language with technological support is also promising in four recent studies. Durant and Smith (2010) explored the potential of computer-based presentation and noticed students' high ability to retain and recall English collocations. Vasiljevic (2015) compared the effectiveness of two imagery-based techniques with pictorial support and etymological notes. Etymology was found to promote the retention of idiom meaning while pictorial support facilitated the recall of linguistic forms. Pam and Karimi (2016) investigated the effects of textual enhancement and found that this method enhanced students' incidental idiom learning. Kim and Nam (2017) analyzed the role of structured input (SI) using word processing software and suggested that this method can develop L2 learners' idiom production ability and facilitate learner's accurate L2 idiom translation.

Discussion

Using a rich context to help students make sense of unknown words or phrases had received some attention in research literature. Nippold and Martin (1989), for instance, supported the use of contextual cues because they could help readers get the meaning and enhance the interpretation of language idioms. Brown (2001) indicated that if language learning occurs in a context-reduced form, it will be hard for learners to acquire the language. The 14 articles reviewed in this paper—though differ in technological tools, study participants, and study designs—seek to explore the impacts of rich contexts mediated by technology on students' learning English idioms. Video games, for example, can create the social contexts where idioms exist (Al-Ramahi & Smadi, 2015) and such contexts can support students' understanding and using English idioms. Therefore, these articles echoed the importance of context enhancement in idiom instruction established in research literature. By creating a rich learning context via technology, the authors of these 14 articles showed the positive impacts of various applications such as movie clips, software applications on student acquisition of English idioms. Some of the positive impacts include but are not limited to developing students'

language proficiency and idiomatic knowledge. It was also reported that technology-mediated instruction motivated student to learn English idioms.

Considering idiomatic expressions as one of the important aspects of foreign language and second language competency and due to their crucial role in language proficiency, idiom instruction has been a subject of research for a long time. Teaching and learning idioms are the most challenging activities in the field of teaching foreign languages when language instructors strive to find effective and consistent strategies to teach idiomatic expressions.

Based on the synthesis results, it is unquestionable the dynamic between technology and the learning of idioms, and how its interaction has provided considerable effects on the language teaching-learning process. It is clear how electronic devices can be a tool for educational purposes. In this sense, some teaching practices should be considered when integrating technology into idiomatic language instruction.

First, it is necessary for teachers and students to deal with idioms in a suitable environment where technology is a facilitator for learning, and where the communicative skill is developed in real situations. Teachers must be aware of the importance and advantages of using technology for the development of the four language skills in English. Thus, they must be prepared enough to ensure knowledge on how to integrate technology into their lesson planning. Teacher qualifications and professional development are crucial to reach a success teaching-learning process.

Second, technology must serve the needs of a diverse group of students, especially those students with disabilities. Based on the Shoukry's findings about the effect of mobile applications for teaching idiomatic expressions to children with autism, it is

suggested to teachers to revise this method for teaching idioms. In this way, they may try to incorporate new teaching techniques for those with special needs.

Third, integrating technology in education helps students stay engaged. The articles reviewed have shown the possibilities of mobile devices like smartphones for teaching idioms. It seems logical to align the teaching process with the way that students learn better. However, it is important to note that while many students already know how to use apps, they may need some guidance on how to effectively and strategically utilize vocabulary apps to maximize their learning and reach their own goals.

Further, the implementation of an online English idiom game is an effective strategy for learning of English idioms. The web-based game provides learners with opportunities to listen, to read, and learn idiomatic language. A computer game could encourage acquisition through individualized interaction that is reinforced by related social interactions.

Finally, considering the diversity of mobile devices which range from tablets to other small form-factor smartphones, researchers could investigate how they are currently being used in classrooms and how they influence students' performance in class which can be valuable in identifying which of these might be relied on for serious language learning and how they can be used to motivate learners. Technology transforms the learning experience because students have access to an incredible amount of new opportunities. However, the factor "teacher" must be taken into account as a guide and as a student's support in the learning process.

Limitations

This synthesis paper focused on empirical studies published peer-reviewed journals within the last 10 years. Given the space limit, this paper could not capture all

theoretical frameworks underpinning all reviewed articles. The main focus of this paper, however, is to explore the constraints and affordances of technology-mediated instruction of idiomatic expressions. There can be a separate paper discussing specific theoretical constructs guiding research in this area.

This paper reviewed empirical studies in L2 contexts without specifying ESL or EFL. Although these two contexts are different and findings in one context may not be generalized to the other, this paper seeks to provide an overview of how technology can mediate idiomatic language instruction. It should be noted that 14 empirical studies reviewed in this paper were found via Google Scholar search database. Additional studies may be found via other search engines such as *Baidu Scholar* or *Microsoft Academic*. Therefore, the synthesis information in this paper should be interpreted with caution.

Conclusion

Although learning idioms can be a challenge for non-native speakers of English, it does not mean idiomatic language instruction should be excluded in EFL classes. To enhance students' learning experience of idiomatic expressions, language educators may integrate technological tools into their language classes. While it is speculative at this point that technology-mediated instruction of English idioms can offer affordances for second language learners, further studies should continue exploring this topic in different contexts before firm conclusion can be made. Moreover, as the impact of technology on English idiom instruction may not be evident after a short-term experience, longitudinal studies in the future may do well in investigating the complicated processes and outcomes of student acquisition of idiomatic language.

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