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Chinese EFL Learners' Attitudes Towards Smartphone-Based Reading

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***Abstract*—Reading through mobile phones is increasingly popularized worldwide, particularly among young adults. However, few researchers investigate EFL learners' attitudes towards smartphone-based reading. The present research conducted a questionnaire survey to explore EFL learners' perceptions and beliefs by integrating the reading attitude model with the technology acceptance model UTAUT2. One hundred ninety-two participants responded to the questionnaire. The statistical data analysis, including t-tests and analysis of variance (ANOVA), indicated that Chinese EFL learners were generally positive in smartphone-based reading. Although they did not show keen feelings about it or form a habit of using the smartphone for EFL reading, they could perceive its usefulness and ease of use and positively believed in its future use in EFL reading. Additionally, gender differences did not impact EFL learners' overall attitudes. Still, participants' interest in English and experiences in mobile reading did suggest positive influences on their attitudes towards reading through the phone. Finally, the implications of the results and pedagogical practice of smartphone use in EFL reading are discussed.**

***Index Terms*—smartphone-based reading, mobile reading, attitudes, EFL**

I. Introduction

Reading through mobile devices has increased since the global COVID-19 (coronavirus) pandemic broke out in 2020. In many countries, online reading, particularly reading with mobile devices, rises considerably, while physical book sales dropped sharply because of the lockdown and social distancing (Global English Editing, 2020). In China EFL (English as a foreign language) context, the smartphone also manifests great potential in reading. According to the 16th China's national reading survey report from the National Reading Research Group of China (NRRGC) (2019), the percentage of reading through mobile phones rises each year, faster than print reading, and the readers are mainly young people between the age range from 18 to 29.

The tendency to read on the phone might be because rapidly spread news and information can all be found expeditiously online through this small gadget. Also, the present mobile learning context seems to be a booster for smartphone use on campus. The existing online learning context provides students with more chances for mobile reading. Although it is sometimes more challenging than paper-text reading (Hazaea & Alzubi, 2016), smartphones provide EFL learners with more portable and accessible English reading experiences (Liu & Huang, 2016).

Given the growing tendency of smartphone-based English reading, understanding learners' attitudes toward reading on small gadgets becomes vital in integrating mobile devices into language teaching and learning. However, there are few studies investigating smartphone-based reading attitudes. Although some researchers (Cheng & Kim, 2019; Zou & Li, 2015; Zou & Yan, 2014) concentrate on smartphone use in their studies, they investigate general usage of phone apps in language learning and report learners' optimistic beliefs in the advantages mobile learning will bring to EFL learning (Chen, 2015; Chiang, 2020; Zou & Yan, 2014). Besides, there is a gap in research on learners' attitudes toward smartphone usage in EFL reading (Cheon et al., 2012; Dweikat, 2019). According to Kocaarslan (2016), a positive attitude can predict higher achievement in reading comprehension; however, in mobile reading literature, EFL learners' attitudes towards smartphone-based reading remain unknown. As a result, the current study will look into Chinese EFL learners' attitudes regarding smartphone reading, including their evaluative views and effort expectations, likes and dislikes (prevailing feelings), social impact, reading habits, and readiness to use the smartphone to read English (Mathewson, 1994; Venkatesh et al., 2012).

II. Literature Review

Attitude significantly moderates learners' reading desire and behaviour from a psychological perspective (Bastug, 2014; Petscher, 2010). Many teachers consider reading attitudes relevant to students' language learning achievement (Kush et al., 2005) and positively predicting one's education success (Lazarus & Callahan, 2000). Some researchers claim that reading attitudes can lead to readers' choice of reading or otherwise (Alexander & Filler, 1976; Smith, 1990), but some argue that the concept of reading attitudes relates to reading beliefs and objectives (Guthrie & Wigfield, 1999). Although reading attitudes have many definitions, researchers generally concur that the three dimensions for scaling learners' reading attitudes are prevailing feelings about reading (affect), evaluative beliefs about reading (cognition), and readiness and intentions for reading (behaviors) (Bastug, 2014; Kim, 2016; Mathewson, 1994; Yamashita, 2004, 2013).These three elements are regarded as the leading theory supporting the current study.

A. Learners' Attitudes Towards Digital Reading

Mass media negatively influences students' attitudes towards reading (Turkyilmaz, 2014). Students reveal many defects in using mobile phones for language learning, such as the limited screen size and a small keyboard, distracting SMS background messages, and small memory of smartphones (Hilao & Wichadee, 2017). Furthermore, digital reading devices are reported to be very inconvenient in annotating and notetaking (Bold & Wagstaff, 2017). Participants' attitudes toward reading electronic materials are more negative when compared with reading traditional books (Akbar et al., 2015). Some researchers compared secondary school students' perceptions of different types of reading in print and digital formats, discovering that from sixth to eighth grade, participants' perceptions of both recreational and academic reading in digital settings deteriorated, while academic print, on the other hand, eventually attracted students (McKenna et al., 2012). When reading academic materials, students prefer printed texts to technological media (Foasberg, 2014). However, regarding the increasing use of internet technology in reading, positive results are also suggested by several research studies (Chen et al., 2013; Kaman & Ertem, 2018; Karim & Hasan, 2007; Weisberg, 2011), particularly among tertiary students. According to a study in one university of Malaysia, online materials are becoming widely accepted reading sources by its participants (Karim & Hasan, 2007). Although students might not give preference to e-reading when they first get access to electronic materials, Weisberg (2011) claims that they tend to show an increasingly acceptable attitude toward digital textbooks from "overly pessimistic" to "preferred way" gradually during the three-year study period. Similarly, after a 9-week e-book extensive reading program, tertiary students possess a better reading attitude compared with the situation before the E-book extensive reading program (Chen et al., 2013). Like adult learners, some 4th graders think digital reading is an enjoyable and positive experience (Kaman & Ertem, 2018).

In sum, negative and positive findings about students' attitudes towards digital reading exist. However, whether the same arguments will exist in mobile devices with small-sized screens (e.g., smartphones) has rarely been investigated. The following section reviews studies on EFL learners' attitudes towards mobile devices.

B. EFL Learners' Attitudes Towards MALL

It seems inevitable to explore learners' attitudes towards language learning using mobile devices, particularly when smartphones or iPads are pervasively used in and out of classrooms to assist English learning in EFL countries. Chen (2013) investigates Chinese EFL students' attitudes towards out-of-class language learning by using tablets. This study shows that students favor tablet computers because they can be practical and useful tools in language learning, creating a better learning environment for students to collaborate and interact with each other. University students from China and Korea hold the same positive attitudes towards using mobile apps in language learning. They primarily consider those language learning apps as effective tools for improving their language skills such as pronunciation, vocabulary, listening, and reading (Cheng & Kim, 2019). The literature contains additional findings that are similar, but the majority of these studies (e.g., Hashim et al., 2016; Nami, 2019; Zou & Li, 2015; Zou & Yan, 2014) concentrate on students' attitudes toward the general use of phone apps in the development of language skills. Only a small number of studies investigate specific uses, such as vocabulary learning and testing tools. In the EFL context, university students reported their favor of dictionary phone apps and showed positive attitudes toward using apps (Ebadi & Bashiri, 2018; Nami, 2019). And in Taiwan, the mobile app "Kahoot!" is well accepted by students in college EFL reading classes (Chiang, 2020). This study provides supportive evidence for enjoyable learning with the help of mobile apps in language education.

As is shown in the studies mentioned above, mobile learning is predicted to be a potential pedagogical tool to serve higher education despite challenges and barriers. A general research trend of internet technology development is shown to shift from focusing on computer/digital devices to mobile gadgets in language learning and teaching due to the ubiquitous use of mobile devices. Some researchers have begun to centre on phone app adoption and intend to investigate learners' attitudes towards them. One cause of this tendency might be that many people are shifting their reading habits from printed books to online reading and mobile devices such as smartphones (Shimray et al., 2015). But a noticeable research gap is found in learners' attitudes towards mobile learning: although some researchers are exploring e-reading (reading online, digital reading on e-readers, computers, or tablets) on devices with bigger screens, few study probes into EFL readers' attitudes of hypertext reading on smartphones.

C. Attitude Models

Reading on mobile devices is not just about reading the counterparts of the printed version. Even though reading linear texts and hypertexts demands similar skills, digital contexts require readers with more interaction and navigation (McKenna et al., 2012), e.g., smartphones provide readers with a different experience in that they not only read the texts but also process visual and audio media. Therefore, their attitudes towards mobile reading in the digital setting may also influence the reading process. It thus seems necessary to consider mobile technology acceptance when investigating learners' reading attitudes.

Since research on mobile reading is rare and no existing theoretical model can be adopted in this current study, the researcher modified the existing reading attitude model (Mathewson, 1994) and integrated it with the Unified Theory of Acceptance and Use of Technology from Venkatesh et al. (2012).

(a). Reading Attitude Model

Mathewson (1994) presents a model in which three domains are the core factors to measure one's reading and learning attitudes: "prevailing feelings", "action readiness" and "evaluative beliefs" (p.1135). The three factors influencing learners' reading intention will also be affected by the action of reading. Based on Mathewson's model, many researchers develop their studies on reading attitudes. For example, Yamashita (2013) investigates the effect of extensive reading on reading attitudes in the Japanese EFL context, primarily focusing on two domains (prevailing feelings and evaluative beliefs). Although other studies had employed the questionnaire she adopted in her research with strong supporting evidence (Stoeckel et al., 2012; Yamashita, 2007), one of the essential domains-"action readiness"-has been left unexamined. According to Yamashita (2004), the reason is that it might be meaningless to investigate participants' intentions and actions of L2 reading in the EFL context where not many English books are available.

Mizokawas and Hansen-Krening (2000) apply the three psychological factors of "ABCs": "affect", "behaviour" and "cognition"(p.72), which are equivalent to the three domains of prevailing feelings, action readiness, and evaluative beliefs, in inquiring about the reader's response through reading programs. They suggest that literature circles and dialogue journals are two effective techniques to push students to respond to reading, making assessing the ABCs of reading attitude possible and simultaneously developing students' reading experience. Even though teachers finally need to interpolate and extrapolate students' responses from solid evidence, such as reconstructing the affective and cognitive factors from readers' reading behaviors, according to Mizokawas & Hansen-Krening, what they gain through employing ABCs is significant to them in teaching.

To sum up, the reading attitude model with three domains proposed by Mathewson (1994) has been adopted by many other researchers (Mizokawas & Hansen-Krening, 2000; Stoeckel et al., 2012; Yamashita, 2004, 2007, 2013) who provide evidence of utilizing it as a supporting model. Since it can be used to investigate language learners' attitudes toward reading (Mathewson, 1994), the researcher adopts this reading attitude model in this study and merges it with the Unified Theory of Acceptance and Use of Technology (UTAUT2) for the research purpose.

(b). Development of UTAUT2

EFL learners' attitudes towards smartphone-based reading are what the current study intends to investigate. To achieve this research goal, we integrated three core elements of the reading attitude model from Mathewson (1994) with mobile technology acceptance variables because reading on smartphones is not the same as traditional paper-based reading (McKenna et al., 2012; Öquist & Lundin, 2007).

A frequently adopted model for information technology acceptance is TAM, proposed initially by Davis (1989), which has been modified and developed in several generations (Putra, 2018) in subsequent years. TAM is reported to be a well-designed theoretical tool to investigate learners' acceptance of mobile devices used in language learning (Kim & Lee, 2016).

However, choosing among those multiple generations of TAM is considered troublesome before conducting studies. Therefore, after reviewing eight existing TAM models with empirical comparison, Venkatesh et al. (2003) formulated the Unified Theory of Acceptance and Use of Technology (UTAUT), which was then extended into UTAUT2 (Venkatesh et al., 2012). This newly proposed model incorporates seven constructs: "performance expectancy", "effort expectancy", "social influence", "facilitating conditions", "hedonic motivation", "price value", and "habit". With supporting evidence from testing and confirmation, UTAUT2 becomes a helpful tool for assessing user acceptance of new technologies. Thus, we merged it with Mathewson's reading attitude model to support the current study.

(c). Integration of Reading Attitude Model and UTAUT2

To design the mobile reading attitude model, we adopted the three core elements, "prevailing feelings about reading", "action readiness for reading" and "evaluative beliefs about reading" from Mathewson's model, and five elements from UTAUT2: "performance expectancy", "effort expectancy", "social influence", "hedonic motivation", and "habit". Since this research did not aim for one particular app, and there were no specific enabling needs or prices for participants to consider, the elements of "facilitating conditions " and "price value " were not incorporated in the new model. Thus, through integration, we designed a new model with six constructs for obtaining a clear view of Chinese EFL learners' attitudes towards reading on smartphones. The six constructs are evaluative beliefs (performance expectancy), effort expectancy, prevailing feelings (hedonic motivation), social influence, habit, and action readiness.

Evaluative beliefs in this study mean beliefs in the usefulness of smartphones in EFL reading, similar to the "performance expectancy" element from the UTAUT2 model. It is confirmed as the strongest predictor of behavioral intention (Venkatesh et al., 2012). Effort expectancy indicates the degree of ease concerning reading English on mobile devices. Social influence is related to the reader's beliefs in others' perceptions of using mobile phones to read English. Prevailing feelings refer to feelings about reading on mobile phones, which is the same as "hedonic motivation" from the UTAUT2 model. Habit is defined as the outcomes of previous experiences, reflecting learners' EFL reading habits on smartphones in this study. Action readiness means the action for the intentions towards EFL reading through smartphones. All six constructs predict EFL learners' acceptance of mobile reading and their attitudes.

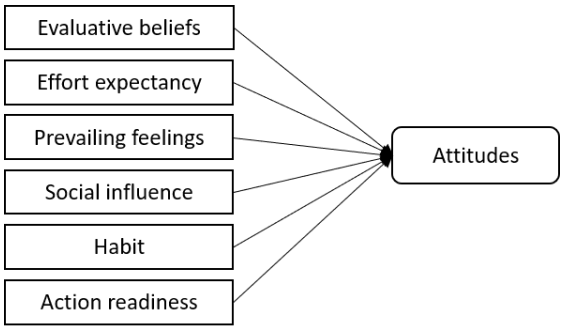

Figure 1 Mobile Reading Attitude Model

III. Methodology

The study employed a quantitative method to investigate Chinese EFL learners' attitudes towards smartphone-based reading. A questionnaire survey was conducted among university students in China to produce statistical results.

A. Participants

One hundred ninety-two participants were drawn from non-English major students in one of the local universities in China. All the participants were EFL learners, having had English learning experiences for more than ten years, from primary school to college. They were recruited to this university from several provinces all over the country and enrolled in different majors, such as Finance, Accounting, and Information Technology. The participants were required to attend a College English course for four continuous semesters, which on average took them 135-minute in-class time each week. Without much chance of using English, the participants needed to read or listen as much as possible to maintain and improve their language proficiency; therefore, they were suggested to read extensively after class. The materials they chose to read were usually related to the examinations they would take, such as articles from the nationwide past exams--College English Test, band 4 (CET4). Sometimes they read English with their smartphones.

B. Instrument

In the current study, a questionnaire was designed to investigate participants' attitudes towards EFL reading via smartphones. It was framed with the reading attitude model from Mathewson (1994) and the technology acceptance model of the Unified Theory of Acceptance and Use of Technology (UTAUT2) from Venkatesh et al. (2012).

The questionnaire comprised two sections. In Section I, four questions were listed for collecting participants' basic demographic information: Student ID number, gender, interest in English, and experiences in EFL reading via smartphones. In Section II, 31 items for measuring attitudes towards reading via mobile phones were adapted from a group of studies (Chen, 2015; Cheon et al., 2012; Venkatesh et al., 2012; Yamashita, 2007; Yamashita, 2013). All the items were included under six constructs: evaluative beliefs, prevailing feelings, effort expectancy, social influence, habit, and action Readiness. They were presented with five Linkert-type responses ranging from (1) "strongly disagree" to (5) "strongly agree". The questionnaire was translated into Chinese (participants' native language) while it was distributed to the participants.

C. Data Collection and Analysis

To ensure the validity and reliability of the questionnaire, we invited three experts in EFL teaching and researching to check the items and provide suggestions for revising the content and choosing more accurate expressions. Before the questionnaire survey, all participants had attended a ten-week-long reading program. They were suggested reading English after class using a phone app called "Shanbei Reading". In this program, participants did EFL reading every week with their smartphones. When the program ended, the questionnaire was distributed to learners online (https://www.wjx.cn/) for a pilot study, in which 50 participants submitted their responses.

In the pilot study, the internal consistency was checked through Cronbach's Alpha formula in SPSS software version 21, and the reliability coefficient was 0.840, which was acceptable for the current study (Dörnyei, 2007). However, among all the six constructs, two constructs (social influence and habit) presented a relatively lower reliability

coefficient (α<0.6). Therefore, based on the reliability analysis, we deleted one item from the social influence construct that reduced the scale's internal consistency and edited three items from habit construct. Finally, 30 items were used for the current study.

192 Chinese EFL learners responded to the questionnaire through the online web link. Although one construct (Effort Expectancy) still showed a relatively lower internal consistency level (α=0.551), which is considered moderately reliable according to Hinton et al. (2014), the reliability of all the constructs was better (α=0.895) than those in the pilot study. Participants' responses to all the question items were coded based on the 5-point Linkert scale. For example, "Strongly disagree" means 1 point, while "Strongly agree" means 5 points. SPSS software version 21.0 was used to compute all the statistical data to explain the findings.

IV. Results

To determine EFL learners' attitudes towards smartphone-based reading, we conducted a questionnaire survey to collect statistical data. Through analysis, we found that participants generally hold a favourable view in smartphone-based reading.

A. Overall Situation of EFL Learners' Smartphone-Based Reading Attitudes

We conducted a one-sample t-test by comparing the score for the overall questionnaire and each construct, with the midpoint of being three (see Table 1 below).

Table 1
Overall Attitudes Towards Smartphone-Based Reading

Construct	*Test Value =3*			
	M	*SD*	*Sig.(2-tailed)*	*Mean Difference*
Evaluative Beliefs	3.93	.52	.000	.93
Effort Expectancy	3.40	.42	.000	.40
Prevailing Feelings	3.07	.63	.134	.07
Social Influence	3.47	.51	.000	.47
Habit	3.04	.59	.379	.04
Action Readiness	3.68	.57	.000	.68
Overall attitudes	3.42	.39	.000	.42

As shown in Table 1, although there was no significant difference shown in the constructs of "prevailing feelings" (*M*=3.07; *SD*=.63) and "habit" (*M*=3.04; *SD*=.59), EFL learners were generally positive in smartphone-based reading (Overall attitudes, *M*=3.42; *SD*=.39). Among the six constructs, participants were most positive in "evaluative beliefs," the usefulness of smartphone-based reading (*M*=3.93; *SD*=.52).

As to each item, participants showed their distinct preferences and beliefs in reading via smartphone, particularly believing that they can read English on the phone without the constraint of time or place (Item 6, *M*=4.41; *SD*=.55). Besides, the ease of selecting reading material (Item 8, *M*=4.30; *SD*=.54), the abundant information they could obtain through the phone (Item 3, *M*=4.22; *SD*=.58) and the convenience of looking up English words while reading on the phone (Item 10, *M*=4.08; *SD*=.80) were all given a high score by the participants, which indicated that Chinese EFL learners held more optimistic view in smartphone regarding its usefulness and ease of reading as an information medium.

However, participants were rather negative in annotating (Item 7, *M*=1.99; *SD*=.79), concentration (Item 9, *M*=2.02; *SD*=.84), patience (Item 15, *M*=2.62; *SD*=1.01), strain(Item 16, *M*=2.43; *SD*=.88), sharing reading material with others(Item 21, *M*=2.64; *SD*=.88), reading frequency (Item 25, *M*=2.79; *SD*=.82) and reading habit (Item 26, *M*=2.73; *SD*=.82). This meant Chinese EFL learners might not tolerate with the defects of the smartphone as a reading medium.

B. Gender Differences in Smartphone-Based Reading Attitudes

To explore the differences in mobile reading attitudes between male (*N*=62) and female (*N*=130) students, we conducted an independent-sample t-test by comparing the mean of all the items. It turned out that their overall attitudes towards smartphone-based reading did not differ significantly. However, it is noticeable that boys (Item 18, *M*=3.23; *SD*=1.08) were less influenced by famous online figures than girls (Item 18, *M*=3.53; *SD*=.86), and they (Item 7 *M*=2.18; *SD*=.82) showed more tolerance in smartphone's annotating and highlighting function than girls (Item 7, *M*=1.90; *SD*=.78) (see Table 2 below).

Table 2
Gender differences in smartphone-based reading attitudes

Item	*Test Value =3*			
	Gender	*M*	*SD*	*Sig. (2-tailed)*
7. Reading English via smartphone is difficult for me to annotate or highlight the key points.	Male	2.18	.82	.024
	Female	1.90	.78	
18. Some influential people in society or web platforms have recommended English reading apps or reading material for me.	Male	3.23	1.08	.036
	Female	3.53	.86	

C. Overall Attitudes of EFL Learners With Different Interest Levels in English

The questionnaire survey included a question investigating participants' interest in English learning. According to their responses, we grouped them into three kinds: students that were highly interested in English (Group 1, *n*=27), a little interested (Group 2, *n*=100), and not interested (Group 3, *n*=65). To determine whether interest in English learning is a factor that influences students' mobile reading attitudes, we conducted a one-way ANOVA on SPSS software. The analysis showed that three groups of participants differed significantly from each other in the overall beliefs in smartphone-based reading (see Table 3&4). The more interest they had in English, the higher score they had in attitudes (Group 1, *M*=3.72, *SD*=.39; Group 2, *M*=3.45, *SD*=.36; Group 3, *M*=3.26, *SD*=.36), which meant that the more EFL learners were interested in English learning, the more positive they were in mobile reading (see Figure 2).

TABLE 3
OVERALL ATTITUDES OF EACH INTEREST GROUP

Groups of participants	*M*	*SD*	*N*
Group 1 Highly interested	3.72	.39	27
Group 2 A little interested	3.45	.36	100
Group 3 Not interested	3.26	.36	65
Total	3.42	.39	192

TABLE 4
DIFFERENCES OF EACH INTEREST GROUP IN OVERALL ATTITUDES(ANOVA)

	Sum of Squares	*df*	*Mean Square*	*F*	*Sig.*
Between Groups	4.121	2	2.060	15.468	.000
Within Groups	25.176	189	.133		
Total	29.296	191			

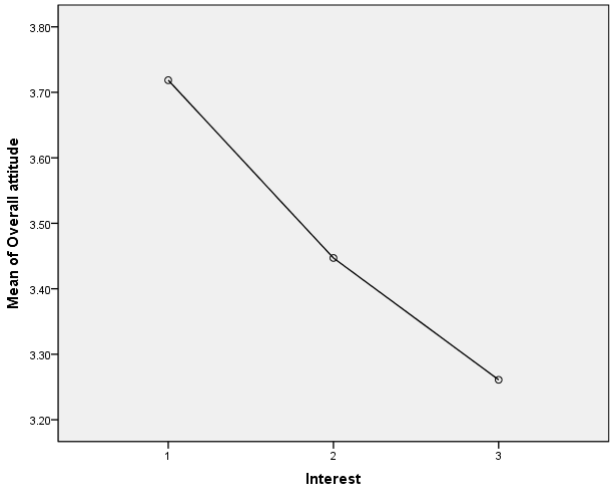

Figure 2 Mean Plots of Overall Attitudes for Each Group

D. Attitudes of EFL Learners With Different Experience Levels in Smartphone-Based Reading

Based on participants' responses to question 4 (about smartphone-based reading experiences) in Section I of the questionnaire, we separated them into two groups: more experienced students that had read English through mobile phones before coming to the university (Group 1, *N*=118) and less experienced students that started mobile reading after coming to the university (Group 2, *N*=74). We conducted an independent-samples t-test by comparing the mean of each group regarding their overall attitudes and all the six constructs. It turned out that there was a significant difference between the two groups in overall mobile reading attitudes (see Table 5), with the more experienced students (*M*=3.50, *SD*=.39) being more positive in smartphone-based reading than those with less experience (*M*=3.29, *SD*=.37). The statistical results also showed that Group 1 was significantly positive than Group 2 in constructs of "prevailing feelings," "social influence," "habit" and "action readiness," but remained similar to Group 2 in "evaluative beliefs" and "effort expectancy." This result might indicate that the more Chinese EFL learners read English through mobile phones, the more willing they would accept the phone as a reading medium.

TABLE 5
ATTITUDES OF EFL LEARNERS WITH DIFFERENT EXPERIENCE LEVELS IN SMARTPHONE-BASED READING

Constructs	*Test Value =3*			
	Group	*M*	*SD*	*Sig. (2-tailed)*
Overall attitudes	1	3.50	.39	.000
	2	3.29	.37	
Evaluative Beliefs	1	3.98	.49	.054
	2	3.84	.56	
Effort Expectancy	1	3.43	.40	.297
	2	3.36	.44	
Prevailing Feelings	1	3.19	.61	.001
	2	2.88	.63	
Social Influence	1	3.54	.49	.012
	2	3.35	.51	
Habit	1	3.17	.59	.000
	2	2.82	.52	
Action Readiness	1	3.78	.54	.003
	2	3.53	.58	

V. DISCUSSION

This study aims to investigate Chinese EFL learners' attitudes towards smartphone-based reading. Overall, the results suggest that participants' general beliefs about reading through the mobile phone were positive. They believed that smartphone-based reading could be helpful and convenient. Other people might have influenced them to use the phone to read English, and they appeared open to using the phone to read English in the future. However, they had not developed a habit of reading English via their smartphone, and their feelings towards utilizing a smartphone for reading were neither positive nor negative.

Little effect of gender differences was found in the current study except that female students were more likely to be influenced by other people in mobile reading and more uncomfortable with smartphone use in taking notes. Perhaps this is because girls usually took reading more seriously and were more likely to take notes frequently while reading on the phone, unlike boys, who read mainly for entertainment and enjoyment (McKenna et al., 2012; Weiser, 2000).

The findings suggest that both participants' interest level in English learning and experience level in smartphone-based reading were two factors that influenced their attitudes. According to the results, we found that the more interested the participants were and the more experiences they had in mobile reading, the more positive attitudes they held towards smartphone-based reading. It was likely that their interest in English encouraged them to believe the effect of reading English through smartphones. The longer time they spent on mobile reading, the more they enjoyed it. In addition, the more they were used to it, the better their expectations would be for its future use. Also, they were more inclined to accept others' reading recommendations.

In the following section, we will discuss the findings based on the six constructs of the questionnaire survey.

A. Evaluative Beliefs

Regarding the usefulness, participants extensively recognized smartphones as an effective tool for English learning and accessing information. As a language, English is the carrier of information and a school subject in the EFL country. Undoubtedly, the smartphone provides language learners with more opportunities for obtaining information through websites or social media platforms. Also, the increasing growth of English learning apps gives them more chances to learn English outside the classroom. Therefore, one can learn English independently, even without the help of a teacher or school, as long as he can access abundant English resources online. Most participants (81%) agreed that reading English via smartphone is meaningful and helpful to them.

B. Effort Expectancy

Effort expectancy primarily refers to the ease of use while reading via smartphone. Although it is hard to deny that annotating and concentrating are two big problems with smartphone-based reading, following the former research (Liu, 2005). However, most participants (81%) generally regarded smartphone-based reading as a more convenient way of reading English compared with its counterpart, printed reading, due to its quick and easy features in accessing and selecting reading material and, most importantly, the ease of consulting dictionaries for new words in EFL reading. It seems contradicted in this construct that participants felt both convenient and inconvenient about smartphone-based reading. Still, the statistical result (effort expectancy, *M=3.40*) also revealed that EFL learners were eager to use their phones as a reading tool for its convenience of language learning. It will become a desirable reading medium for EFL readers if fewer distractions come from the phone or less need for annotation from the reader.

C. Prevailing Feelings

In the construct of "prevailing feelings," how participants felt about smartphone-based reading was investigated through five question items. The overall results suggest that students neither preferred nor disliked reading English through the phone. However, in every single item, they were distinctively in favor of or disapproved of EFL mobile reading. It is significantly shown that they liked reading English on their smartphone. For example, they felt relaxed and interested in the multimedia features of mobile reading, but they felt impatient or tired at the same time. These findings indicated that it might be hard for students to concentrate on English reading material on the phone for a long time. The small-sized screen was likely to be the reason for their impatience. But the inserted pictures or videos in the hypertexts appealed more to EFL learners than the linear text format of paper-based reading. According to Omar & Bidin (2015), texts with multimedia elements could improve language learners' reading experience and enhance their language learning effect. Therefore, EFL instructors might consider the positive impacts of smartphone reading and adopt it in their teaching, thus promoting their students' English learning proficiency.

D. Social Influence

In this study, "social influence" mainly refers to EFL learners' beliefs in others' perceptions of smartphone-based reading. The questionnaire survey results showed that other people could strongly influence the participants. Whether they were people close to them or some significant social figures, their recommendations and mobile reading behaviour would primarily encourage participants to read through mobile phones. The strong beliefs of Chinese EFL learners in others regarding mobile reading suggested that language instructors may stimulate their students to read with smartphones by recommending online reading apps and materials or showing them how to exploit their mobile devices for English reading. This might encourage more English input with frequent access to a smartphone, the portable reading device, which could enhance students' language learning efficiency in the long run.

E. Habit

The "habit" domain is primarily associated with EFL learners' smartphone reading habits. The study's results suggested that participants had not yet been used to reading on a smartphone, although they often read English via their mobile phones in some slivers of time or when they were at rest. This might be because people often get distracted by instant messages while reading on the phone. Still, printed materials are likely easier for them to concentrate on and read for longer. In addition, the smartphone serves more as an entertaining device instead of a reading tool. Most importantly, EFL learners are not used to reading English frequently either for language learning or entertaining purposes, whichever reading medium they use. This seems acceptable in the EFL context, where most learners mainly take English as a subject rather than a language. However, mobile devices like smartphones could undoubtedly be a helpful tool for increasing English reading amounts and frequency because of their portable feature and easily accessible texts (news, stories, or academic articles) that are presented in English online.

F. Action Readiness

Even though participants have not had a habit of smartphone-based reading, they showed significantly positive beliefs about the future use of this mobile device. In this study, the respondents believed that they would continue using or plan to use smartphones to read English in the future, and surprisingly, they showed more willingness in mobile reading than paper-based reading. This might be due to their belief that mobile phones or online reading apps would be improved to meet mobile reading demands, such as annotating or highlighting, and to the prevailing trend of using the smartphone for English language learning. The results of this domain showed Chinese EFL learners' general positiveness in smartphone-based reading.

VI. Conclusion

The current study focuses on EFL learners' attitudes toward mobile reading. We designed a mobile reading attitude model to explore and present EFL learners' perceptions of the smartphone as a reading medium regarding its usefulness, ease of use, readers' feelings, habits, beliefs in its social influence, and future use. The results suggest that although Chinese EFL learners dislike the inconveniences of reading on a small-sized screen, they generally hold positive beliefs about smartphone-based reading. It is encouraging to know that they harbour expectations in smartphone-based reading and showed willingness for its future use. Reading on the phone is quite common in this digital information age, particularly among young adults, so college teachers can instruct their students to use their smartphones more effectively as English reading devices to improve their language learning efficiency.

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