Smartphone-mediated EFL Reading Tasks: A Study of Female Learners' Motivation and Behaviour in Three Saudi Arabian Classrooms

Abstract

Research shows that English as a Foreign Language (EFL) learners in Saudi Arabia typically report low levels of motivation due to the dominance of teacher-centred classrooms. Recent studies suggest that combining task-based language teaching (TBLT) with a mobile learning approach may develop student-centred learning environments that are more motivating. While a considerable amount of research in Saudi Arabia has been based on students' perceptions, few studies have been conducted in live classrooms. This study fills this gap by investigating the use of smartphone-mediated TBLT with 72 Saudi female learners in reading classrooms and by adopting a mixed methods design involving mobile-assisted language learning (MALL) tasks in which self-determination theory (SDT) was used to explore learner motivation. The participants involved three groups of EFL students at a Saudi university in which one group was taught using the traditional Presentation-Practise-Production (PPP) method, the second with a task-based approach, and the third using a set of mobile tasks that were designed for this study. Data were collected using pre-tests and post-tests, observations, questionnaires and focus groups. Results showed that the experimental group scored significantly higher in terms of achievement, attention, participation, and volunteering, while students in the mobile group also identified aspects of mobile tasks that contributed to their motivation and revealed positive attitudes towards the reading course.

Keywords: computer-assisted language learning, learner motivation, mobile-assisted language learning, reading, technology-mediated language learning

Introduction

It is still typical for English as a Foreign Language (EFL) classrooms in the Middle East to be characterised as teacher-centred (Alrabai, 2016), focused on in-class learning in which there are few opportunities for practising the language outside formal learning contexts. In Saudi Arabia, classes are not only characterised by teacher dominance, but also by a focus on content delivery (Al-Seghayer, 2014) in which teachers are burdened with the responsibility for delivering knowledge to often undermotivated learners. Examining research on the four skills

more closely in the Saudi context reveals that no studies on reading have explored how learner motivation and performance may be improved in this context.

In recent years the use of mobile-assisted language learning (MALL) and task-based language teaching (TBLT) approaches have emerged as potential solutions to low levels of engagement with reading in EFL classrooms. While a growing number of studies have investigated the use of mobile technologies (Li & Hegelheimer, 2013; Ushioda, 2013), the use of smartphones has been under-theorized in relation to reading skills and teachers still need to know more about the extent to which these devices may make a difference from a motivational point of view. Ushioda (2013) suggested that it is better if learners are given freedom in terms of the types of tasks they can use and how much they wish to engage with mobile technologies when learning a language. Given the continued relevance of Ushioda's comments to more recent MALL research in mostly western higher education contexts (Burston & Athanasiou, 2019), the originality of this experimental study derives a) from its comparison of three groups of female Saudi EFL learners involving the use of in-class structured TBLT-informed tasks and smartphones, and b) the use of Self-Determination Theory (SDT) to explore the motivation of the learners. The purpose of the study was also to examine the under-researched area of Saudi female students' motivation in reading classrooms by addressing the following two questions: How did the use of smartphone tasks affect students' perceived and actual achievement in reading? What are the effects of using smartphone tasks on students' motivational behaviour in reading classes?

Literature Review

Motivation and Self-Determination Theory

Learner motivation is a complex phenomenon consisting of components that make it challenging to conceptualise and measure. One important choice that L2 researchers face relates to the specific aspects of motivation they are attempting to capture (Dörnyei & Ushioda, 2013). Schunk, Pintrich and Meece (2008) discussed four indexes of motivation drawn from students' behaviour in order to address this challenge. The first involved the choice of task, as the type chosen by students was a good indicator of their motivation. Effort also provided strong evidence of motivation as when students invested more in a difficult task they tended to be highly motivated. Persistence in task engagement, tackling obstacles and achievement were other indices of higher motivation.

Developed by Deci and Ryan (1985, 1991, 2002), self-determination theory (SDT) is still considered one of the most influential approaches in motivational psychology and education.

In their computer-assisted language learning (CALL) study, Tran, Warschauer and Conley (2013) applied SDT to the use of mobile devices and students' intrinsic motivation, identifying how the portable features of handheld devices enabled them to discuss three key aspects of self-determination, namely, autonomy, competence, and relatedness. *Competence* was defined as the need to develop key skills to gain confidence (Ryan & Deci, 2002). *Autonomy* is an important factor in that students will feel intrinsically motivated and have a strong desire to face challenges if their teacher supports their need for greater independence (Deci et al., 1991). Tran et al. (2013) also state that because mobile phone applications are easy to use, learners become potentially more autonomous as they can decide when and how to interact with the device. *Relatedness* refers to how students who are intrinsically motivated develop a sense of belongingness that makes them feel respected by their teacher and student peers (Ryan & Deci, 2000). Early research suggested that the integration of the internet in mobile devices provided significant opportunities for social interactions and offered them a larger audience for collaboration (Warschauer, 1997), an argument that has been substantiated by more recent studies which indicate that writing for an audience, as in the case of blogging or fan fiction, can increase students' interest in L2 reading and writing (Sauro & Sundmark, 2019).

Technology-mediated TBLT

As learners have increasingly defined the effectiveness of EFL instruction in terms of pedagogical approaches that encourage communicative language use (Alzeebaree & Hasan, 2020), over the last decade there has been an increasing interest in the use of TBLT in the Middle East (Lenchuk & Ahmed, 2020). While definitions of tasks have multiplied, a task is typically identified as a meaning-based activity that aims to present learners with an opportunity to use the target language and solve a problem such as they would find in the real-world. Several misconceptions of TBLT persist, however, most notably the idea that it can engage learners with authentic tasks, be used with all four skills, or in different cultures such as the Middle East or Asia. Developing from research by Van den Branden (2006), Van den Branden, Verhelst and Van Gorp (2007) and González-Lloret and Ortega (2014), several studies have discussed the potential of digital technologies to overcome these obstacles to authenticity and help students to utilise digitally-mediated communication to aid collaborative problem-solving through the use of tasks and/or projects (Nanni & Pusey, 2020). Solares (2014) conducted a notable study in the field involving an EFL classroom with three groups in which the first group engaged in technology-mediated task-based instructional design, the second group underwent the same design but without the use of technology, and the third group used textbooks and did not

implement the task-based design or use technology. The results showed no difference in linguistic gains among the groups, but students in the first group reported developing new digital competencies, and both groups held positive perceptions towards task components and technology use.

A study by Sarhandi et al., (2017) involved Saudi undergraduate EFL learners using paper-based and smartphone-based tasks to identify differences in motivation and achievement. The participants were found to be highly motivated to engage in the mobile tasks and scored higher results in language tests compared to the control group. However, since both groups used the same tasks with a different delivery method, the researchers attributed the success of this method to the 'escape from routine' element.

The challenge facing researchers is how to integrate these two approaches effectively (González-Lloret & Ortega, 2014). Previous research suggests that technology can play a role in minimising students' fear of failure, raise their motivation to be meaningful and creative, and enable them to practise their language with other speakers worldwide. It is vital, then, to consider the use of technology to mediate tasks, not merely as a vehicle to deliver them. As such, the above review has clearly identified a gap in studies of Saudi learners that seek to combine TBLT with a mobile learning approach that is learner-centred.

Methodology

Participants

This experimental study used qualitative and quantitative data collection tools to capture university students' motivation in a Saudi EFL classroom over a period of six weeks and included a total of 20 hours of class reading time. The three classes were intact groups of female learners undertaking mandatory general English courses provided by an English Language Institute (ELI), and all the participants were aged between 18 and 19 (n = 72). The sample consisted of:

a PPP Group (24 students): the control group, which was taught using regular classroom strategies approved by ELI and the approved student textbook;

a TBLT Group (25 students): the first experimental group, which was taught using the task-based approach and the print version of the MTBLT group tasks;

a MTBLT Group (23 students): the second experimental group, which was taught using mobile-based tasks designed for this study.

Procedures

In line with SDT, reading materials were designed to provide a choice of tasks (autonomy), instant feedback (competence), and collaborative activities (relatedness). Socrative and Padlet mobile applications were used to carry out the tasks for the MTBLT group. The first app, Socrative Teacher, allowed teachers to design short quizzes through the use of pictures and videos (see Figure 1).

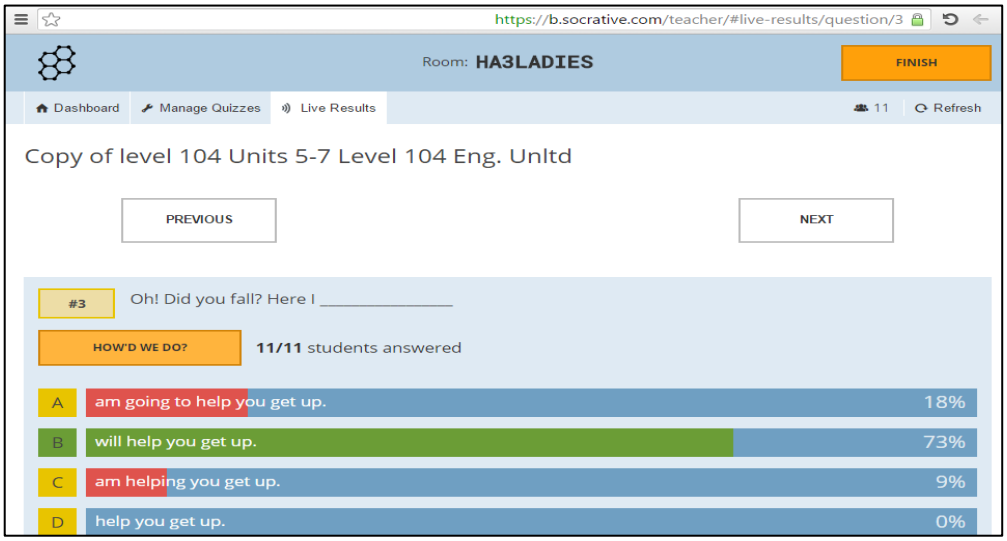

Figure 1: Screenshot of Socrative student app during the main task

Padlet was used to conduct the lesson's post-task due to its bulletin board functionality (e.g., it could easily display text, pictures and web links and was mainly used for collaborative work among students during this phase). After forming groups, students entered the Padlet board, read a story, added an appropriate ending, and then read and commented on the other groups' work (see Figure 2).

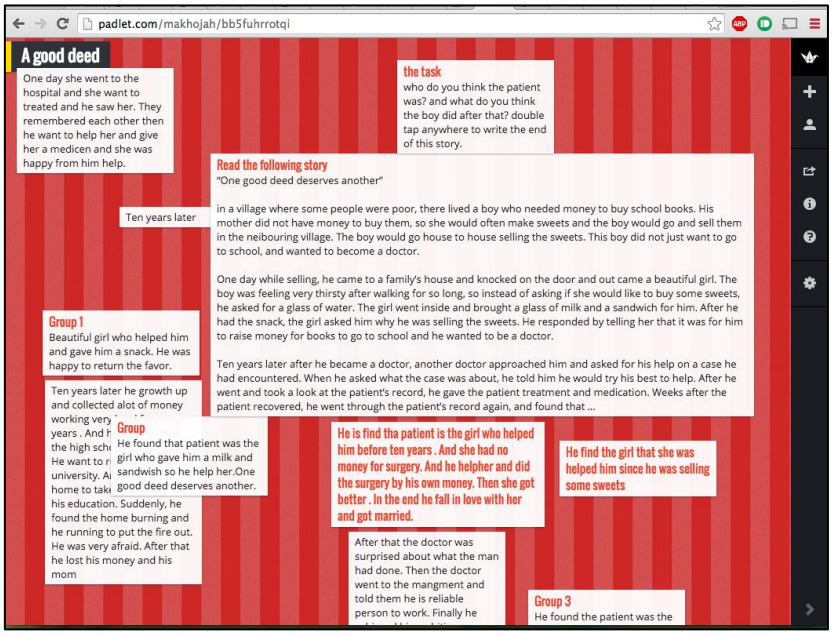

Figure 2: Screenshot from Padlet showing a reading activity to write an ending to a story

The PPP group was taught using the class textbook, *English Unlimited*, without the researchers' interference. The MTBLT group engaged in a pre-task to introduce new vocabulary and a main task with one of the reading passages from the textbook and questions on the Socrative app. Finally, students completed a post-task, using either a second reading passage for which they wrote an appropriate ending on the Padlet app or an online scavenger hunt for which they scanned selected websites to answer questions on Socrative. The TBLT group used a printed version of the MTBLT group's tasks where applicable. The mobile tasks provided students with feedback and collaborative work and sought to engage them through the race mode.

Data Collection

The mixed methods approach used a pre/post-test, a questionnaire, classroom observation and focus groups, and four main aspects of students' motivation were measured. The first involved their language progress from the pre-test to the post-test (Dörnyei & Ushioda, 2013). The other three included motivational behaviour observed during classroom tasks according to Guilloteaux and Dörnyei's (2008), criteria: levels of attention, participation, and volunteering.

A five-point Likert scale questionnaire used some modified items from Guilloteaux and Dörnyei (2008) to evaluate students' perceptions of their overall motivation, current teaching method, and mobile tasks and collected quantitative data about the number of students who paid attention in class, participated in tasks, and volunteered to answer the teacher. The focus groups aimed to gather further insights into the current teaching method and mobile tasks. The

Socrative app was used to create comprehension questions for students, while the Padlet app was used to allow students to write a conclusion for a story and share it with the class.

Following the completion of a pre-test, sent as a Google form through a link in WhatsApp Messenger, students were observed as they engaged in reading activities for three hours a week. Observations were recorded on an observation sheet relating to how the students completed the targeted tasks. Each classroom was observed for two consecutive hours and one hour on another day each week. After seven weeks, a post-test was conducted during the revision week before the final examinations. On the final day of the module, thirteen volunteers participated in focus groups: five participants from the PPP group, four from the TBLT group, and four from the MTBLT group.

Data Analysis

This research followed Creswell and Clark's (2011) convergent parallel design of mixed methods as summarised in Table 1.

Table 1

An overview of data collection

Research question	**Data source**	**Method of analysis**
(RQ1): How did the use of smartphone tasks affect students' perceived and **actual achievement?**	Pre-test Post-test Focus groups Questionnaire	Descriptive statistics Kruskall-Wallis test Thematic coding derived from students' comments Thematic analysis
(RQ2): What are the effects of using smartphone tasks on students' motivational **behaviour in reading class?**	Observation Questionnaire Focus groups	Mixed ANOVA with LSD multiple comparison Chi-square test Thematic analysis

Several statistical procedures were employed to analyse the quantitative data:

1- Descriptive statistics: used mean and standard deviation to determine students' motivation and their experience of using task-based mobile learning.
2- Simple and multiple regression analysis: determined how the variables were used to predict students' motivation and attitudes towards task-based language learning.
3- T-tests, including paired sample t-tests and correlation and multivariate correlation analysis, within and between analysis of variances (ANOVA): analysed pre-tests and post-tests among the three groups of learners.
4- Correlation and cross-tabulation (Pearson Correlation Coefficient): explored the relationships between the variables used in this study.

5- Non-parametric Chi Square: compared the motivational behaviour among the groups.

The qualitative data (focus groups) followed thematic analysis after rigorous transcribing and translation of the content.

Findings

How did the use of smartphone tasks affect students' perceived and actual achievement in reading?

Pre- and post-tests were conducted to determine if there was an improvement in students' academic achievement with respect to reading and one item from the questionnaire asked students to predict the results of their final examinations for all groups. Mixed ANOVA variance was used to determine if any significant difference existed in achievement between the three groups. Table 2 shows the means and standard deviation of the three groups in the pre- and post-test and Mixed ANOVA results.

Table 2

Statistics and Mixed ANOVA for pre- and post-test of all groups

Test	PPP Group N= 24	TBLT Group N= 25	MTBLT Group N= 23	p-value (repeated measures)	p-value (interaction groups*tests)	P-value (ANOVA)
Pre-test	*M* = 10.71 *SD* = 2.99	*M* = 11.68 *SD* = 3.17	*M* = 11.87 *SD* = 2.40			*P* = .334
				.003	*.261*	
Post-test	*M* = 10.96 *SD* = 2.48	*M* = 12.60 *SD* = 3.08	*M* = 13.22 *SD* = 2.32			*P* = .014

Table 2 shows a highly significant difference between pre- and post-test (p-value = .003) and effect size = .112, indicating that an 11.2% variation change in scores was due to the post-tests. There was significant interaction between time (pre- and post-test) and the control group, task-based groups, and the mobile group (p-value = .261), effect size = .038. However, the mobile group showed a slight increase in achievement, and the TBLT started higher than PPP, lower than MTBLT, but then increased in the post-test. In the pre-test the three groups had the same mean score (p = .334). In contrast, students' post-test performance was statistically different between the three groups (p-value = .028), with an effect size = .12.

For the pre-tests, the data identified no significant difference between the PPP and the TBLT groups (p-value = .32), PPP vs. MTBLT (p-value = .172), and MTBLT vs. TBLT (p-

value = .821). For the post-test, there was a significant difference between the PPP and the MTBLT groups: for the PPP group pre-test (p-value = .034) and effect size (=.59), while for the MTBLT group (p-value = .005) and effect size (=.91). There was no significant difference between the TBLT and the MTBLT groups for the pre-test (p = .424) and effect size = .22, which was low (see Table 3).

Table 3

LSD comparison tests between the three groups

Groups	Pre-test		Post-test	
	p-value	Effect size	p-value	Effect size
PPP vs. TBLT	*p*=.242	*.31*	*p*=.034	*.59*
PPP vs. MTBLT	*p*=.172	*.28*	*p*=.005	*.94*
MTBLT vs. TBLT	*p*=.821	*.51*	*p*=.424	*.22*

Figure 3 shows improvement in the mobile group's achievement, but also how each group had different average levels.

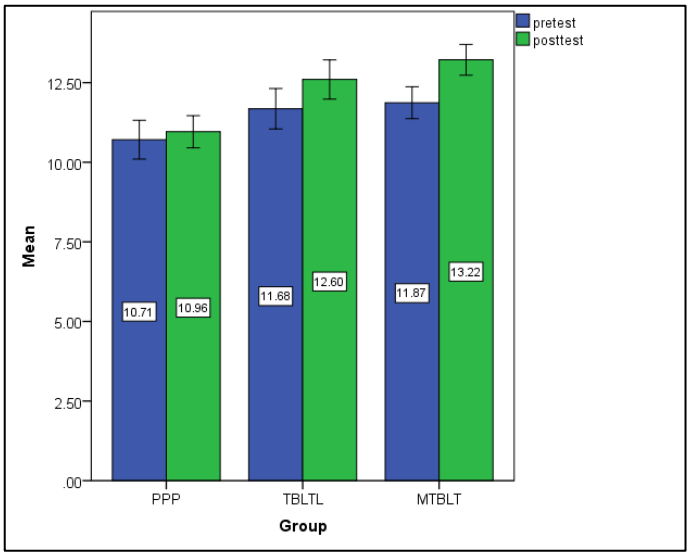

Figure 3: Means bar chart of the three groups in the pre-test and post-test

In order to investigate this further, a paired samples t-test was computed for each group to measure the difference in each pre- and post-test performance (see Table 4).

Table 4

Paired-test between the three groups

Test	PPP	TBLT	MTBLT
pre vs. post	*p-value*=.65	*p-value*=.02	*p-value*=.009

The results for the PPP group were not significant (p-value = .65) for the pre-test (*M* = 10.7, *SD* = 2.9) and the post-test (*M* = 10.9, *SD* = 2.4) conditions. In contrast, the results for the TBLT group showed significance (p-value = .02) and post-test achievements (*M* = 12.6, *SD* = 3.08) compared to the pre-test (*M* = 11.68, *SD* = 3.17) conditions. Also, MTBLT group results revealed a significant difference (p-value = .009) in achievement for the post-test (*M* = 13.21, *SD* = 2.35) compared to pre-test conditions (*M* = 11.86 *SD* = 2.39). Generally, although both TBLT and MTBLT showed significant post-test achievement, the MTBLT resulted in more significant achievement.

Perceived achievement

Item 18 in the questionnaire asked students to rate the following statement: "I think I will get better grades this semester". Student responses followed the five-point Likert Scale (strongly agree, agree, disagree, strongly disagree, I do not know).

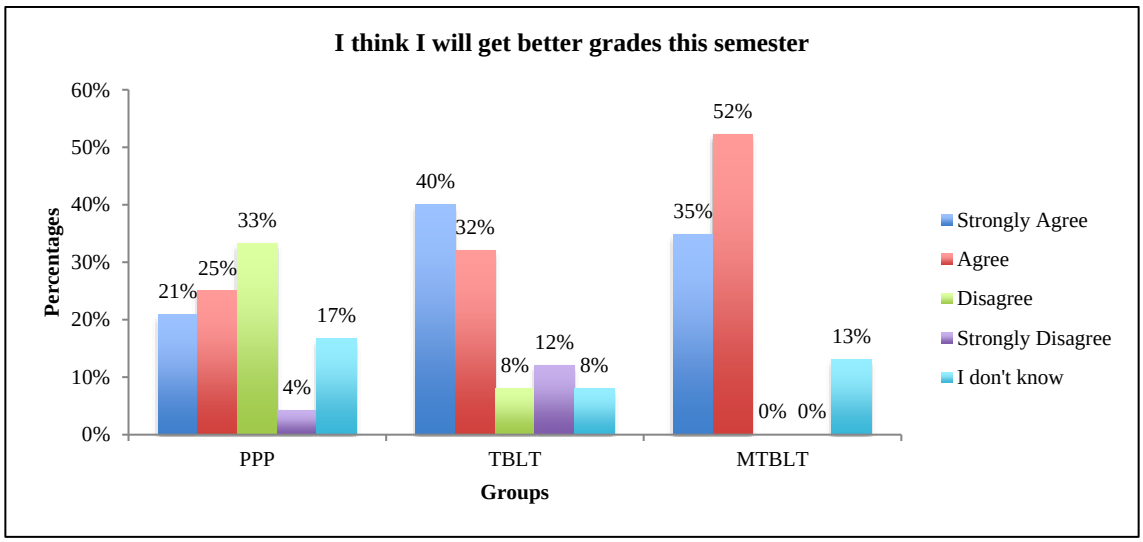

Figure 4: Percentages of students' responses to questionnaire item (18) on perceived achievement

Figure 4 shows that the MTBLT group was the most confident in their reading examination improvement, with 52% agreeing and 35% strongly agreeing with the statement. There was no disagreement in the MTBLT group. The TBLT group was second in confidence, with 40%

agreeing and 32% strongly agreeing. The least confident was the PPP group, with 33% disagreeing that they would achieve better grades, and 17% who did not know.

To investigate the relationship between students' perceived and actual achievement, the study compared students' actual achievement (pre-test and post-test) and the questionnaire item taken at the end of the study ("I think I will get better grades this semester"). Based on the data there was a small, but not significant, correlation between the perceived and actual achievement for the PPP group, with r = .271 and p-value = .200. It also showed no relationship for the MTBLT group, with r = .169 and p-value = .440. However, there was a negative relationship between the TBLT group's perceived and actual achievement (r = .094), but it was not significant (p-value = .665). Table 5 shows the means and standard deviation of all the groups' perceived and actual achievements.

Table 5

Descriptive statistics of the three groups' perceived and actual achievement

Group		Mean	SD	Correlation (p-value)
Control	Perceived	2.70	1.30	.271 (.200)
	Actual	.25	2.70	
Task-based	Perceived	2.28	1.33	.038 (.857)
	Actual	.92	1.84	
Mobile	Perceived	1.61	.723	.169 (.440)
	Actual	.833	2.30	

It is important to explain why students in the MTBLT group progressed significantly in reading by drawing evidence from the students themselves. Students from the MTBLT focus group thought that mobile tasks helped them remember vocabulary better than the textbook. One student said, "I really benefited from mobile tasks. I remember grammar and vocabulary better" (MTBLT-3), to which another student replied, "I agree. I remember things more when using my phone" (MTBLT-4). A third student was asked how she believed mobile tasks affected her: "It matters. The information lingers in our minds when we use phones, I think" (MTBLT-2).

The next section turns to findings pertinent to the second research question before analysing them in more detail in the discussion section which concludes the paper.

What are the effects of using smartphone tasks on students' motivational behaviour in reading classes?

To determine the impact of using different teaching methods on students' behaviour, data were collected during classroom observations and questionnaires for each group. The overall motivational aspects (e.g., attention, participation, volunteering) of every hour of teaching were

measured by summarising three tasks for each motivational aspect for each hour, divided by the number of tasks (3) (Guilloteaux & Dörnyei, 2008). Table 6 shows the overall mean and median for each group, which gives a basic understanding of the differences in motivational behaviour related to different approaches of language teaching.

The results showed that the students in MTBLT and TBLT groups paid more attention (mean = 2.63, 2.90, median = 3, 3) compared to the PPP group (mean = 1.97, median = 2), as shown in Table 6 and Figure 3. There was a highly significant difference (p-value<.001) in attention. Using pairwise comparisons, the significant difference was detected between PPP-TBLT (p-value <.001) and PPP-MTBLT (p-value <.001), while there was no significant difference between TBLT-MTBLT (p-value=.357).

Table 6

Overall attention, participation, and volunteering for the three groups over 20 hours

		Group			Kruskall Wallis (p-value)	Pairwise comparisons (p-value)
		PPP	TBLT	MTBLT		
Attention	Mean	1.97	2.63	2.90	<.001	PPP-TBLT (<.001) PPP-MTBLT (<.001) TBLT-MTBLT (.357)
	Median	2.00	3.00	3.00		
Participation	Mean	1.50	2.35	2.92	<.001	PPP-TBLT (<.001) PPP-MTBLT (<.001) TBLT-MTBLT (.025)
	Median	1.50	2.00	3.00		
Volunteering	Mean	1.37	2.47	2.77	<.001	PPP-TBLT (<.001) PPP-MTBLT (<.001) TBLT-MTBLT (.446)
	Median	1.33	2.33	2.67		

In terms of participation, the data show that the MTBLT groups scored higher (mean = 2.92, median = 3) compared to TBLT (mean = 2.35, median = 2) and PPP (mean = 1.50, median = 1.5) groups, as seen in Table 5 and Figure 5. There was a significant difference (p-value<.001) in participation. Using pairwise comparisons, the significant difference was between PPP-TBLT (p-value <.001), PPP-MTBLT (p-value <.001), and TBLT-MTBLT (p-value = .025). Therefore, MTBLT had the highest rate of attention, followed by TBLT and PPP groups, respectively.

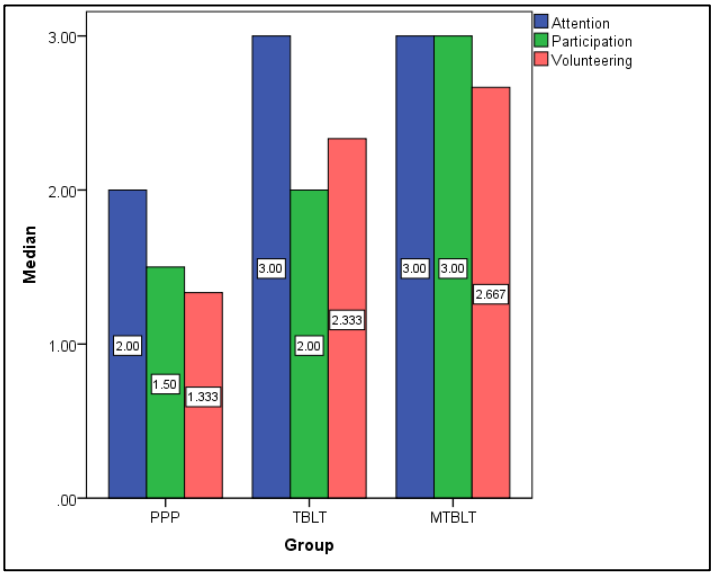

Figure 5: Median scores for the three motivational aspects between the three groups

Regarding the rates of volunteering, there was not much difference between MTBLT (mean = 2.77, median = 2.67) and TBLT (mean = 2.47, median = 2.33) groups, although the PPP group had a low volunteering score (mean = 1.37, median = 1.33), as seen in Table 6 and Figure 5. There was a highly significant difference (p-value<.001) in volunteering. Using pairwise comparisons, the significant difference was between PPP-TBLT (p-value <.001) and PPP-MTBLT (p-value <.001), although there was no difference between TBLT-MTBLT (p-value = .446). Therefore, MTBLT and TBLT groups showed a greater volunteering attitude than did the PPP groups.

Effects on students' attention

Variable attention is defined in this study as students watching and following the teacher's movement, making physical responses to the teacher or other students, and watching what is being said and done in the class. On the observation sheet, low attention levels scored one when the teacher called on students for not following her. Medium attention levels were assigned to the task when one-third or half of the students seemed to be paying attention, and high attention levels were scored three if more than half the students appeared attentive.

The results of attention levels for task 1 show that the medium attention was the highest in the PPP group (60%), while high attention was highest in the MTBLT group (85%), followed by the TBLT group (55%), as shown in Figure 6 and Table 7. As a result, the relationship between task 1 and learning groups was significant (Fisher's exact was χ^2 (4) =21.33, *p-value*<.001).

Table 7

Crosstabulation statistics of attention levels for the tasks between groups

Attention			Group			χ^2 p-value
			PPP	TBLT	MTBLT	
Task 1	low	Count	5	1	0	χ^2 (4) =21.33, p-value<.001
		% within Group	25.0%	5.0%	0.0%	
	medium	Count	12	8	3	
		% within Group	60.0%	40.0%	15.0%	
	high	Count	3	11	17	
		% within Group	15.0%	55.0%	85.0%	
Task 2	low	Count	3	0	0	χ^2 (4)=28.76, p-value<.001
		% within Group	15.0%	0.0%	0.0%	
	medium	Count	14	7	1	
		% within Group	70.0%	35.0%	5.0%	
	high	Count	3	13	19	
		% within Group	15.0%	65.0%	95.0%	
Task 3	low	Count	3	0	0	χ^2 (4)=26.53, p-value<.001
		% within Group	15.0%	0.0%	0.0%	
	medium	Count	14	5	2	
		% within Group	70.0%	25.0%	10.0%	
	high	Count	3	15	18	
		% within Group	15.0%	75.0%	90.0%	
Overall attention	low	Count	3	0	0	χ^2 (4)=32.79, p-value<.001
		% within Group	15.0%	0.0%	0.0%	
	medium	Count	15	7	1	
		% within Group	75.0%	35.0%	5.0%	
	high	Count	2	13	19	
		% within Group	10.0%	65.0%	95.0%	

The same test was applied for the main task, task 2, to rate attention for all groups during the 20 hours of teaching. Similar to task 1, the medium attention was highest for the PPP group (70%), while high attention was highest for the MTBLT group (95%), followed by the TBLT group (65%), as seen in Figure 6 and Table 7. The results were also significant using Fisher's exact χ^2 (4) = 28.76, p-value<.001. Also, the test for the post-task's (task 3) attention level across time between the PPP, TBLT and MTBLT groups also showed that the medium attention was highest for the PPP group (70%) and high attention was highest for the MTBLT group (90%), followed by the TBLT group (75%), as seen in Figure 6 and Table 7. The result of the relationship using Fisher's exact χ^2 (4) = 26.53, p<.001 was highly significant and similar to the main task's attention levels in the previous results.

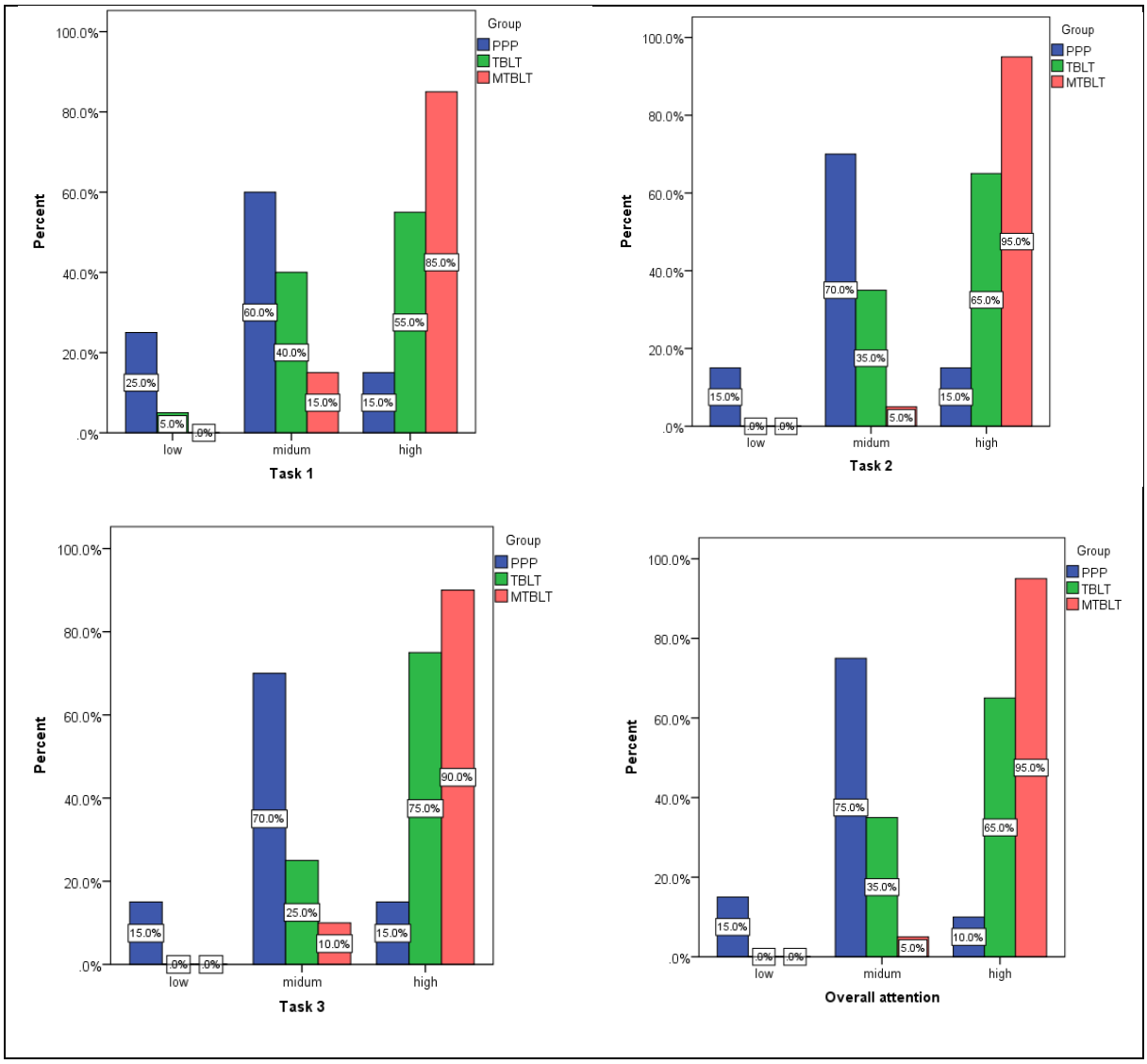

Figure 6: Distribution of students' observed attention for all groups

For overall attention, the highest percentage of medium attention (75%) was seen for the PPP group, while the high attention was very high in the MTBLT group (95%), as shown in Figure 6 and Table 7. The majority of the TBLT group (65%) showed high attention. Since Fisher's exact χ^2 (4) = 26.53, p<.001, there was a very highly significant relationship between the attention levels and learning groups. Generally, for all three tasks, the low and medium percentage of the PPP group was higher than the other groups. In contrast, for high attention, the MTBLT group was higher than the TBLT group and much higher than the PPP group.

As for students' perceived attention, one item in the questionnaire (item 16) asked if students agreed with the following statement: "I usually pay attention to what the teacher is saying in the reading classroom". Figure 7 compares the responses of all groups.

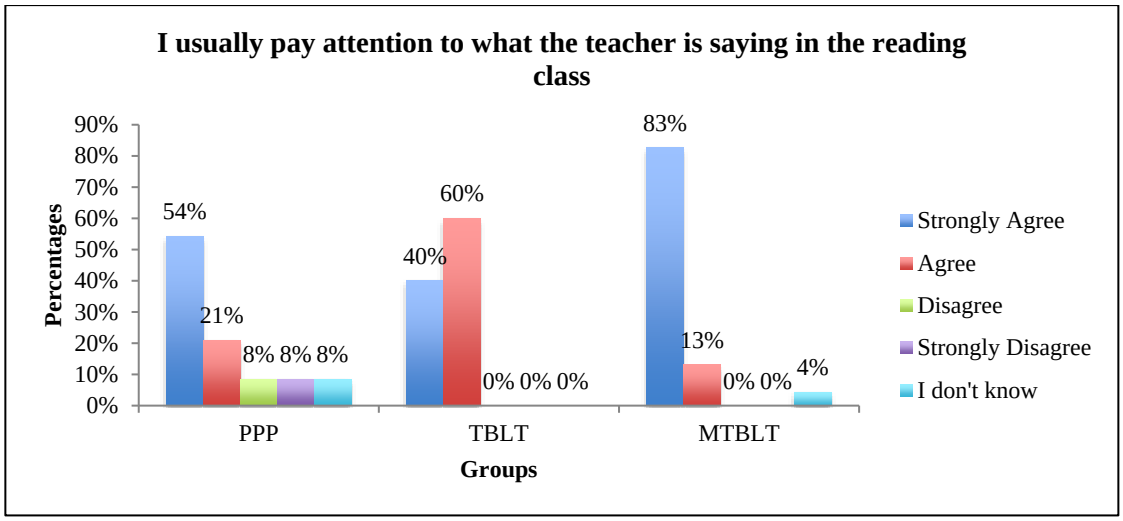

Figure 7: Percentages of all groups' responses to questionnaire item 16 on perceived attention

Figure 7 shows that the majority of students in the PPP group (54%) strongly agreed that they pay attention to the reading class. The TBLT students also agreed with that statement, with 60% agreeing and 40% strongly agreeing. Notably, the MTBLT group strongly agreed the most (83%) and the TBLT group all either agreed or strongly agreed, but the PPP group disagreed (8%) and strongly disagreed (8%), with 8% who did not know.

Effects on students' participation

The variable of participation measured how students interacted with the tasks and actively worked on assignments. Low levels of participation were scored with one on the observation sheet, meaning that few students were participating. Medium levels were assigned a two on the observation sheet, meaning that one-third or half the students were engaging in the task. High levels achieving a score of three meant that more than half the students participated in the activity.

For the results of participation levels for task 1, medium participation was highest for the TBLT group (70%) followed by the PPP group (65%), as seen in Table 8 and Figure 8. In contrast, high participation was highest for the MTBLT group (90%). As a result, the relationship between participation level (task 1) and learning groups was significant, as the Fisher's exact χ^2 (4) = 44.24, p-value<.001.

Table 8
Crosstabulation statistics of participation levels for the tasks between groups

	Participation		Group			$\chi 2$
			PPP	TBLT	MTBLT	p-value
Task 1	low	Count	7	0	0	44.24

		% within Group	35.0%	0.0%	0.0%	<.001
	medium	Count	13	14	2	
		% within Group	65.0%	70.0%	10.0%	
	high	Count	0	6	18	
		% within Group	0.0%	30.0%	90.0%	
	low	Count	9	1	0	46.16
		% within Group	45.0%	5.0%	0.0%	<.001
Task 2	medium	Count	11	11	1	
		% within Group	55.0%	55.0%	5.0%	
	high	Count	0	8	19	
		% within Group	0.0%	40.0%	95.0%	
	Low	Count	15	1	0	46.56
		% within Group	75.0%	5.0%	0.0%	<.001
Task 3	medium	Count	4	10	2	
		% within Group	20.0%	50.0%	10.0%	
	high	Count	1	9	18	
		% within Group	5.0%	45.0%	90.0%	
	low	Count	10	1	0	47.35
		% within Group	50.0%	5.0%	0.0%	<.001
Overall	medium	Count	10	11	1	
		% within Group	50.0%	55.0%	5.0%	
	high	Count	0	8	19	
		% within Group	0.0%	40.0%	95.0%	

Similar to task 1, task 2 (medium participation) was the highest for PPP (55%) and MTBLT (55%) groups compared to the TBLT group (10%), as seen in Figure 8 and Table 8. High participation was the greatest for the MTBLT group (90%), followed by the TBLT group (65%). Low participation was much higher for the PPP group (45%) compared to the MTBLT (5%) and TBLT (0%) groups. The relationship between the groups and the medium participation (task 2) level using Fisher's exact χ^2 (4) = 46.16, p-value<.001 was very highly significant. Also, the test for the post-task (task 3) participation level across time between the PPP, TBLT, and MTBLT groups showed that low participation was the highest for the PPP group (75%), while high attention was the highest for the MTBLT group (90%), followed by the TBLT group (40%), as seen in Figure 8 and Table 8. The relationship between the groups and the post-task (task 3) participation level using Fisher's exact χ^2 (4) =46.56, p<.001 was very highly significant.

The highest percentage of overall medium participation (55%) was in the TBLT group, while high participation was very high in the MTBLT group (95%), as seen in Figure 8 and Table 8. Half of the TBLT group showed low participation (50%) and the other half showed (50%) medium participation. Since Fisher's exact χ^2 (4) = 4.35, p<.001, there was a very highly significant relationship between participation levels and the three learning groups.

Generally, with respect to low and medium participation among the three tasks, the PPP group's percentage was higher than the other groups. In contrast, the MTBLT group was much higher than the TBLT and PPP group.

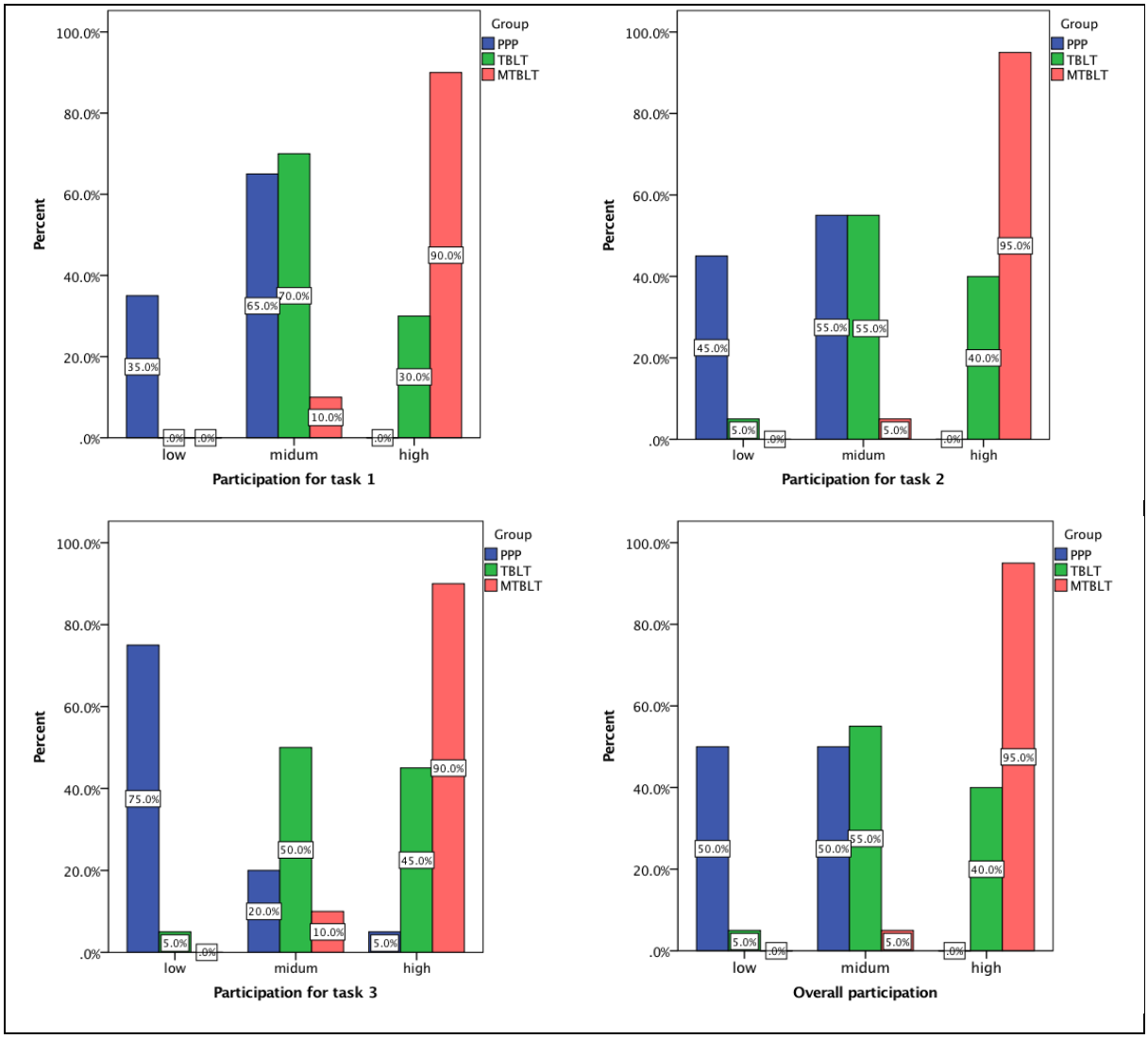

Figure 8: Distribution of students' observed participation for all groups

For students' perceived participation, item 13 in the questionnaire asked if students agreed with the following statement: "I usually participate in reading activities". Students' responses in all three groups are shown in Figure 9.

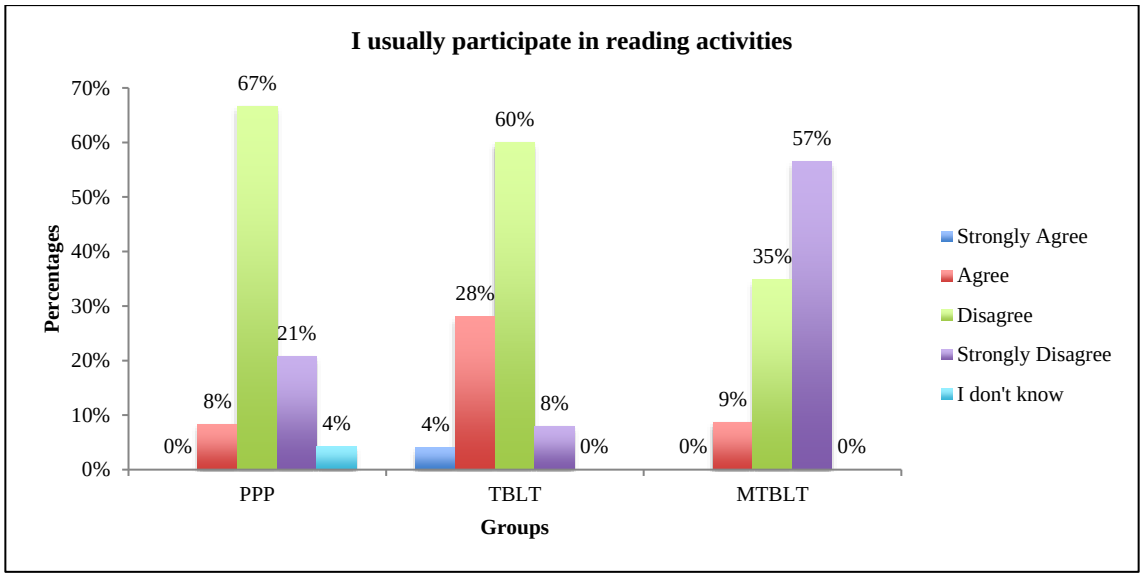

Figure 9: Percentages of all groups' responses to questionnaire item (13) on perceived participation

Figure 9 shows that the MTBLT group had strong opinions about classroom participation, with 57% of students not usually taking part in classroom activities. Sixty-seven per cent of the PPP group and 60% of the MTBLT group also disagreed with the statement, but their attitude was not as confident as that of the MTBLT students.

Another questionnaire item (12) asked students if they agreed with the following statement: "I do not like to participate because I am afraid that I will look stupid if I answer incorrectly". Figure 10 gives insight into one possible cause of poor participation among the three groups.

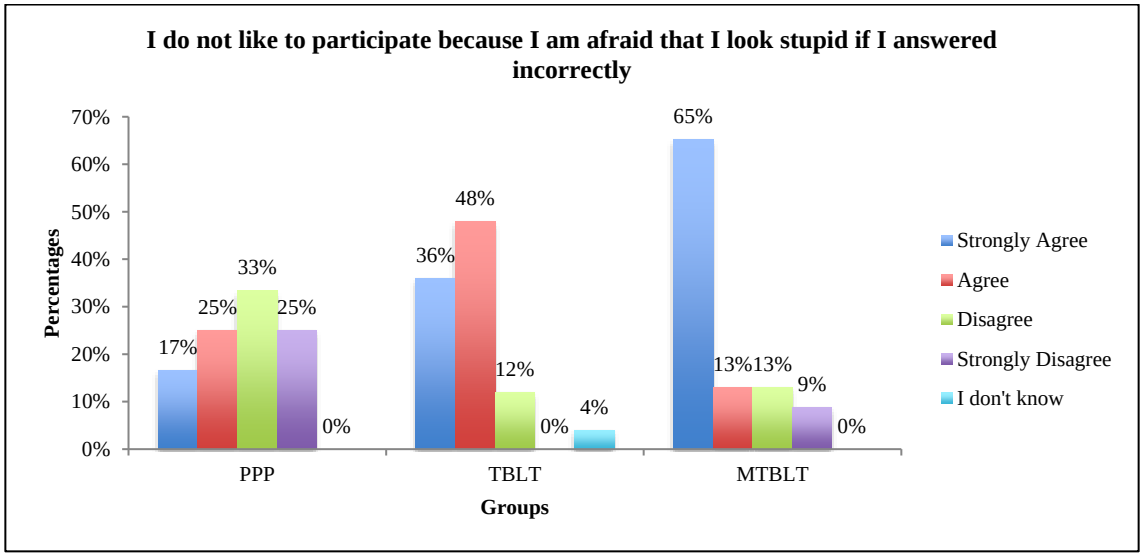

Figure 10: All groups' responses to questionnaire item (12) on perceived participation

According to Figure 10, 65% of the MTBLT group strongly agreed that they did not like participating in reading tasks because they were afraid of embarrassment, with only 13% disagreeing with the statement. The TBLT group strongly agreed, but only 36% and the majority (48%) agreed. The majority of the PPP group, however, disagreed (33%) and strongly disagreed (25%). The PPP group had equal and opposite responses to this statement, with 25% agreeing and 25% disagreeing.

The questionnaire items asked the students about their 'usual' behaviour in the classroom, meaning that this kind of behaviour might not be the case for every task. When students experience different or "unusual" styles of teaching, they might produce different responses. The MTBLT students strongly agreed that they did not participate in the classroom (57%), but provided different results in response to the use of mobile tasks, as shown in Figure 11.

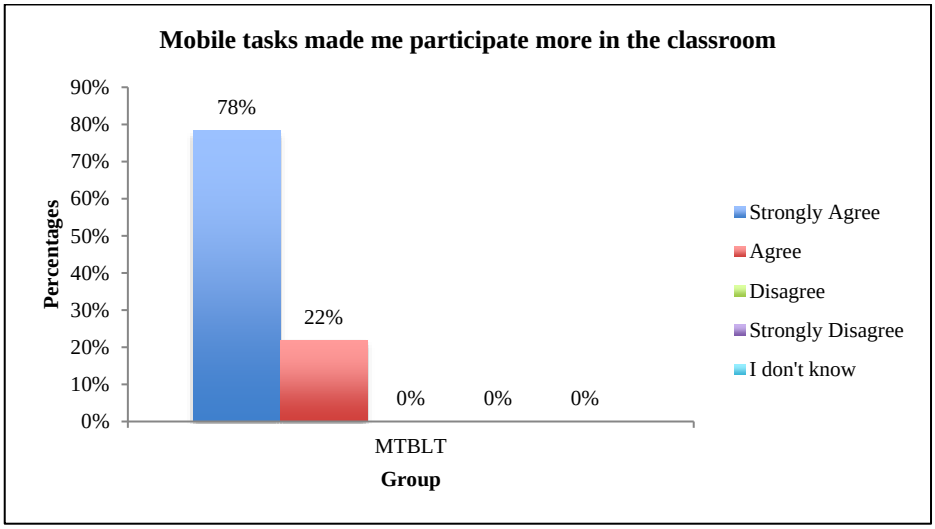

Figure 11: Percentages of MTBLT group responses to questionnaire item (19) on perceived participation

According to Figure 11, 78% of the MTBLT group strongly agreed that mobile tasks positively affected classroom participation, and the other 22% only agreed with the statement.

Effects on students' volunteering

Volunteering related to the extent to which students willingly answered questions or joined in a task without being coerced by the teacher. Low volunteering levels for task 1 were highest for the PPP group (75%), with 0% for the MTBLT and TBLT groups, as shown in Table 9 and Figure 12. In contrast, medium (65%) and high (80%) volunteering was highest in the MTBLT group. As a result, the relationship between volunteering levels in task 1 and learning groups was significant as the Fisher's exact χ^2 (4) =52.07, p-value<.001.

Similar to task 1, task 2 (low and medium volunteering 2) levels were higher for PPP (50%) and TBLT (55%) groups compared to the MTBLT group (30%), as seen in Figure 12 and Table 9. High volunteering was the highest for the MTBLT group (70%), followed by TBLT group (65%). Low volunteering was much higher for the PPP group (50%), with 0% for the MTBLT and TBLT groups. The relationship between the groups and the medium volunteering (task 2) level using Fisher's exact χ^2 (4) = 35.23, p-value<.001 was highly significant.

Table 9

Crosstabulation statistics of volunteering levels for the tasks between groups

	Volunteering		Group			$\chi 2$
			PPP	TBLT	MTBLT	p-value
	.1.1 Low	Count	15	0	0	52.07
		% within Group	75.0%	0.0%	0.0%	<.001
	.1.2 medium	Count	5	13	4	
Task 1		% within Group	25.0%	65.0%	20.0%	
	high	Count	0	7	16	
		% within Group	0.0%	35.0%	80.0%	
	low	Count	20	0	0	35.23
		% within Group	50.0%	0.0%	0.0%	<.001
	medium	Count	10	11	6	
Task 2		% within Group	50.0%	55.0%	30.0%	
	high	Count	0	9	14	
		% within Group	0.0%	45.0%	70.0%	
	low	Count	20	20	20	41.20
		% within Group	65.0%	5.0%	0.0%	<.001
	medium	Count	7	6	4	
Task 3		% within Group	35.0%	30.0%	20.0%	
	high	Count	0	13	16	
		% within Group	0.0%	65.0%	80.0%	
	low	Count	13	0	0	47.90
		% within Group	65.0%	0.0%	0.0%	<.001
	medium	Count	7	11	3	
Overall		% within Group	35.0%	55.0%	15.0%	
	high	Count	0	9	17	
		% within Group	0.0%	45.0%	85.0%	

The post-task's (Task 3) volunteering level across time among the PPP, TBLT and MTBLT groups showed that low volunteering was highest for the PPP group (65%), while high attention was the highest for the MTBLT group (80%), followed by the TBLT group (65%), as seen in Figure 12 and Table 9. The relationship between the groups and the post-task (Task 3) volunteering levels using Fisher's exact χ^2 (4) = 41.20, p<.001 was highly significant.

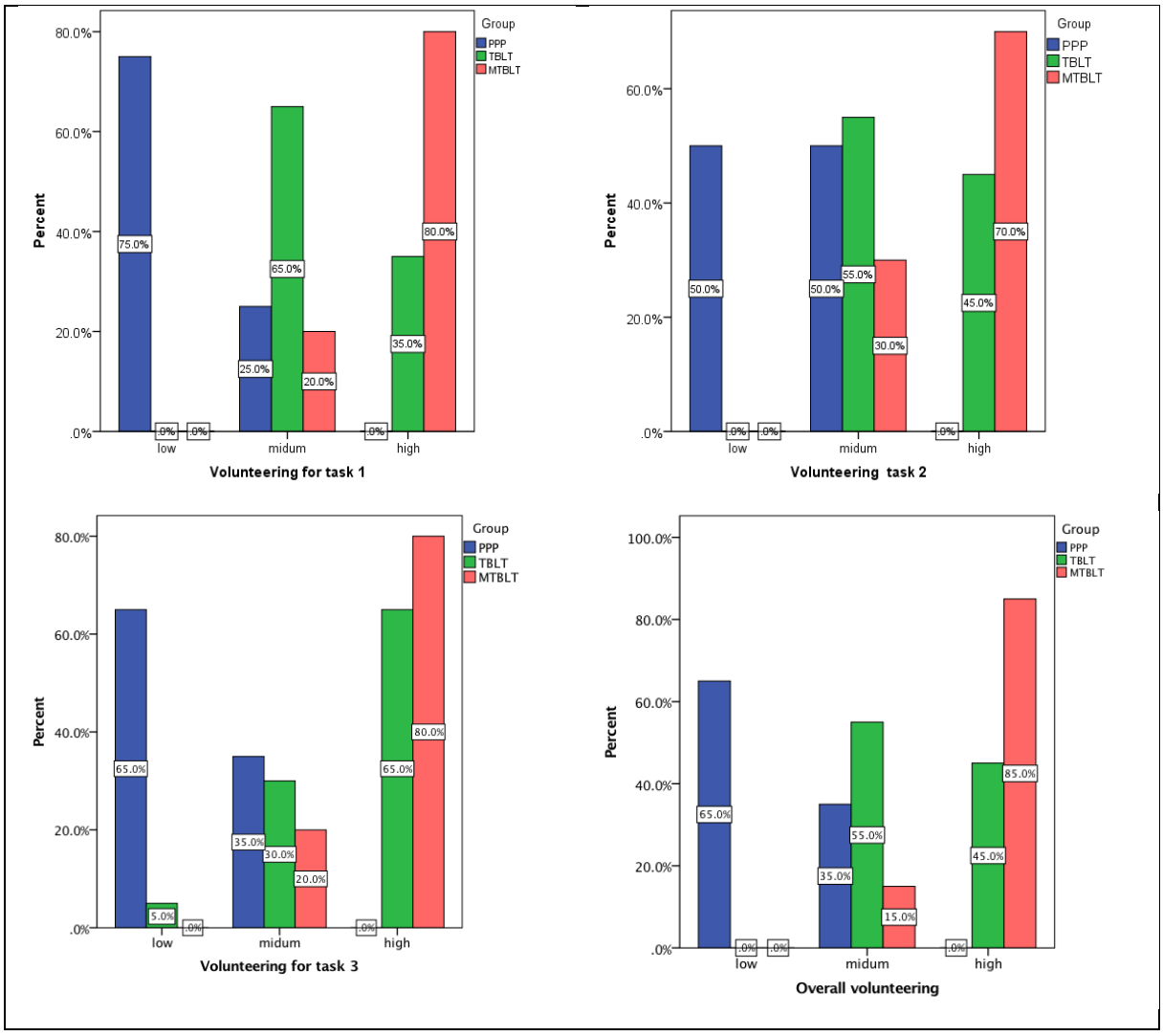

Figure 12: Distribution of volunteering levels for the three groups

For overall volunteering, the highest percentage of low volunteering (65%) was seen for the PPP group, while high volunteering was very high in the MTBLT group (85%), as shown in Figure 12 and Table 9. About a half of the TBLT group showed medium volunteering (55%), and the other half showed (45%) low volunteering. Since Fisher's exact χ^2(4) =47.90, p<.001, there was a very highly significant relationship between the volunteering levels and the three learning groups.

It was noted for the three tasks that the PPP group percentage was higher than the other groups' in low volunteering. In contrast, for high volunteering, the MBLT group percentage was higher than the TBLT group and much higher than the PPP group.

This study rated perceived volunteering by asking the students if they agreed with the following questionnaire item (10): "I often volunteer to answer in reading activities". Students' responses are shown in Figure 13.

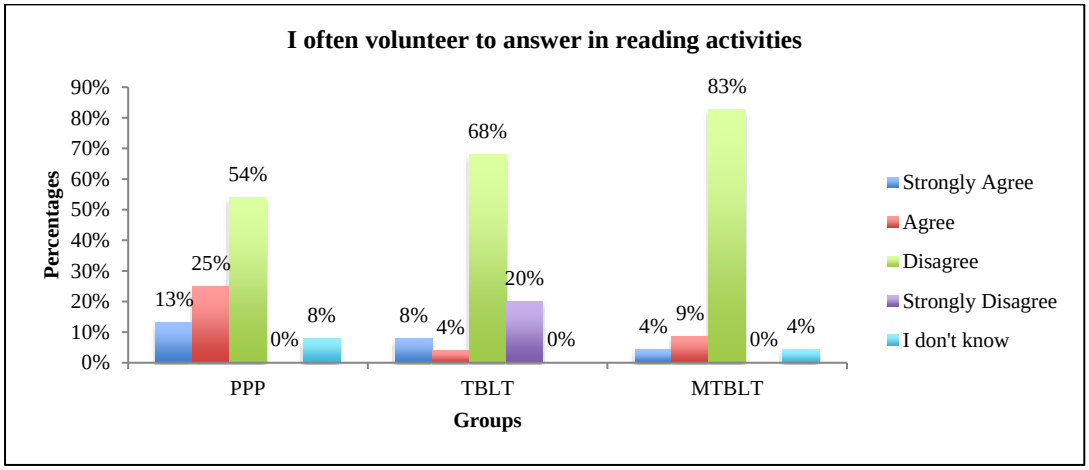

Figure 13: Percentages of all groups' responses to questionnaire item (10) on perceived volunteering

As seen in Figure 13, the majority of students in all groups reported that they did not often volunteer in reading activities. The MTBLT group reported the highest disagreement (83%), the TBLT was second (68%), and the PPP was the lowest (54%). However, 25% of the PPP group participants volunteered in the classroom, and only 9% of the MTBLT group participants thought the same. As with perceived participation from the previous subsection, perceived volunteering was measured using "often" to indicate frequency in all previous reading classes. Since every group was taught differently, the MTBLT group participants were asked to respond to the following statement: "I think I volunteer more when we are using mobile tasks". Figure 14 shows their responses to item 27 in percentages.

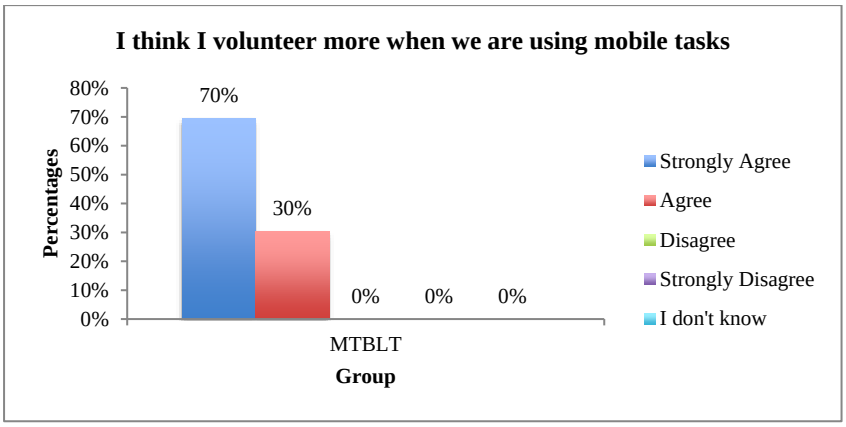

Figure 14: MTBLT group's perceived volunteering questionnaire item (27) responses (%)

Figure 13 shows that all students (70% strongly agree, 30% agree) in the MTBLT group reported that mobile tasks encouraged them to volunteer for reading activities. In conclusion, the data on observed volunteering show that the MTBLT group had significantly higher levels of volunteering ($p<.001$) and the PPP group had low levels, with medium levels in the main task. Perceived volunteering results showed that no groups reported volunteering often in the classroom, but the MTBLT group agreed that mobile tasks positively impacted their willingness to volunteer.

Discussion

In this study three groups with different teaching methods undertook the same reading tests before and after the English course, which lasted for seven weeks in total. The data show that the three groups' results were not significant in the pre-test. However, in the post-test, the TBLT and MTBLT groups scored significantly higher than the PPP group, with medium effect size. This is a similar outcome to Oberg and Daniels's (2013) study involving Japanese learners, although in this study the MTBLT group did not have access to any of the reading materials presented to them online as they only used the tasks once during the lesson and were not able to benefit from it afterwards.

There are also similarities with results obtained in Wang's (2017) study of self-paced mobile activities, Ahmed's (2015) study of mobile reading, and Alshumaimeri and Almasri's (2012) research on reading, although in this study, it was not possible to deviate from the textbook entirely. While it is tempting to assume that mobile tasks alone had a direct influence on students' progress, it is important to note the following. First, each classroom had a different teacher, and the role of a teachers' motivational strategies should not be underestimated. Second, the MTBLT students' might have been influenced by the mobile

tasks' stylistic similarity to their regular tasks, which might have helped the mobile tasks prepare students for the test. For example, the reading comprehension questions in the textbooks were open-ended, which required students to read the passage and write or highlight short answers. The mobile tasks (in the pre- and main task) required students to read from their textbooks, then choose the answers on their phones from multiple-choice comprehension questions. ELI's standard reading tests also used computer-based multiple-choice comprehension questions. In other words, the MTBLT group's use of Socrative might have given them the advantage of practising for the final examination using a similar type of task. However, other elements of the mobile tasks may have affected their achievement. Evidence from other findings in this study supports the positive influence of mobile tasks on students when compared to other groups.

Students from the MTBLT focus group thought that mobile tasks helped them remember vocabulary better than the textbook did. This finding aligns with Lai (2016), whose study showed that the mobile group had better vocabulary retention than the textbook-based group. The literature also shows that vocabulary retention is best attained when paired with a picture or additional gloss, which improves vocabulary recognition (Chun, 2006), and the mobile phones provided this.

Another explanation for students' progress in reading could be attributed to their positive attitudes towards their learning experience. The literature shows a correlation between students' perceived motivation and their achievement in language learning (Khan, 2015; Krashen, 1981). In this study, the MTBLT students' perceived achievement showed confidence in achieving better grades in their reading examination, whereas the PPP group students did not think they would do well. The correlation between students' actual and perceived achievement was not significant, a view supported by finding from Ölmez's (2015) research.

In relation to the question on motivation, students' attention in the reading classroom was measured by observing the number of students who appeared to be following what was being said and done around them. The findings suggest that more than half the students in the MTBLT group appeared to pay attention during the pre-task (28%), the main task (32%), and the post-task (30%), and they did significantly better than the other two groups. There is a trend among the three tasks, where attention levels in the pre-task were the lowest among all groups. This might be because this task involved preparing students for new vocabulary or topics. Comparing the observed and perceived attention was not statistically possible, but a pattern was observed emerging from the percentages of all three groups. The MTBLT group

had the highest observed and perceived attention, followed by the TBLT group, then the PPP group. Less than half of the PPP group (10%) paid attention to the activities, whereas 54% strongly agreed that they paid attention. The TBLT group observation indicated that significantly more than half of students (75%) paid attention, and 40% strongly agreed that they paid attention. Lastly, more than half of the MTBLT group (95%) paid attention when observed, and the majority (83%) strongly agreed they were alert during tasks. The MTBLT group was more confident in perceived attention than the other groups, because the majority chose "strongly agree" and only 4% did not know.

When observing students' participation, it was easier to monitor the MTBLT group's activities through the Socrative app, which showed how many students were logged onto the App and answering questions on the teacher's monitor. It was also easier when using Padlet, as students' writing appeared on the screen. For the PPP and TBLT groups, participation was scored according to how many students were actively writing, reading, and interacting with the class. This result could have implications for language teachers who are afraid that using smartphones in their classrooms might distract them from monitoring students (Al-Seghayer, 2014).

The majority of students in all three groups disagreed that they usually participated in reading activities, with the MTBLT group showing more confidence by choosing "strongly disagree" compared to the other groups' "disagree". It could be hypothesized that mobile tasks made the MTBLT students more aware of their actions when comparing themselves in two different teaching settings. This was evident in their perceptions of technology use in reading classrooms, with 78% strongly agreeing that mobile tasks made them more active. In total 67% of the PPP group reported not participating in reading tasks, making them the highest when compared to the TBLT (60%) and the MTBLT (35%) groups.

Volunteering was observed by noting how many students willingly answered questions or engaged in activities. Examples included raising a hand when the teacher asked if someone could spell a certain word or explaining information from the reading passage. When there is lack of or low rates of volunteering, the teacher sometimes coaxed students or called a student by name to contribute. Students in the MTBLT group showed significantly higher volunteering levels than the other groups. In perceived volunteering, students in all groups disagreed with the statement, "I often volunteer to answer in reading classrooms", with the highest responses from the MTBLT group (83%). However, when those students were asked if they thought mobile tasks helped them volunteer more, 70% of them strongly agreed.

Although to our knowledge no relevant research has investigated attention, participation, and volunteering specifically, some studies have explored students' engagement while using mobile tasks. Results from Sarhandi et al.'s (2017) showed that the experimental group was less distracted from tasks than the control group ($p < 0.001$). The mobile group's qualitative data also showed overall positive behaviour and enthusiasm, and declined engagement from the control group. However, a study by Sarhandi et al. (2017) did not account for achievement, levels of participation and volunteering, or the possible reasons behind students' motivated behaviour. They argued that because the tasks were exactly the same but with different delivery methods (paper-based and mobile-based), the mobile group could have influenced by the novelty of the teaching aid. This could also be the case in this study, but further longitudinal research on this area is required.

The results of Solares' (2014) study, namely, that the mobile group appeared more motivated and positive towards the tasks could also be the case in this study, in that students were motivated to participate in the reading activities because of elements of competition, communication, or feedback. This could also be attributed to the nature of task-based teaching, as in a study by Hakim (2015), in which her participants reported high levels of perceived motivation when using a task-based approach in their EFL classes. This is similar also to Wang's (2017) study in which mobile features positively affected students' achievement and attitudes because the reading content in the mobile tasks was supported by the use of multimedia. In this study, the effects of mobile tasks, the features of the delivery method and the types of tasks used combined to motivate learners' participation, which could in turn have influenced their linguistic gains and achievement. The MTBLT group performed better than the TBLT group in all aspects of perceived and observed motivation, which suggests that the mobile tasks offered more than the TBLT for the other groups.

In summary, the current research aimed to fill a gap in the literature and to extend and deepen our knowledge of the field by investigating how mobile tasks affect specific aspects of EFL learners' motivation in the reading classroom. The majority of students in all groups were not enthusiastic about participating in classroom tasks. On the other hand, students who were taught using TBLT and mobile tasks in reading classes showed a significant difference in their classroom behaviour compared to the PPP group. Additionally, the MTBLT group's students thought their motivational behaviour and attitudes positively changed when they used mobile tasks.

In terms of the second research question, the quantitative findings showed that students in the MTBLT group did better than the other groups in reading achievement, participation,

attention, and volunteering. This difference could be attributed to several factors besides the use of mobile tasks. First, the teacher might have had some influence on the learners in terms of motivational strategies. Second, the novelty factor of using technology might have had a role in holding learners' attention. Third, the design of the tasks had slightly similar effects on students' motivational behaviours, as is evident from the TBLT group.

Conclusion

Implications

Exploiting the potential of smartphones can be beneficial for EFL instructors and teachers in reading classrooms, particularly if the tasks are designed to offer students who have a tendency to be passive a choice of reading materials, collaborative engagement, and challenging opportunities. While it is important to provide opportunities for autonomous learning to students, teachers should understand that this does not mean their role is reduced. Balanced tasks that provide choice to the students could be more beneficial to the Saudi learners who are not ready for full autonomous learning. Moreover, teachers who are afraid of not being able to control students while mobile tasks are being used could benefit from using mobile applications like Socrative and Padlet to monitor students' participation.

There are also implications for EFL policy makers and administrators. Firstly, the focus of the learning materials should be on the quality of the curriculum, not the quantity (Al-Nasser, 2015). Providing engaging and authentic activities for students instead of focusing on the quantity of topics and grammar covered in the textbooks could enhance learners' motivation. Reducing the amount of content could help lift the pressure from teachers who are hesitant to incorporate authentic materials and motivating tasks into their lessons. Secondly, teacher-training programs should provide guidance to teachers on how to integrate smartphones in their teaching. Furthermore, this study could benefit teacher-training programmes in Saudi Arabia by supporting teachers with the essential knowledge about how to combine motivational theories with mobile task design. Implications for policy suggest that the curriculum should integrate more meaningful opportunities for students to practise the language with meaningful and stimulating tasks.

Limitations

Several limitations of the research are worth identifying. First, this study did not employ a delayed post-test because it was difficult to assemble all the participants after they finished the final module of their course. Second, the data collection tools were designed to explore

students' motivation in reading classrooms and did not accommodate all the features of reading. In other words, this study did not examine the effects of mobile tasks on students' vocabulary, comprehension, and phonemic awareness. Third, the findings of this study were limited to female EFL learners only.

Future research

Future studies could be undertaken in several areas. First, other areas of language learning (speaking, listening and writing) or integrated skills could be explored. Second, continuing the focus on reading skills, particular reading strategies or skills; i.e. learners' skimming and scanning while reading through the use of the latest eye-tracking technology, is an area worthy of further investigation (Stickler, Smith & Shi, 2016). Third, there is a need for longitudinal studies which investigate the use of mobile tasks over a longer period of time, preferably more than one academic semester (Burston & Athanasiou, 2019). Finally, as this study was limited to female students, future studies should aim to compare male and female students in the Saudi Arabian HE context, preferably triangulating data from several types of higher education institution.

References

Ahmed, M. D. (2015). Can smartphones pave the path towards EFL competence for Saudi college students? *Education and Linguistics Research*, *1*(2), 120.

Al-Nasser, A. (2015). Problems of English language acquisition in Saudi Arabia: An exploratory-cum-remedial study. *Theory and Practice in Language Studies*, *5*(8), 1612.

Alrabai, F. (2016). Factors underlying low achievement of Saudi EFL learners. *International Journal of English Linguistics*, *6*(3), 21-37.

Alshumaimeri, Y. A., & Almasri, M. M. (2012). The effects of using WebQuests on reading comprehension performance of Saudi EFL students. *TOJET: The Turkish Online Journal of Educational Technology*, *11*(4).

Al-Seghayer, K. (2014). The four most common constraints affecting English teaching in Saudi Arabia. *International Journal of English Linguistics*, *4*(5), 17-36.

Alzeebaree, Y., & Hasan, I. A., (2020). *What makes an effective EFL teacher: High school students' perceptions*. *The Asian ESP Journal*, *16*(1.2), 169-183.

Burston, J., & Athanasiou, A. (2019). Twenty-five years of MALL experimental implementation studies. In A. Andujar (Ed.), *Recent tools for computer- and mobile-assisted foreign language learning* (pp.35-59). Hershey, PA: IGI Global.

Chen, J. C., & Brown, K. L. (2012). The effects of authentic audience on English as a second language (ESL) writers: A task-based, computer-mediated approach. *Computer Assisted Language Learning*, *25*(5), 435-454.

Chun, D. M. (2006). CALL technologies for L2 reading. In L. Ducate & N. Arnold (Eds.), *Calling on CALL: From theory and research to new directions in foreign language teaching* (pp. 81–98). San Marcos, TX: CALICO.

Creswell, J. W., & Clark, V. L. P. (2011). *Designing and conducting mixed methods research* (2nd ed.). London: SAGE.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.

Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), Nebraska symposium on motivation: Vol. 38. *Perspectives on motivation* (pp. 237-288). Lincoln, NE: The University of Nebraska Press.

Deci, E. L., & Ryan, R. M. (Eds.). (2002). *Handbook of self-determination*. Rochester: The University of Rochester Press.

Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational psychologist*, *26*(3-4), 325-346.

Dörnyei, Z. (1998). Motivation in second and foreign language learning. *Language Teaching*, *31*, 117-135.

Dörnyei, Z. (2008). *Research methods in applied linguistics: Quantitative, qualitative, and mixed methodologies*. Oxford University Press.

Dörnyei, Z., & Ushioda, E. (2013). *Teaching and researching: Motivation*. Routledge.

González-Lloret, M. & Ortega, L. (Eds). (2014). *Technology-mediated TBLT: Researching technology and tasks*. Amsterdam: John Benjamins Publishing.

Guilloteaux, M. J., & Dörnyei, Z. (2008). Motivating language learners: A classroom-oriented investigation of the effects of motivational strategies on student motivation. *TESOL quarterly*, 55-77.

Hakim, B. (2015). The role of learning styles in the success of TBLT in EFL classrooms in Saudi Arabia. *International Journal of Applied Linguistics and English Literature*, *4*(3), 205-211.

Khan, M. (2015) Analyzing the relationship between L2 motivational selves and L2 achievement: A Saudi perspective. *International Journal of English language and teaching*, *2*(1).

Krashen, S. (1981). Second language acquisition. *Second Language Learning*, *3*(7), 19-39.

Lenchuk, I., & Ahmed, A. (2020). Making sense of task-based language teaching in the Omani EFL context. *The Asian EFL Journal*, *24*(3), 6-26.

Lai, A. (2016). Mobile immersion: An experiment using mobile instant messenger to support second-language learning. *Interactive Learning Environments*, *24*(2), 277-290.

Li, Z., & Hegelheimer, V. (2013) *Mobile-assisted grammar exercises: Effects on self-editing in L2 writing*. *Language Learning & Technology*, *17*(3), 135-156.

Nanni, A., & Pusey, K. (2020). Leveraging students' digital literacy through project-based learning. *The Asian EFL Journal*, *24*(1), 141-164.

Oberg, A., & Daniels, P. (2013). Analysis of the effect a student-centred mobile learning instructional method has on language acquisition. *Computer Assisted Language Learning*, *26*(2), 177-196.

Ölmez, F. (2015). An investigation into the relationship between l2 reading motivation and reading achievement. *Procedia-Social and Behavioral Sciences*, *199*, 597-603.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, *25*(1), 54–67.

Ryan, R. M., & Deci, E. L. (2002) Overview of self-determination theory: An organismic dialectical perspective. In: Deci E. L., Ryan R. M., eds. *Handbook of Self-determination Research* (pp. 3–33). Rochester, NY: University of Rochester.

Sarhandi, P., Bajnaid, A., & Elyas, T. (2017). Impact of Smartphone Based Activities on EFL Students' Engagement. *English Language Teaching*, *10*(6), 103-117.

Sauro, S., & Sundmark, B. (2019). Critically examining the use of blog-based fan fiction in the advanced language classroom. *ReCALL*, *31*(1), 40-55.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). *Motivation in education: Theory, research, and applications*. (3rd ed.). Upper Saddle River, N.J.: Pearson/Merrill Prentice Hall.

Solares, M. E. (2014). Textbooks, tasks, and technology: An action research study in a textbook-bound EFL context. In M. González-Lloret, & L. Ortega (Eds.),

Technology-mediated TBLT: Researching Technology and Tasks (pp. 79-113). Amsterdam, John Benjamins.

Stickler, U., Smith, B., & Shi, L. (2016). Using eye-tracking technology to explore online learner interactions. In Caws, C., & Hamel, M. J. (Eds.), *Language-learner computer interactions: Theory, methodology and CALL applications* (pp. 163-186). Amsterdam: John Benjamins.

Tran, C., Warschauer, M., & Conely, A. M. (2013). Tapping the motivational potential of mobile handhelds: Defining the research agenda. In M. Repetto, & G. Trentin (Eds.), *Using network and mobile technology to bridge formal and informal learning*.

Ushioda, E. (2013). Motivation matters in mobile language learning: A brief commentary. *Language Learning & Technology, 17*(3), 1-5.

Van Den Branden, K. (2006). *Introduction: Task-based language teaching in a nutshell*. Cambridge university press.

Van den Branden, K., Verhelst, M., & Gorp, K. (Eds). (2007). *Task-based language education*. Cambridge, UK: CUP.

Wang, Y. H. (2017). Integrating self-paced mobile learning into language instruction: impact on reading comprehension and learner satisfaction. *Interactive Learning Environments*, *25*(3), 397-411.

Warschauer, M. (1997). Computer-mediated collaborative learning: theory and practice. *The Modern Language Journal*, *81*(4), 470–481.