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Drawing Up a Medical Syllabus by Integrating the Gamified Blended Module of L2 English Learning

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Abstract

Introduction: Nowadays, mobile-mediated learning has become a primary concern of scholars applying the blended method of L2 teaching and learning. Meanwhile, prevailing game apps on mobile devices, namely m-games, have broadened the educators' pedagogical outlook. In view of that, this study endeavored to compare the efficacy of team- (vs. individual) teaching on learning L2 through the medium of m-game-mediated blended learning method.

Methods: This quasi-experimental study embraced triangulation research design. To that end, 86 male and female students from Ahvaz JondiShapur University of Medical Sciences were selected through stratified sampling method. Afterwards, 76 students were homogenized through the application of vocabulary levels test (VLT) to learn L2 vocabulary and reading comprehension in the individual- or team-teaching situations. The instrumentation included VLT, pre-research questionnaire and interview as well as formative assessment. The reliability of the instrumentation was calculated through KR-21 method and Cronbach's alpha. Likewise, their validity was authenticated by five TEFL experts. In addition to debriefing the participants through questionnaire and interview, tracing participants' performance through paper-and-pencil exercises, m-games (native vs. prefabricated), and also tailor-made tests over 18 m-game-based blended sessions prepared the ground for embarking on the triangulation design. For analyzing the data, SPSS version 21 along with descriptive and inferential statistics were employed.

Results: In the end, the t-tests analyses showed that a range of situational and social factors were found to affect participants' L2 learning. In the same vein, team-teaching situation was of palpable interest to participants to expedite their L2 learning via m-game-based blended module ($P < 0.01$).

Conclusions: In effect, welding native m-game into the proper pedagogical situations culminate in students' outperformance.

Keywords: Cell Phones, Game, Language, Learning, Reading, Vocabulary

1. Introduction

One criticism that has been leveled against the application of conventional methods of second language (L2) teaching is that it is based on the outmoded sight of learning (1, 2). Practicing didactic materials inside the classrooms through paper and pencil has little in common with everyday practices aimed at meeting with the real-world needs. Kramsch et al. (3) report that with the advent of functional and communicative proficiency in the 1970s, and all through the 1980s, teachers moved away from relying mainly upon textbooks to teach language. For the moment, education technology (4) has coined new instructional contents. So, performing more developmental work to tap into the extramural window to get the students' attention for understanding the contents seems indispensable.

Stansbury (5) argues that "[in truth], many times the [L2] classroom is not supporting the technology; thus, the first place to begin before even thinking about the technology is in the tools already available in the classroom" (p. 16). In the arena of 21st century students will have access to technology and conventional mode of materials delivery. For that reason, trying to provide the best possible ways to engage students in the extramural didactic activities via technology is the modern resort for contemporary researchers. It will be a place for students to come and work together (6). In a similar vein, from the time when the Information and Communication Technology (ICT) evolved, games have developed in various directions; they can generally be characterized by saying that they have concomitantly become narrower and more specialized. Mobile-game (m-game) is, in turn, part of a new generation of facilities that features cutting-edge technology. Using different modalities in developing games enables students to assume closer control over the mental functioning needed to perform a task (7). Moreover, ubiquitous feature of didactic m-games make way for students to feel easily immersed and be identified with the environment. According to the

principle of continuous access (8), integrating m-games into the blended module of L2 learning paves the way for students to gain access to their knowledge they have previously learned (i.e., a priori knowledge). Through simulating the real-world phenomena in the m-games, students appear to be much more powerful in contexts where they have few or no opportunities to interact with members of the target language. Eseryel et al. (9) report that "Digital game-based learning, especially massively multiplayer online games, has been touted for its potential to promote student motivation and complex problem-solving competency development" (p. 42). Warschuar (10) spotlights the rosy role of equal participation of learners in the extramural learning situations, seeing that in his study, the learners who were hesitant to express themselves in the classroom were more willing to play a part in the virtual learning environment; that is, more equal participation in the ICT-mediated learning situation than in the conventional learning situation. Therefore, in order to keep up with the rapidly changing reality, our attitudes towards teaching and learning need a drastic transformation (11).

In the conventional classroom situation, conversation among students reaches to its lowest point in the way that conversation is limited to the example that teacher has all the initiations and learners all the responses (12). Similarly one of the tarnished features of the conventional individualistic classroom as Cutting (13) asserts is that "Teacher is permitted long turns and students can have short turn in response" (p. 26). This individualistic manner of practicing has not many things in common with non-formal practicing of materials through the medium of technology. Everson (14) believes that views of classroom as a sociocognitive context appear here and there, so "classroom instruction should provide an environment in which students are able to externalize their thoughts [so that] the writer is able to step away from personal, abbreviated inner speech to external social speech" (p. 10) (as cited in Calfee, p. 147 (15)). Previous studies (16-18) have reported that corresponding with partners, either in real situation or in non-formal virtual learning settings has been found to have heartening influence and improve attitudes towards target language learning. Paige et al. (19) point out that it appears that favorable interaction leads to the discoveries of similarities and of our common humanity. Del Valle et al. (20) refer to the notability of students' teamwork for L2 learning in the virtual world by the reason that "the sense of relationship that can arise because participants project their personal characteristics into the community presenting themselves as real people" (p. 808). Talking and social interaction enhance learning of any kind (21). Post and Rathet (22) believed that "if we utilize collective context of learning while teaching English, [then] we can reduce the processing load that students experience" (p. 2). Swain and Lapkin (23) hypothesized that having to interact is of assistance to learners to make the input more comprehensible and compel them to pay attention to the role vocabulary items play in the input and to try out the hypotheses came by in the learning process. Correspondingly, vocabulary knowledge is the prerequisite for students to read between the lines in the learning networks (24). More to the point, as Muhleisen (25) points out "all science is useless if it is not accessible to other members of the discipline" (p. 117). As a matter of fact, scant attention to the communicative aspect of pedagogy leads into students' underperformance. Wells (26) maintains that group learning helps students "to coordinate their activity and simultaneously to reflect on and share their interpretations of experience" (p. 72).

Enriched with properties of formal and non-formal pedagogical contexts, blended method of learning sets the seal on both classroom- and non-classroom-based learning and the combination of both vouches for remembering the materials taught through this learning method (27-29). Pierce (30) says through the blended learning method "we have brought together classroom instructional materials, rich multimedia, and a powerful analysis engine that will transform the way teachers teach and students learn" (p. 10). Dziuban et al. (31) state that "blended learning should be viewed as a pedagogical approach that combines effectiveness and socialization opportunities of the classroom with the technologically-enhanced active learning possibilities of the [virtual] environment" (p. 3). However, blended manner of L2 pedagogy goes beyond the assumption of complementarity of the non-formal mode of learning. It assumes that the whole is greater than the sum of parts. On the word of Neuman (32) considering the distinctive features of formal and non-formal training, this manner of pedagogy suggests that each medium's physical characteristics, structure, and method of representing content may add a new aspect to learners' knowledge and also the means they use to gain profound knowledge.

On the other hand, though the ICT-based blended method of L2 learning has been proven effective in facilitating students' learning, Yashima (33) noted "a careful examination of what it means to learn a language in a particular context is necessary before applying a model developed in a different context" (p. 62). Insixiengmay (34) says "the choice of [proper instructional] activities helps students take ownership of their learning. This way, target language [learning and] comprehension is much quicker and students are more confident in their target language learning" (p. 2). Golato and VanPatten (35) argues, "students are doing according to their experience in the classroom educational environment; thus, how they are successful [depends on] the conditions that classroom learning impos-

es" (p. 45). For now, comprehension skills along with the application of new technologies, however, are thought to engage L2 students more actively in the construction of meaning (36).

In view of that, in the present study, team-teaching situation (37, 38) was drawn on to include teachers and to see whether this manner of instruction, as compared with individual-teaching situation, helps to prevent the all at once replacement of technology. For the meantime, the mediating effect of m-game type (ready-made vs. native m-game) on participants' L2 learning ability was probed, on top.

2. Methods

To conduct the present study triangulation research design was adopted. To that end, English vocabulary levels test (VLT), pre-and post-research questionnaires along with formative assessing of participants' performance during 18 m-game-based sessions were included.

This quasi-experimental study took place at Ahvaz JondiShapur University of Medical Sciences. To specify sample size a pilot study was carried out. The realization level of the study's key feature, namely outperformance as a result of teaching and learning in team-teaching situation, was about 0.95%. As a consequence, the study sample size was calculated using the dispersion of this key feature. Seeing that, the sampling error is considered to be less than five percent, the sample size for conducting the study was reached through the following formula (i.e., Morgan Formula):

Equation 1. Morgan Formula

$$n = \frac{Z_{\frac{\alpha}{2}}{}^{2}.\mathrm{P}\,(1-P)}{d^{2}} = \frac{(1.96)^{2}\,(0.95)\,(0.05)}{(0.05)^{2}} \cong 72 \quad (1)$$

Despite the size of 72 students reached through the Morgan formula, 20 percent of this population (i.e., 20% $\times$ 72 $\approx$ 14) was included in to the sample size to compensate for the sampling error. Consequently, through proportional stratified random sampling method, 86 female (n = 64) and male (n = 22) students from two active learning classroom were nominated as the sample size. They were from age range of 19 - 22. The selected students were those who had to study L2 English as a mandatory course, namely 'General English for Medical Students'. To homogenize (excluding benchmark) the selected students, VLT was embraced as a benchmark (39). The VLT gauged students' original knowledge of L2 vocabulary with a view on excluding the vocabulary items with which students were already familiar in the main materials delivered in the study. The 20-minute text messaging-based VLT with 50 word items was taken out from the corpus with 23985 word items that took shape from merging the word lists of English (1) and (2) for pre-university students (40) as well as Oxford English for careers: medicine 1 (41). The final corpus was submitted to Word Frequency Counter (http://www.textfixer.com/tools/online-word-counter.php#newText2) to calculate the frequency of the items. With selection of every 450th word item, the VLT opened with < 1, 207 paragraph > and ended with < 23900, 1 effective >. At this point, the first number indicates the word order in the corpus and the second number shows the frequency of the intended item on the corpus. So, the order of the 'paragraph' is one in the corpus with more than 207 occurrences. The reliability of the VLT was 0.85 as it had been computed in the pilot phase of the study. Also, five TEFL experts confirmed its validity in that pilot phase. Students were urged to write at least one Persian meaning for each item via text messaging. In the end, through grading the students' responses to VLT, 76 students with scores between one standard deviation above and one standard deviation below the mean were decided on as the participants (Table 1).

Table 1. The Descriptive Statistics of the VLT

	Values
N	86
Mean $\pm$ Standard Deviation	40.05 $\pm$ 6.31

In actual fact, to set the seal on the homogeneity of the participants, 10 students among those whose scores settled one standard deviation above and one standard deviation below the mean (mean $\pm$ 1 standard deviation) were hauled out from the major study, by the reason that they were not considered as homogeneous. Parenthetically, the distribution of the frequencies and percentage of the VLT test scores of the selected students are put in Table 2.

This way, six students who scored below 33.74 (40.05 - 6.31 = 33.74) and four who scored above 46.36 (40.05 + 6.31 = 46.36) were not eligible for taking part in the major study.

Following sections present a particular account of teaching, classroom and non-classroom instruments and materials as well as the status of students and teachers as they entered and practiced their different roles in the m-game-based blended course of L2 pedagogy.

Step I (pilot study): in this step a dry run of the major study was administered on 20 students other than those who were to participate in the major study for the pur-

Table 2. The Distribution of the Frequencies and Percentage of the VLT Scores

Value	Frequency		Percent	Valid Percent	Cumulative Percent
	Male	Female			
M - 1 SD	2	4	7	7	7
Between M ± 1 SD	19	57	88	88	95
M + 1 SD	2	2	5	5	100
Total	23	63	100	100	100

Abbreviation: SD, standard deviation.

pose of estimating the time span needed for doing the virtual tasks including m-games and reading comprehension. Also, the reliability of the instruments was calculated during conducting the pilot study. Meanwhile, decision was made concerning the validity of the instruments by five L2 teaching experts.

Step II (preparatory step): the preparatory step set out to design some actual tasks to be performed by students both inside and outside the classroom. In this step, before starting the Treatment and Assessment Step, namely third step, through administering a pilot session, researchers tried to elucidate what was to be followed in the major study. A pre-research questionnaire with 15 items was devised. The initial four items of the questionnaire launched an enquiry about the students' preferences for receiving virtual contents, including m-games and reading comprehension test. The students' awareness of the games was measured through these initial items, as well. Another line of follow-up questioning containing 11 items, which was delivered to participants via text messaging, was prepared to debrief the participants regarding their attitudes towards the context and manner of practicing as well as learning through the m-game-based blended module. This Likert type questionnaire was of five-point scale, where 1 indicated 'I totally disagree', 2 indicated 'I partially disagree', 3 was used for 'I don't agree or disagree', 4 represented 'I partially agree' and 5 indicated 'I totally agree'. The reliability of this pre-research questionnaire was calculated r = 0.86 via Cronbach alpha in the pilot study. Also, five TEFL experts confirmed the content and face validity of the questionnaire.

Step III (treatment and assessment step): in this step, the selected participants were randomly divided into two groups to practice and learn L2 vocabulary and reading comprehension in 18 m-game-based blended sessions. Classroom-based L2 instruction here in this study was the starting point. For that reason, on the threshold of every blended session, using screen and whiteboard, the instructor taught students L2 materials from Oxford English for careers: medicine 2 (42) for 90 minutes. It is of note that the syllabus was the same for the participants of the two groups.

Having pigeonholed into two groups in the early days, first group of participants were dispatched to the individual-teaching situation to do the 20-score textbook exercises individually inside the classroom (group one: individual group). For the meantime, participants of the second group were randomly divided into 19 real dyads to furnish team-teaching situation in the classroom for doing the same 20-score textbook exercises. In each dyad, participants were urged to rehearse the materials with each other via paper and pencil (group two: collective group). Students in this group were allowed to talk to each other about what they were practicing and share their ideas with each other, as well. Like so, team-teaching situation was not applied for practicing textbook exercises in the case of the first group of participants. A snapshot of the blended module is shown in Figure 1.

To make the materials taught and practiced inside the classroom anew, mobile game (m-game) was utilized. In the view of that, at the start of each gaming session, participants of the two groups (i.e., individual and collective groups) were invited to work collaboratively in the mobile-supported games relying on mobile-mediated and face-to-face communication with other participants, both from their groups (confederates) and from local community (other classmates). They were paired off with their confederates into dyads and were invited to collective gaming via learning management system (LMS). The LMS was established with the purpose of conducting the virtual sessions, integrating m-game, and mobile-based assessment. The LMS is a mobile-mediated system of practicing, learning, and assessment that include dynamic as well as collective effort of students in accomplishing didactic activities with the goal of implanting technology with the blended module of L2 learning.

In the blended module of the present study, m-game was presented as a tool to be used alongside other instruc-

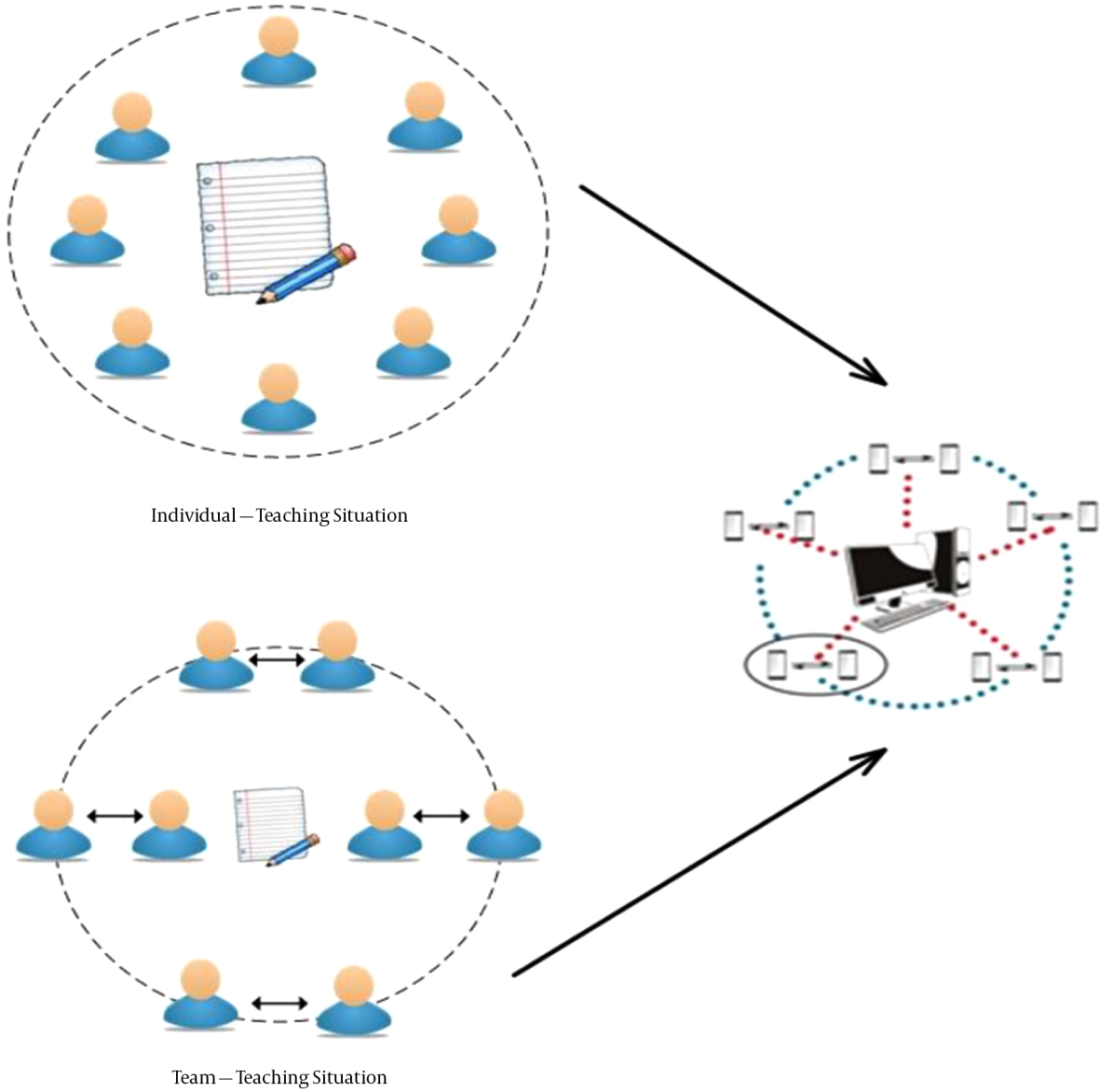

Figure 1. A Snapshot of the Blended Module of the Study

tional tools for enhancing L2 students learning ability. In effect, employing variegated games lend much support to the hypothesis that games aid the development of L2 skills (43). In this fashion, this study attempted to weld fun and creativity into L2 learning to set in prefabricated and Persian (native m-games, here in this study) hands-on games in an m-game album paired with teaching materials in conventional classrooms. The list of applied m-games in the game album was tabulated in Table 3.

In this album, prefabricated and native m-games were adopted to make an informed, strategic decision that would best align with participants learning objectives and integrate with existing technology. One sample of the m-games is the L2 outlines about fatty liver disease (FLD) embedded in the game of 'Hæft Sæng'. It intends to help students to read, comprehend, and pick up the basics of FLD, its symptoms, and the course of action for curing and preventing the disease by unscrambling the sections of the m-game in collaboration with their confederates (Figure 2).

Using parts of plots in the background of the m-games,

Table 3. The List of Applied M-Games in the Game Album of the Study[a]

M-Game Type	Label	Source	Type for Playing	
			Individual	Collective
Prefabricated	Board Games	http://www.eslgamesplus.com/about/	Yes	Yes
	ESL Vocabulary	http://www.eslgamesplus.com/bathroom-vocabulary-game-car-racing-esl-vocabulary-game	Yes	Yes
	Try This	English Games (44)	Yes	Yes
Native (Persian)	Xane Bazi	Indigenous Games of Iran (45) (virtual form: designed by the researchers)	Yes	Yes
	Hæft Sæng		Yes	Yes
	Šir Pælæng		Yes	Yes

[a]Note: the last column let the readers know whether individual and/or collective version of the intended m-game is available or not.

students had to sort out different parts of the m-games together with their co-members so meaningful plots unfolded; that is to say, contiguous images of the m-games were matched to their appropriate written cues by members of dyads, so the plots gradually become clearer. The plots were of the related stories and tailor-made to the content of the textbook to increase the amount that students were reading and getting feedback. In this manner, students played with marked L2 vocabulary items; that is, items that were made salient in comparison with their adjacent items, in order to exploit them in subsequent reading tasks. Simultaneously, as students were fulfilling the m-game-based activities, they were given feedback by their confederates either orally or in written along with emoticons. In view of that, with reference to students' answers to the items sought out their first choice regarding the number, time, and duration of the displayed m-games, in each virtual session two prefabricated and native m-games were scheduled to be delivered on participants' mobile devices in the afternoon at four-minute intervals (Table 4).

Table 4. Analysis of the Participants' Answers to the First Items of the Pre-Research Questionnaire

Items (n= 4)	Options	Percent (%)
1. How many m-games per session do you think are suitable?	One	1
	Two	82
	Three	7
	Four	6
	More than four	4
2. What is your suggestion for timing of m-game delivery?	Early in the morning	0
	At noon	3
	In the afternoon	79
	On the evening	10
	On the weekend	8
3. What time span do you suggest for playing the m-games?	10 minutes	71
	20 minutes	17
	25 minutes	8
	30 minutes	4
	45 minutes	0
4. How experienced are you in practicing native m-games?	Novice	14
	Semi-professional	74
	Old-hand	12

Abbreviation: M-game, mobile game.

To make sense of the students' progress, formative assessment was utilized both inside the classroom and in the extramural situation. Accordingly, towards the end of each session, the accomplished exercises were collected by the instructor to be weighed up formatively.

As regards the formative assessment of the students' performance, in the extramural situation, the m-games were designed to measure the students' achievement in L2 vocabulary learning. In other words, m-games were also representative of the students' ability to recognize the proper functions of the vocabulary items. Indeed, m-games showed the students' performance on each highlighted item as correct or incorrect and also revealed their developmental level during the course. Each correct selection was counted as a score. In each session, practicing 20-score m-games weighed in at eight minutes and participants saw only instructor-selected apps and were locked out of system settings. Instructor also could view thumbnail images of students' screens.

As to the assessment of the participants' reading comprehension, 18 fifteen-minute text messaging-based tailor-made reading comprehension tests were developed to be delivered through the medium of the participants' mobile devices. The twenty-score tailor-made reading tests con-

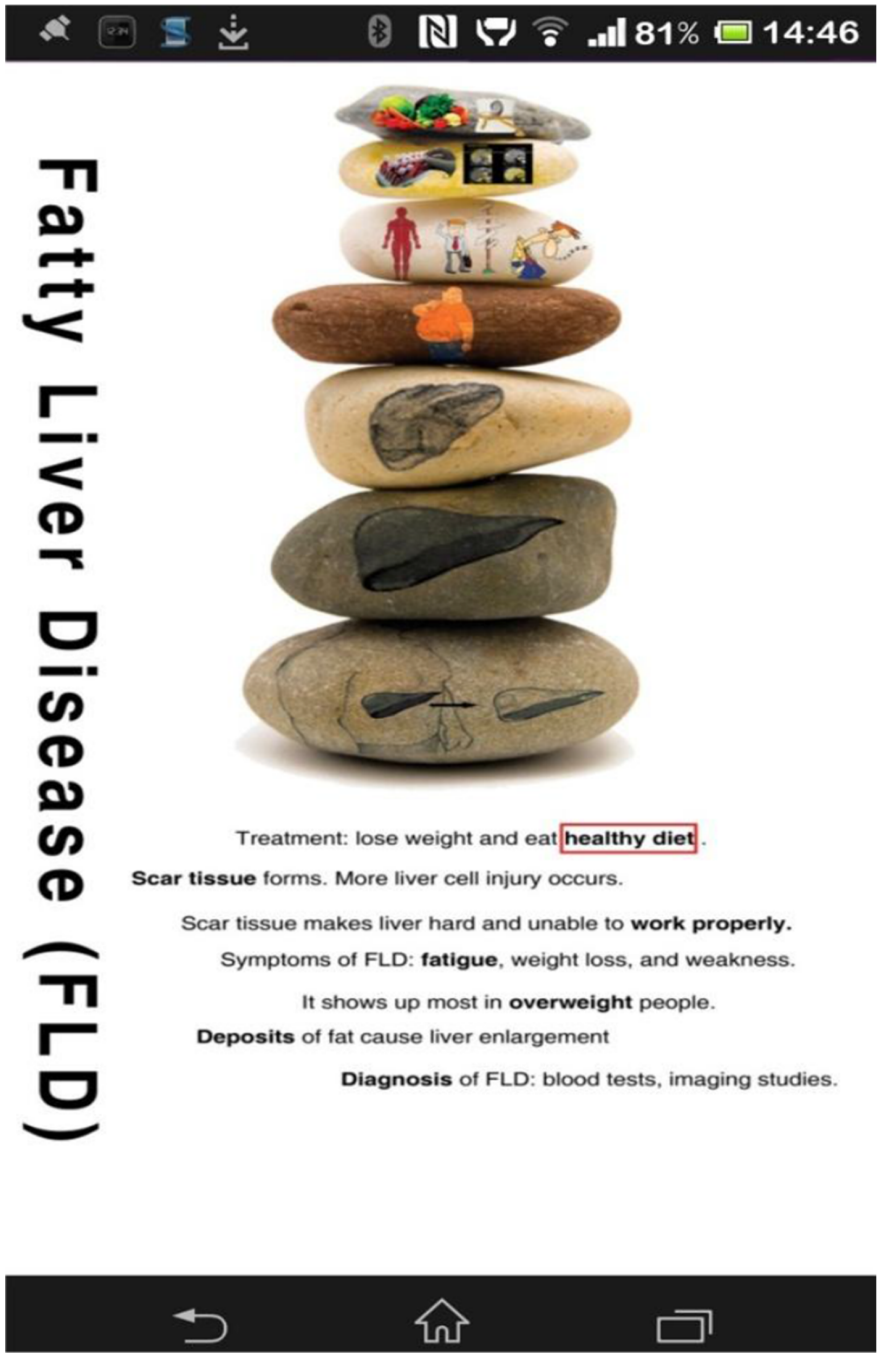

Figure 2. A sample of M-Game-Based Extramural Practice

sisted of mobile-presented reading-passages, especially written to contain examples of word items taught and practiced inside the classroom and in the virtual playgrounds.

Step IV (focus group interview): this study used a post-reflection design, which employed a post-research focus group interview to reveal any discrepancy among the members of various groups. This interview was also of assistance for the researchers to ensure that students have common understanding of the circumstances and con-

texts which elicited best performance. Three prompts intimately connected with the research points were included in the interview, as well. They were those three modified open-ended question items initially put forward by Al-Seghayer and Boller (46, 47). The prompts required the selected students to self-report on some aspects of their experience in the blended module that was comprised of m-games. The items of the interview are as follows:

When is a learning experience really m-game-based L2 learning? (47)

What problems at work make it difficult to get m-game-based L2 blended learning done swiftly, efficiently, or gainfully? (46)

What are the advantages of this m-game-based L2 learning module for helping you to learn L2 vocabulary learning and reading comprehension? (46)

In consequence, five members from the first group and five members from the second group were randomly selected to take part in the 25-minute focus-group interview. The students' answers to the questions of the interview were audio-recorded and transcribed by the researchers to be analyzed.

3. Results

The findings presented at this point are based on data gathered from the questionnaire, through which participants were sounded out, from participants' performance inside the classroom and in the extramural settings, at the same time from resorting to data from participants' answers to the items of the focus group interviews. They are like this:

3.1. Students' Responses to the Items of the Pre-Research Questionnaire

As far as the efficacy of the blended method of L2 learning was concerned, dissenting voices among the respondents was very rare (3%). As Hayati et al. (48) emphasized freedom from the constraints that somewhat curb students' learning ability in the conventional teaching method gives rise to students' interest in the blended learning.

Sixty seven percent of students voted in favor of the game-based learning. They were of the opinion that game has important ties with sociology and general learning. Ellis (49) gives special importance to the need for employing variegated tools to motivate learners in the learning process. He emphasized that "providing learners with incentive may aid learning by increasing the time learners spend [practicing]" (p. 628). These students liked to engage in gaming task for L2 learning because they saw it enjoyable and satisfying to do. Students who believed that establishing congruence between classroom and extramural learning activities prevents the abrupt substitution of teachers with technology-based instruction were in the majority (79%). They passed the opinion that through joining the knowledge together, students can find different routes to do well in L2 learning. In respect of homogeny of the applied modes inside and outside the classrooms, Dornyei (50) points out that "the effort a learner is prepared to invest to achieve overall goal is heavily influenced by the quality of the learning experience" (as cited in (49), p. 688).

Table 5. The Mean Score and Standard Deviation (SD) of the First 11 Items of the Pre-Research Questionnaire[a]

Item (n = 11)	Mean ± SD	p, %[b]
5. The L2 blended learning module offer more than face-to-face learning.	4.93 ± 0.581	97
6. Blended leaning is of assistance for L2 students to exercise a cut above control over the amount of time spent on didactic activities.	4.93 ± 0.581	97
7. Modern tools required by blended L2 learning keep students up to date.	4.84 ± 0.582	94
8. M-game-based L2 learning allows students to try the new things they have learned inside the classroom.	3.86 ± 0.982	67
9. The m-game types (prefabricated vs. native) are effective for learning L2 vocabulary learning and comprehension.	4.54 ± 0.637	79
10. Grafting m-game on the learning L2 learning process assists in applying concepts to practical problems or in new situations.	3.51 ± 1.015	62
11. Application of didactic m-games paves the way for synthesizing and organizing ideas, information, or experiences into new situations.	3.64 ± 0.998	65
12. I prefer ask question during class or contribute to class collaboration rather than individual practicing.	4.87 ± 0.352	88
13. Using m-games for L2 learning assists students in working effectively with other classmates.	4.87 ± 0.352	88
14. Aligning the extramural practicing with the classroom practicing bids fair to succeed.	4.67 ± 0.615	79
15. Through establishing consistency between formal and non-formal learning situations, tools required by blended L2 learning can keep students up to date.	4.53 ± 0.741	73.3

Abbreviation: SD, standard deviation; SMS, short message service.
[a] Scoring: 5, strongly agree; 1, strongly disagree.
[b] Percent of participants who had positive attitude towards the contents of the question that was put to them.

In this vein, a great majority of the respondents (88%) added that collaborative practicing of materials cleared the way for the easy interaction of students with their partners. They argued that students who practice the L2 instructional materials in proximity to their confederates

can share their knowing in an efficient way. They maintained that indeed collective learning situation provides an excellent opportunity for students to develop the critical thinking strategy of didactic m-games as a tool for thinking. As indicated by Johnson (37) "[when] the [collective] stories come to life, students gain insight and ideas from others, and learning is enhanced" (p. 14). On the whole, students from two groups all seemed to converge on the same path. The descriptive analysis of participants' answer to the second round of items of the questionnaire is put into table 5.

3.2. Students' Performance Inside the Classroom and in the Extramural Setting

Given that L2 vocabulary learning and reading comprehension were the primary aim of this study, each result is dealt with separately.

The results supported the success of implementing m-game-based blended module of L2 vocabulary learning and reading comprehension. For the most part, comparison of the participants' performance before the gaming session in the classroom and their performance after the gaming session ($t = 2.08$ for the first group, $P < 0.05$ and $t = 4.16$, $P < 0.01$ for the second group) indicated that students achieved higher scores after gaming than before, suggesting the facilitative role of m-games in the blended module of L2 learning. The gathered data corroborated the role that m-game played in the blended module of L2 vocabulary learning and reading, which enhanced the rate and ease of L2 learning (Table 6).

Table 6. Descriptive Analysis of Participants' Performance Inside and Outside the Classroom[a]

Group	Inside the Classroom (Before Gaming)	Outside the Classroom (After Gaming)
I (individual-teaching situation)	15.23 ± 3.52	16.89 ± 3.12
II (team-teaching situation)	16.15 ± 3.14	19.08 ± 2.82

[a]Values are expressed as mean ± SD.

According to Table 6 students who reported less noticing of the salient word items of the m-games when they played the m-games tended to have lower score in the final tailor-made reading comprehension tests. Also, as result of their unfamiliarity with the prefabricated gaming situations, they underutilized the items they had been practiced in these game settings in their answers to the reading comprehension questions ($t = 1.99$, Sig. $= 0.014$). In point of fact, students' greater familiarity with the playground led into their better understanding of the embedded materials ($t = 2.88$, Sig. $= 0.004$). The descriptive analysis of participants' performance inside different m-games is put into Table 7.

Table 7. Descriptive Analysis of Participants' Performance Inside Different M-Games

Game	First Group (Group I)	Second Group (Group II)
Prefabricated	15.68 ± 1.78	16.52 ± 1.92
Native	17.42 ± 1.16	18.28 ± 1.01

Whether the students might learn L2 better with an interactive manner of practicing or with an individual one, is one of the questions this study endeavored to answer. To tackle this question, the results disclosed that performance of second group of students, who were instructed in the team-teaching situation inside the classroom, perceptibly improved throughout the course ($m = 19.08$), whereas the change for better in the performance of first group of students, who were taught L2 materials in the individual-situation teaching, was at a snail's pace, namely minimal increases in the students' L2 learning ability ($m = 16.89$). In the same vein, members of the second group successfully proceeded to the development of their L2 reading skill. To be precise, the mean effect sizes for communicative instruction were notably larger than those for individual manner of practicing. In effect, students who were instructed in the team-teaching situation of the classroom achieved higher scores on vocabulary learning and reading comprehension ($t = 13.86$, $P < 0.01$). Communicative manner of instruction resulted in better outcome in the case of native m-games in the first place and then in the ready-made m-games, as well. To put it simply, participants of the second group could successfully create a community of inquiry all through the L2 vocabulary learning process. Moreover, these students tended to use English actively outside the classroom, namely in the playgrounds and in the reading tests towards the end of each extramural session. As a result, tallying the participants' performance during the 18 didactic courses showed that embedding native m-games in the completely collective L2 blended learning module added to the usefulness of the module.

3.3. Students' Responses to the Questions of the Interview

At the outset, the selected respondents from both group voted in common accord in favor of the efficiency of keeping correspondence between classroom and non-classroom situations. They opined that "content in the non-formal situation of gaming was simply understood by referring to the relevant features embedded in the formal situation of the classroom. As a consequence, estab-

lishing consonance between formal and non-formal situations ushered in students' outperformance". Additionally, a great majority of the selected participants from the second group (i.e., team-teaching situation) ascribed their success to the collective practicing manner. They said that team-teaching situation produced unparalleled negotiation opportunities; so, they could home in on L2 vocabulary learning and comprehension.

To sum up, all members of two groups regarded native m-games and collective manner of L2 learning with favor (See Appendix).

4. Conclusions

Face-to-face manner of L2 learning gives students very little time in schoolhouse to actually practice the instructional contents. Quite the reverse, using the blended L2 learning method in the present study led into participants' greater access to instructional contents in the reading comprehension tests.

The results of this study disclosed that planting m-games on the blended L2 learning module can act as a catalyst in the L2 learning process. Students demonstrated higher level of control in the native m-games and achieved higher scores. Using native m-game in the completely collective blended module of L2 learning allowed students to reach full-fledged level of L2 vocabulary learning and comprehension. Conversely, the participants' L2 vocabulary learning and comprehension did not improve as a product of practice and exposure to the prefabricated m-games. Thus, it would seem that students' familiarity with learning and practicing situation is a factor in practicing L2 contents as well as their learning. Indeed, context familiarity and consonance had effect on different stages of the L2 learning process (51). At the time of practicing, it was revealed that in the familiar m-games participants exercised a great deal of their attention on the embedded contents that they encountered with for the first time. In the tailor-made reading comprehension tests, it was revealed that practicing instructional contents in the known and harmonious practicing situation accrued to successful connection of the contents with their a priori knowledge, which in turn paved the way for thriving tapping of their knowledge. In the main, the results bear out Vygotsky's (52) argument that practicing instructional contents in the familiar learning situation presents students with tasks that are beyond their immediate capabilities and then provides them with some form of support to accomplish the learning task.

Although participants got better at L2 vocabulary learning and reading comprehension by extramural practicing of the instructional materials through m-games, results showed that it is possible that the m-game-based blended module of L2 learning be more successful when it is directed at the collective mode of classroom instruction; however, it appears unhelpful when the manner of practicing in the classroom diverges from the manner of practicing in the extramural situations. Practicing materials in dyads within the four walls of the classroom making m-game a perfect place for group learning and reflection. As a result of collective practicing inside the classroom and in the playgrounds, participants used a much richer vocabulary in their answers to the reading comprehension questions. Findings disclosed that tuning the manner of extramural practicing with the manner of practicing inside the classroom led into participants' outperformance. In other words, those students who practiced in the team-teaching situation outdid their counterparts who practiced the same activities individually. In addition, as a result of collective practicing, m-games were moving steadily toward the mainstream of L2 instruction. By and large, the results bore out the Wieczorek's (53) view that individual manner of practicing is a distorted view of reality. Seeing that Iranian students are used to the interactive nature of the face-to-face manner of teaching and learning in the educational environment; so, the success of the members of the collective group in this study to some extent rides on the two-way feature of this manner of pedagogy, namely face-to-face manner of teaching and learning. What is more, learning and practicing are separate processes that at the end of the day resulted in systems where these processes intermingle with each other. In effect, this study presented another broad blueprint coming out of the attained data. The lower students achieved as a result of individual manner of practicing pointed out toward the fact that "learning context may constrain acquisition because it constrains access to the amount and type of input [students] get" ((35), pp. 57-58). Because in the blended module of this study in which classroom was conducted in individual mode of practicing, the collective mode of conducting the m-games did not follow that individual mode this was considered as a dispreferred module.

Along these lines, students are not simply automaton controlled by their previous experience (54). Rather, they sift their experience of new situation through letting their partners in on their knowledge. Bearing in mind the students' performance and attitudes, overall their L2 learning gains can be attributed to such factors as availability of partners with similar level of L2 proficiency, enhanced motivation for learning new materials through the medium of m-games, and adaptable settings, where they practiced didactic materials. In a nutshell, the interesting point was that the students' performance reflected their practicing environment, to some extent. It does not follow, of course,

that students who received materials through collective mode of teaching will be more successful, because high levels of joint effort inside the classroom do not guarantee L2 learning (55).

The findings showed that L2 learning in the blended module was best viewed as an amalgam of social and psychological features. As a result of individual manner of practicing materials in the didactic virtual playgrounds, the students' background knowledge ceased to be available and the students' L2 vocabulary learning and reading comprehension was severely hampered. Correspondingly, m-games were fully utilized in tandem with face-to-face instruction, as a predominant mode of delivery in the conventional method of teaching, under collaborative practicing condition. Also, the findings revealed that group cohesion as the prominent feature of collective practicing (56) paved the way for participants to support and encourage one another to actively participate in the socio-emotional textual interaction within the shared virtual world. Convergence among students whereby "individuals adapt their communicative behaviors in terms of a wide range of linguistic aspects in such a way as to become more similar to their interlocutors' behavior" ((57), p. 236), was a tangible proof of such a result, for the reason that the word items and phrases rectified by the students' confederates in the dyads were also frequently used by the participants in the subsequent uses. As a matter of fact, participants attempted to align themselves with each other.

This study suggested that m-games can contribute to L2 learning and points to two variables that appear to influence success in L2 learning at the first step in the m-game-based blended module of L2 learning- the extent of students' familiarity with the m-games and the extent of homogeneity between manner of practicing inside the classroom and manner of practicing within the virtual playgrounds.

A final word is that although building connection between students' engagement, curriculum, and technology remains a challenge for schools today, the obtained results of the present study revealed that through apposite deployment of m-games, everyone gets the chance to reflect on the contribution of others to the learning process, whereas, there will be limited opportunity for growth in a free-wheeling classroom discussion.

Supplementary Material

Supplementary material(s) is available here.

Footnotes

Authors' Contribution: This study is a product of the intellectual context of the authors; and that the authors have contributed in various degrees to the method employed, to the actual writing, as well as to the research setting. The content of the course was taught by Mr. Amir Mashhadi, TEFL instructor at Ahvaz JondiShapur University of Medical Sciences; we hereby should show appreciation for his fruitful collaboration.

Conflict of Interest: To prevent the information on potential conflict of interest for authors from being overlooked or misplaced, mention this information in the cover letter. Authors must identify any potential financial conflicts of interest before the review process begins. Declared conflict of interest will not automatically result in rejection of paper but the editors reserve the right to publish any declared conflict of interest alongside accepted. The following would generally be regarded as potential conflicts of interest: 1. Direct financial payment to an author for the research or manuscript production by the sponsor of a product or service evaluated in an article. 2. Ownership of shares by an author in the company sponsoring a product service evaluated in an article (or in a company sponsoring a competing product). 3. Personal consultant for companies or other organizations with a financial interest in the promotion of particular health care products and services.

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