



RESEARCH PAPER

Attitudes and Perceptions of Graduate ESL Students towards Mobile Assisted Language Learning in Pakistan

Azhar Pervaiz*¹ Rabieah Tahir² Kaynat Khuda Dad³

1. Assistant professor, Department of English, University of Sargodha, Punjab, Pakistan
2. M. Phil Scholar, Department of English, University of Sargodha, Punjab, Pakistan
3. M. Phil Scholar, Department of English, University of Sargodha, Punjab, Pakistan

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ABSTRACT

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***Corresponding
Author**

azhar.pervaiz@uo
s.edu.pk

The present paper aims to describe perceptions and attitudes of graduate and undergraduate English-major ESL students towards the use, importance, benefits and challenges they face regarding Mobile Assisted Language Learning (MALL) apps. For this purpose, a quantitative study is conducted to record the respondents' responses on a dichotomous scale. Through the study, it was found that most of the language students were using MALL and were in favor of MALL, while using mobile phone and its apps for language learning, they recognized its importance and benefits, aspired to incorporate it in traditional learning method. The respondents assert that MALL not only makes them autonomous, but also saves their time. They also recorded numerous challenges, but the greatest challenges they declared are the language learning apps which require a significant time access to operate. The other challenge is the continually bugging advertisements they had to tolerate while using language learning mobile apps which disturb their tempo and waste their time. Considering its findings, the study highlights the need of uniform integration of MALL and formal teaching-learning mode by the government of Pakistan. This needs government's specialized care and budget for the smooth running. The study provides a careful estimate of situation of MALL in Pakistan which further stresses the speedy accommodation of MALL in education department to meet international standards.

Introduction

Learning is all about acquiring knowledge or skills through instruction and experience. This acquisition can be self-driven or socially imposed, depending on the social circumstances of a person. This learning is carried out through different teaching learning methodologies such as scaffolding, collaborative learning, peer

instruction, traditional method etc. Scaffolding learning system was the main thing in the past but varied according to different cultures, and the type of knowledge learners had to grasp. The knowledge involved could be life learnt lessons, skills and knowledge related to specific field and the religious learning. With the passage of time, fields grew into more diverse sections, new systems of teaching developed, experimented, and adopted, culture changed and the needs of the people. As knowledge exchanged rapidly from 16th century with upsurge of Renaissance period, the research work got popular. As a result, experimental studies were carried out, traditional methods were discouraged, and innovations became the norm of the day. Further, educational institutions enjoyed popularity, teaching- learning domain was officially handled by various states and technological innovations were fueled by various scientists. One of the innovations, computer has become the most wonderful invention of the time, however, the computers have become compact with the passage of time, for instance smart phones are the hand size computers. With the invention of Internet and its 2G- 5G versions, knowledge and skills became the global property. There carried out the great exchange of students, teachers between different states of the world and now the in-home students are able to learn from a foreign teacher via video calling and other related apps. Since the second last decade, mobile phone apps came into vogue and have made our life easy. These apps are not only concerned to some confined field of knowledge, but also, they are able to perform any activity to assist humans. From games to skills, humans have accomplished much in this world of mobile technology. Everything is easily available on only a click such as the fields of knowledge, skills and entertainment, the mobile apps have held the central place in the field of language learning.

Mobile phone's technological functions help activate learning processes which results in easier recall of target vocabulary (Sato et al. 2015). This has markedly increased the learner's autonomy while language learning. This has been confirmed by Nasr and Abbas (2018) who interviewed five participants in their study to find the impact of mobile assisted language learning on learner's autonomy. They reported that use of selected mobile applications has increased learner's autonomy in terms of taking responsibility, decision making about reading content the time and place of reading. with the use of selected mobile applications. Here one can never forget the limitations of these virtual language learners and especially those, who are living in the developing world, still surviving with least resources. They are compelled to face scams, a lot of their time gets wasted in finding the authentic source, as well as the limited features available to them increase their problems. Such types of issues do not let them completely rely on these apps, they still feel a need to consult other web sources, blogs, and pages on internet to acquire the required knowledge. This impels us to suggest the scrutiny of all language learning apps to filter the impure elements and scams. Before that, one should have complete idea and estimate of learner's gains and loss regarding their acquisition of knowledge through these channels.

As mobile assisted language learning is a product of this century, there is a lot to explore in this topic. Unlikely to the other countries, there is little research in this domain, especially in Pakistan. This does not mask the point that, the trends in this field are developing with a fast pace. Also, there is more to explore the area of second language learning, unlike to the major research portion dedicated to EFL domain. Moreover, no significant studies have been found exploring the challenges faced by

mobile language learners. So, the present study aims to provide the potential insights corresponding to perceptions of ESL students enrolled in BS and MPhil programs offered by the Department of English in University of Sargodha. The current paper highlights not only the benefits of the mobile technology but also works on their attitudes towards challenges they face during the application usage.

Literature Review

Mobile Assisted Language Learning (MALL) helps encourage English language learning. Language is considered as an active as well as a continuous process, not to be confined by the concepts of time and place. In Mobile-Assisted Language Learning (MALL), learning theories and approaches are applied to conduct English language learning by means of mobile technology (Nasr & Abbas, 2018). Devices such as smart phones and tablets are characteristically more user friendly and powerful, this proves them a productive tool for learning inside and outside the classrooms (Lin et al., 2017; Sung et al., 2016). Pegrum et al. (2013); Soruç and Tekin (2017); Vazquez-Cano (2014) found that mobile phones are occupying a central place in educational institutes of today's world.

MALL has been reported to be a beneficial tool to assist language learning. It fosters motivation, autonomy, confidence, collaboration, customized learning system, better skills, and knowledge. Many studies have claimed positive effects of MALL, such as learner's autonomy an approach that engages learner in mediated mental activities and thereby making it in-charge of its own language learning (Benson and Voller, 2014). Nasr and Abbas (2018) used two applications in their study, that included internet search engines and WhatsApp groups to dispense external reading material and to interact with their peers as well as teachers outside the classroom. the result depicted that motivation of participants were enhanced to involve in learning outside the classroom regarding liberty in choosing content, time, and place for their own reading. In another study, Attewell (2005) proposed an M-learning model and implemented in UK, Italy, and Sweden, in an order to stimulate learner's motivation in foreign language learning in SMS-based course. About 82% of students recorded to have improved their reading comprehension by using mobile learning games. More than 60% were keen to make use of M-learning in future, she further ascribed to psychological and cognitive advantage that involved improved self-confidence and esteem. MALL also help magnify reading habits as found by (Oyewusi and Ayanlola, 2014), according to him, mobile phone fosters reading habit, he also proposed that mobile phones better be designed with suitable supporting application in a way to promote reading habit of students. Hsu (2013) had stated in their study based on MALL approach applied on EFL learners that participants, despite of their cultural differences owing to different nationalities, they had acknowledged MALL application for EFL learners also manifested positive attitudes regarding constructivist elements attached to MALL. Gikas & Grant (2013) further listed certain advantages related to mobile learning that included communication, content collaboration, different ways of utilizing course contents and situated learning. Marked improvement in post-tests results had been pronounced by respondents in Martin and Ertzberger (2013). Additionally, Ally et al., (2007) described that 90% of their respondents appreciated the flexibility associated to M-learning.

Despite of all benefits drawn from M-learning; it has some limitations as well. As An and Williams (2010) noted that open mode of innovative mobile instruction is considered as something new and difficult by learners belonging to certain cultural backgrounds. Gikas and Grant (2013) also reported some challenges in their study, that includes tech-hating instructors, device related problems, distraction and both learner and device were the cause of these challenges. Other challenges enlisted by McQuiggan et al., (2015) were varied access to internet and mobile, progress and usage of monitor learning, attitude manifested by learner, kind of mobile device used in groups, and lack of physical attribution. As stated in Ozer and Kılıç (2018), technical problems do affect mobile activities such as battery timing (Milutinovic et al., 2015; Rogers, 2011), internet connectivity issues (Farley et al., 2015; Godwin-Jones, 2011; Hanafi and Samsudin, 2012), operating system or processor's speed (Farley et al., 2015; Rogers, 2011), earphone/microphone-based problems (Ally, 2013), mobile's navigation system (Conejar and Kim, 2014; Milutinovic et al., 2015; Rogers, 2011), addiction to smart phone usage (Griffiths, 2013; Hadlington, 2015; Hawi and Samaha, 2016; Ophir et al., 2009; Samaha and Hawi, 2016). In consideration to all presented literature, it is found that ESL related studies are quite rare in research as MALL area is flooded with EFL pivoted studies. Also, it is difficult to locate MALL related studies conducted in Pakistan. Furthermore, keeping in view the poor resources, poverty-stricken citizens, and demands of technology-based learning, Pakistan is at the nascent stages in this drive. Therefore, it is especially important to conduct studies based on mobile assisted language learning. This study is significant to report students' perceptions and attitudes towards MALL, under the four constructs such as use of MALL, its importance, benefits, and its challenges as noted by ESL students among University of Sargodha.

Material and Methods

This is a quantitative study, aimed at investigating the perceptions and usage related to MALL. These perceptions give a view of their attitudes towards benefits and challenges they have perceived concerning the use of mobile assisted language learning apps. The study involves 119 participants enrolled in BS and MPhil programs offered by the Department of English, University of Sargodha. 122 participants were randomly asked on WhatsApp and out of which 119 respondents willingly participated in this survey. In order to respond to the questionnaire successfully, all the participants were required to have at least 3G internet to record their responses online. To collect data, a quantitative questionnaire consisting of 28 questions based on 2- point scale representing polarity; 'Yes' and 'No' was used as a tool and the 28 questions in questions were effectively divided under four constructs i.e., use of mobile, its importance, benefits, and challenges related to MALL. The questionnaire was structured keeping in view the questionnaire used by Hoi and Mu (2021). In addition, a consent form was added at the top of questionnaire which ensured participants' confidentiality of their data. In order to maximize the response rate and also for the sake of convenience in data collection, a digital questionnaire was distributed through WhatsApp and responses were respectively collected and calculated.

Objectives

The aims of this study are to:

1. find out whether the students make use of MALL Applications.
2. figure out students' attitudes about the importance of MALL and mobile assisted language learning apps.
3. investigate students' perceptions about the benefits of MALL apps.
4. study the challenges faced by students while using MALL apps.

Research Questions

1. Whether or not the students of English language and literature program use mobile assisted language learning apps?
2. What is the students' stance about the importance of mobile assisted language learning apps?
3. What are the attitudes of students towards benefits of MALL?
4. What are students' perceptions related to challenges they experience while using mobile assisted language learning?

Results and Discussion

Data analysis

The study has been conducted to find attitudes and perceptions towards MALL. The questionnaire as presented in appendix-1 consists of 28 questions organized into four constructs i.e., use of mobile, its importance, benefits, and challenges the students are facing. These questions were employed to fulfil the aims as mentioned above.

Factor Analysis

For this purpose, the questions were grouped into question No. 1, 2, 3, 4, 5, 6, 7 (see appendix 1) under the 'construct 1: use' answer the research question 1 and thus cover the 1st objective. Questions 8, 9, 10 under 'construct 2: Importance' answer research question 2 and covers the 2nd objective respectively. The question no. 11, 12, 13, 14, 15, 16, 17 under the 'construct 3: Benefits' respond to research question three and thus justify the 3rd objective. In the same vein, questions from 18 to end comprising question no. 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28 under the 4th construct as 'construct 4: Challenges' attempt to answer research question 4 and fulfil the 4th objective. Construct 1 involves analyzing, data have been organized in four different tables specifically under the labels of four mentioned constructs.

Construct one involves information related to mobile assisted language learning activities, use of mobile phone for language learning, use of mobile phone app for pronunciation, use of dictionary app, use of mobile phone app to learn tenses and subject-verb agreements, use of internet search engines like google to learn tenses and grammar etc., permission to use mobile phone in formal classrooms for language learning. Construct two includes three questions to investigate perceptions about mobile as necessity for language student, mobile usage incorporation in formal classrooms, helpfulness of mobile apps in language learning. Similarly, construct three contains seven questions, that entail information about usefulness of

pronunciation app, quality dictionary apps for learning vocab, convenience to use MALL as compared CALL, time saving due to MALL apps, learner's autonomy as propagated by MALL, convenience to use MALL dictionary app as compared to hard form dictionary books, and usefulness of offline MALL apps. The last construct as the fourth one employs 11 questions relevant to challenges caused by online apps due to 24/7 internet access requirement, inauthenticity of most of MALL apps, availability of limited internet access, unaffordability of high quality network, limited functions and information in most of MALL apps, insufficiency of MALL apps due to poor feed and more dependence on internet search engines, not-user-friendly interface, unnecessary advertisements causing irritation and wasting time, not-tech-friendly attitude of users. The given tables 1, 2,3 deal with use, importance, benefits, and challenges respectively.

In table 1, frequencies, percentages of their responses for each question concerning the usage of MALL apps have been recorded along with average values of their answers related to 'Yes' and 'No' answers opted by students of English department from University of Sargodha. 76.88% is the average percentage of the students who recorded 'Yes' option and average percentage of students who chose option 'No' is 23.11%. The average value of number of respondents who responded is 118.71.

Table 1
Qualitative data representing MALL usage by English major students

No. of Question	Option Yes	Option No	Total Participants	Total Responses	% Yes	% No
Q# 1	116	3	119	119	97.5%	2.5%
Q# 2	96	23	119	119	80.7%	19.3%
Q# 3	86	33	119	119	72.3%	27.7%
Q# 4	99	20	119	119	83.2%	16.8%
Q# 5	83	34	119	117	70.9%	29.1%
Q# 6	101	18	119	119	84.9%	15.1%
Q# 7	58	61	119	119	48.7%	51.3%
Average:	91.28	27.42	119	118.71	76.88%	23.11%

In table 2, average values of answers recorded by students of department of English of University of Sargodha. Average percentage of students who recorded their answers as option 'Yes' is 62.26% while average percentage of number of students who opted for option 'No' is 37.73%. Average value of number of students who responded these questions is 118.66.

Table 2
Qualitative data representing students' perceptions towards significance of MALL

Question	Option Yes	Option No	No. Participants	Total Responses	% Yes	% No
Q# 8	102	17	119	119	85.7%	14.3%
Q# 9	87	32	119	119	73.1%	26.9%
Q# 10	33	85	119	118	28%	72%
Average:	74	44.66	119	118.66	62.26%	37.73%

Table 3 contains the average values of answers concerning benefits as recorded by students of English department from university of Sargodha. 87.97% is average percentage of number of students who recorded option 'Yes'. And average percentage for those who recorded option 'No' is 12.02. Average value of number of students who responded these questions is 118.85.

Table 3
Benefits experienced by students when using MALL apps

Question	Option Yes	Option No	Total Participants	Total Responses	% Yes	% No
Q# 11	92	27	119	119	77.3	22.7
Q# 12	112	7	119	119	94.1	5.9
Q# 13	89	30	119	119	74.8	25.2
Q# 14	111	8	119	119	93.3	6.7
Q# 15	102	16	119	118	86.4	13.6
Q#16	114	5	119	119	95.8	4.2
Q# 17	112	7	119	119	94.1	5.9
Average:	104.57	14.28	119	118.85	87.97	12.02

Table 4 records average values of answers recorded by students of English department from University of Sargodha. Average percentage for students who recorded option 'Yes' as answers is 62.77% and average percentage for those who recorded answer 'No' is 37.15%. Average value for number of students who responded is 118.54.

Challenges (Questions 18 to 28)

Table 4
Data representing challenges faced by students while using MALL apps

Question	Option Yes	Option No	Total Participants	Total Responses	% Yes	% No
Q# 18	103	16	119	119	86.6	13.4
Q# 19	71	46	119	117	60.7	39.3
Q# 20	58	61	119	119	48.7	51.3
Q# 21	50	69	119	119	42	58
Q# 22	74	43	119	117	63.2	36.8
Q# 23	58	60	119	118	49.2	50
Q# 24	105	14	119	119	88.2	11.8
Q# 25	77	42	119	119	64.7	35.3
Q# 26	100	19	119	119	84	16
Q# 27	93	25	119	119	78.8	21.2
Q# 28	29	90	119	119	24.4	75.6
Average:	74.36	44.24	119	118.54	62.7	37.15

Discussion

The instrument employed in the current study caters the four objectives i.e. use, significance, benefits, and challenges related to mobile assisted language learning

apps. Results covering these research objectives have been discussed. Answering the first research question, the result analysis shows that mobile phone has become the part of learning activities of more than 95% of students while about 80% of students. the same way, around 70% of students are keen enough to use pronunciations apps to improve their pronunciation whereas more 80% of students learn vocabulary through dictionary apps. One thing that is problematic to see is, around 48% students recorded that they are not encouraged by their teachers to use mobile phone for language purposes in classroom. Considering the previous studies reporting the positive impact of incorporation of MALL in traditional classroom method.

Considering the analysis of questions 8-10, it is found that, 85% of students are of the view that mobile phone has become the necessity for every language student. As, it is important to learn vocabulary and grammar. About 73% students favour the use of mobile for language learning purposes during formal classrooms. Moreover, 72% students deem mobile apps helpful for language learning. This gives us the insight that, most of the students comprehend the importance of MALL in the area of language learning, also they consider it a necessity for a language student as well as according to them, it should be part of formal classroom learning.

Analysis of questions 11-17 responding the 3rd research question reveals the students' perceptions related to benefits of MALL. The results of questions 11, 12 reveal the efficiency of pronunciation and dictionary app in improving pronunciation and vocabulary respectively. But the percentage of students who behold vocabulary apps as useful is greater than the percentage of students who are positive about usefulness of pronunciation app. This may be due to the smaller ratio of students to avail pronunciation app. A comparison has been drawn in questions 13 and 16, the results confirm that mobile assisted language learning apps is by no means more useful than using laptop for language learning. Moreover, the participants found mobile assisted dictionary app more convenient than consulting the hard form dictionary books. Additionally, data analysis asserts that use of mobile assisted language learning apps saves their time and makes them more independent and autonomous while learning language. Autonomy is one of the major perks gained from computer assisted and mobile assisted language learning. Answering the question 17, about 94% participants announced the adequacy of offline language learning apps, because it takes them to another level to ensure learner's autonomy. Offline apps not only save their time against odds of limited internet, but also help them whenever, wherever they are.

Questions 18-28 correspond to the 4th construct which caters to 4th research question. Results declare that students prefer the use offline language learning apps to online apps. About 60% of students perceive that most of mobile assisted language learning apps lack authenticity. unfortunately, 48% students still face learning barrier while using MALL due to limited internet access and poor signals, on the other hand, 42% of the students can't afford high quality internet package which disturbs their language learning through mobile phone. Further, 63% of students face difficulty in MALL because of limited functions, services and facilities offered by mobile assisted language learning apps. About 49% students feel that most of these mobile assisted language learning apps lack required knowledge. Because of this limitation more than 80% of students think that complete dependence on MALL apps is not possible, one

always will be compelled to rely on other internet search engines like google to gather elaborate knowledge. This states an unhappy reality of citizens cum students living in developing country like Pakistan. Although university of Sargodha has done a great deal to provide free internet services to its students and other faculty members, no doubt these efforts commendable in their own. 64% students think most of mobile assisted language learning apps are not user friendly and about 24% students are not fond of using mobile phone and other technology for language learning because of their own repulsion towards technological advancement, questions 26 and 27 unravel another big problem which the students face while using MALL apps is repeated popping up of numerous advertisements. More than 75% of students find this time and again appearance of advertisements irritating and causing waste of their time. Considering some of the serious concerns regarding challenges faced by students, it is advisable for government to take some solemn steps towards betterment of educational situation, accommodating the concerns of its students as well as to pay heed to virtual information resources, and make them sufficient and efficient in terms of knowledge, functions and services. Some policies should be devised to procure a nourishing mobile assisted educational environment which serve to address education related problems of students of this country.

Conclusion

With the invention of 3G and onwards generations, CALL has become one of the most popular language learning modes, but the smart phones have taken this mode to the next level. Even, in overcoming the restrictions of time and place, "MALL, unlike CALL, can offer the advantage of mobility, which enables seamless learning from inside to outside the classroom" (Hsu, 2013. pp. 197-213). Existing literature has further pointed out a great deal to EFL language learning incorporating MALL. Even, the studies relevant to MALL with ESL context are difficult to locate. There is still a great deal of research needed in MALL, as the new avenues continue to bear the scope in this field grows respectively. Also, less significant studies have been noticed to be contextualized in Pakistan, this appeals to a greater need for MALL related studies in Pakistani context. In response to this, the present study has attempted to investigate the attitudes and perceptions of graduate and undergraduate ESL students who are enrolled in BS and MPhil programs offered by the Department of English in University of Sargodha. The response rate calculated in the end was 97.54%. Results reveal that, most of language students were using MALL, and considered it a necessity for a language learner, and suggested to incorporate MALL in traditional classrooms. Moreover, majority of the students recorded positive feedback about mobile assisted language learning apps. However, MALL has posed certain challenges i.e. most of the students noted down were internet access demand of mobile assisted language learning apps which led them to prefer offline apps, on the other hand, repeated appearance of advertisements while using MALL apps lead to disturbance and time wastage. In the light of gathered results, Pakistan still needs to go a long way to integrate MALL with the traditional teaching and learning method. Though, it is playing a part in students' own learning activities, a uniform integration of MALL and formal teaching-learning mode is still a need unmet. Further, government will be convinced to allocate a certain part of budget to the use of technology in the department of education. It has a lot more to do in this CALL/MALL-traditional

classroom combo. Last but not the least, more authentic offline language learning apps are required and needed to be checked and approved by the competent authorities so that the weaknesses can be addressed effectively.

References

- Attewell, J. (2005). Mobile technologies and learning. *London: Learning and Skills Development Agency*, 2(4), 44-75.
- Ally, M., Schafer, S., Cheung, B., McGreal, R., & Tin, T. (2007, October). Use of mobile learning technology to train ESL adults. In *Proceedings of the 6th Annual International Conference on Mobile Learning* (pp. 7-12).
- An, Y. J., & Williams, K. (2010). Teaching with Web 2.0 technologies: Benefits, barriers and lessons learned. *International Journal of Instructional Technology and Distance Learning*, 7(3), 41-48.
- Ally, M. (2013). Mobile learning: From research to practice to impact education. *Learning and Teaching in Higher Education: Gulf Perspectives*, 10(2).
- Benson, P., & Voller, P. (2014). *Autonomy and independence in language learning*. Routledge.
- Conejar, R. J., & Kim, H. K. (2014). The effect of the future mobile learning: Current state and future opportunities. *International Journal of Software Engineering and Its Applications*, 8(8), 193-200.
- Farley, H., Murphy, A., Johnson, C., Carter, B., Lane, M., Midgley, W., & Koronios, A. (2015). How do students use their mobile devices to support learning? A case study from an Australian regional university. *Journal of Interactive Media in Education*, 2015(1) 5-13.
- Godwin-Jones, R. (2011). Mobile apps for language learning. *Language Learning & Technology*, 15(2), 2-11.
- Gikas, J., & Grant, M. M. (2013). Mobile computing devices in higher education: Student perspectives on learning with cellphones, smartphones & social media. *The Internet and Higher Education*, 19, 18-26.
- Griffiths, M. D. (2013). Adolescent mobile phone addiction: a cause for concern?. *Education and Health*, 31, 76-78.
- Hu, Z., & McGrath, I. (2011). Innovation in higher education in China: Are teachers ready to integrate ICT in English language teaching?. *Technology, pedagogy and education*, 20(1), 41-59.
- Hanafi, H. F., & Samsudin, K. (2012). Mobile learning environment system (MLES): the case of Android-based learning application on undergraduates' learning. *arXiv preprint arXiv:1204.1839*.
- Hsu, L. (2013). English as a foreign language learners' perception of mobile assisted language learning: a cross-national study. *Computer assisted language learning*, 26(3), 197-213. dent in Oyo State Nigeria. *School Libraries Worldwide* (20) 1, 116-127.

- Hadlington, L. J. (2015). Cognitive failures in daily life: Exploring the link with Internet addiction and problematic mobile phone use. *Computers in Human Behavior, 51*, 75-81.
- Hawi, N. S., & Samaha, M. (2016). To excel or not to excel: Strong evidence on the adverse effect of smartphone addiction on academic performance. *Computers & Education, 98*, 81-89.
- Hoi, V. N., & Mu, G. M. (2021). Perceived teacher support and students' acceptance of mobile-assisted language learning: Evidence from Vietnamese higher education context. *British Journal of Educational Technology, 52*(2), 879-898.
- Jin, W., & Zhirui, D. (2017). Research on mobile learning model of college English based on WeChat platform. *Eurasia Journal of Mathematics, Science and Technology Education, 13*(8), 5847-5853.
- Kukulka-Hulme, A. (2016). Mobile assistance in language learning: A critical appraisal. In Palalas, A. and Ally, M. (eds.), *The international handbook of mobile-assisted language learning*. Beijing: China Central Radio & TV University Press, 138-160.
- Lin, M. H., & Chen, H. G. (2017). A study of the effects of digital learning on learning motivation and learning outcome. *Eurasia Journal of Mathematics, Science and Technology Education, 13*(7), 3553-3564.
- Martin, F., & Ertzberger, J. (2013). Here and now mobile learning: An experimental study on the use of mobile technology. *Computers & Education, 68*, 76-85.
- McQuiggan, S., McQuiggan, J., Sabourin, J., & Kosturko, L. (2015). *Mobile learning: A handbook for developers, educators, and learners*. John Wiley & Sons.
- Milutinović, M., Labus, A., Stojiljković, V., Bogdanović, Z., & Despotović-Zrakić, M. (2015). Designing a mobile language learning system based on lightweight learning objects. *Multimedia Tools and Applications, 74*(3), 903-935.
- Nasr, H. A., & Abbas, A. A. (2018). Impact of mobile assisted language learning on learner autonomy in EFL reading context. *Journal of Language and Education, 4*(2) 14
- Ophir, E., Nass, C., & Wagner, A. D. (2009). Cognitive control in media multitaskers. *Proceedings of the National Academy of Sciences, 106*(37), 15583-15587.
- Oyewusi, F., & Ayanlola, A. O. (2014). Effect of Mobile Phone Use on Reading Habits of Private Secondary School Students in Oyo State, Nigeria. *School Libraries Worldwide, 20*(1).
- Ozer, O., & Kilic, F. (2017). Mobil Öğrenme Araçlarını Kabul Ölçeği: Geçerlik-güvenirlilik Çalışması. *Electronic Turkish Studies, 12*(25)

- Pegrum, M., Oakley, G., & Faulkner, R. (2013). Schools going mobile: A study of the adoption of mobile handheld technologies in Western Australian independent schools. *Australasian Journal of Educational Technology*, 29(1).
- Rogers, K. D. (2011). *Mobile learning devices*. Solution Tree Press.
- Samaha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in human behavior*, 57, 321-325.
- Sato, T., Murase, F., & Burden, T. (2015). *Is Mobile-Assisted Language Learning Really Useful? An Examination of Recall Automatization and Learner Autonomy*. Research-publishing.net.
- Sung, Y. T., Chang, K. E., & Liu, T. C. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis. *Computers & Education*, 94, 252-275.
- Soruç, A., & Tekin, B. (2017). Vocabulary learning through data-driven learning in an English as a second language setting. *Educational Sciences: Theory & Practice*, 17(6).
- Vázquez-Cano, E. (2014). Mobile distance learning with smartphones and apps in higher education. *Educational Sciences: Theory and Practice*, 14(4), 1505-1520.