

Mobile Apps Integration in Project-Based Learning: An Exploratory Inquiry

دمج تطبيقات الجوال في التعلّم القائم على المشاريع: استقصاء

استكشافي

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Abstract

Project-Based Learning is an interdisciplinary approach that upholds authentic tasks learners do to circumvent real-life matters by getting them integrated in long term projects set around challenges and snags they may run into their state of affairs. In addition, recent generations were born in a digital era where cellphones become an integral part of their daily habits; hence, they master the use of copious mobile devices and applications as well as they have a good knowledge of technological skills. Therefore, in this study, attitudes on the use of mobile apps as a motivating tool in project-based learning, particularly project presentation, are investigated from the viewpoints of secondary school teachers and learners. At Ibn Khaldoun High School (Sétif, Algeria), 266 first-year secondary school pupils and their teachers (N=3) took part in this exploratory study. Students found it tedious and uninteresting to present a project in class, according to preliminary data. Hence, investigating this issue might improve academic upshots. A 4-point Likert scale questionnaire, for both teachers and students, was the data gathering tool employed in this study. The Statistical Package for Social Sciences (SPSS) was then used to analyse the collected data. According to the study's findings, there is a noticeable positive attitude among teachers and learners regarding the use of mobile apps as a motivating instrument during project presentations. About the latter, educators and learners alike demonstrate their appreciation for and readiness to incorporate mobile learning technologies into project presentations, in order to boost motivation, squelch boredom, and preserve classroom interaction.

Keywords: Mobile Apps, Project-Based Learning, Mobile Learning, Motivation.

التعلم القائم على المشاريع هو نهج متعدد التخصصات يدعم المهام الأصيلة التي يقوم بها المتعلمون لتخطي شؤون الحياة الواقعية من خلال دمجهم في مشاريع طويلة الأمد تتمحور حول التحديات والعقبات التي قد يواجهونها. بالإضافة إلى ذلك، وُلدت الأجيال الحديثة في عصر رقمي أصبحت فيه الهواتف المحمولة جزءاً لا يتجزأ من عاداتهم اليومية؛ ومن ثم فهم يتقنون استخدام الأجهزة والتطبيقات المحمولة بكثرة بالإضافة إلى معرفتهم الجيدة بالمهارات التكنولوجية. لذلك، يتم في هذه الدراسة دراسة المواقف حول استخدام تطبيقات الهاتف المحمول كأداة تحفيزية في التعلم القائم على المشاريع، وخاصة عرض المشاريع، من وجهة نظر معلمي المدارس الثانوية والمتعلمين. في ثانوية ابن خلدون (سطيف، الجزائر)، شارك في هذه الدراسة الاستطلاعية ٢٦٦ تلميذاً من تلاميذ السنة الأولى ثانوي ومعلميهم (العدد = ٣). ووفقاً للبيانات الأولية، وجد الطلاب أن تقديم مشروع في الصف أمراً مملًا وغير مثير للاهتمام، ووفقاً للبيانات الأولية. وبالتالي، قد يؤدي التحقيق في هذه المشكلة إلى تحسين النتائج الأكاديمية. كان استبيان مقياس ليكرت المكون من ٤ نقاط، لكل من المعلمين والطلاب، هو أداة جمع البيانات المستخدمة في هذه الدراسة. ثم استخدمت الحزمة الإحصائية للعلوم الاجتماعية (SPSS) لتحليل البيانات التي تم جمعها. ووفقاً للنتائج التي توصلت إليها الدراسة، هناك موقف إيجابي ملحوظ بين المعلمين والمتعلمين فيما يتعلق باستخدام تطبيقات الأجهزة المحمولة كأداة تحفيزية خلال العروض التقديمية للمشاريع. فيما يتعلق بهذا الأخير، يُظهر المعلمون والمتعلمون على حد سواء تقديرهم واستعدادهم لدمج تقنيات التعلم عبر الأجهزة المحمولة في العروض التقديمية للمشاريع، من أجل تعزيز التحفيز والقضاء على الملل والحفاظ على التفاعل داخل الفصل الدراسي.

الكلمات المفتاحية: تطبيقات الهاتف المحمول، التعلم القائم على المشاريع، التعلم عبر الهاتف

المحمول، التحفيز.

Introduction



In modern teaching methods, students are seen as active participants in the learning process. These teaching strategies are limited to techniques that shift the focus of teaching from the teacher to the students, who are then responsible for what they learn and improve their language skills and understanding (Jones, 2007). This is primarily achieved through the implementation of Project-Based Learning (PBL), which is defined as a comprehensive teaching approach designed to capture learners' attention and curiosity, to take on challenges, to investigate authentic issues or to solve real-world problems (Blumenfeld, Soloway, Marks, Krajcit, Guzdial, & Palincsar, 1991). Therefore, learners play a vital role in project-based learning as they get the opportunity to delve deeper into the realization of their project paper by going through different stages and complex tasks including planning the task, choosing a topic, collecting data, dividing responsibilities, presenting the project and evaluation (Thomas & Mergendoller, 2000). At each stage, learners acquire new cognitive skills such as logical thinking, problem solving, decision-making and independence, and improve their language skills and strategies including speaking, reading, listening and writing. The distinctive features of the project-based learning approach seem to be reflected in the project presentation, which illustrates the extent to which learners have acquired language skills and a body of knowledge. However, a lack of motivation, a lack of confidence, and a growing sense of boredom whenever asked to present a project in class are the main reasons why project presentation has become a concern for both teachers and students. As students grow into "digital natives," this issue forces the use of technological tools to save time and effort (Prensky, 2001). Put another way, students nowadays were raised in a digital age, and since mobile devices are a big part of their everyday lives, they are proficient with a variety of mobile devices and apps and possess a solid understanding of technological skills. As a result, incorporating mobile learning into EFL lessons has become essential to meeting both teacher and student expectations.

Due to the accessibility and suitability of mobile devices for studying and creating educational materials without regard to time or location, mobile learning has emerged as one of the most prominent



educational tools in the current digital era. As a result, cell phone use is so common that it is impossible to avoid entering the educational sector. In addition to being restricted to mobile devices, its use goes beyond the use of updated mobile applications, which have demonstrated efficacy in enhancing learning abilities and fostering an interactive learning environment (Gangaiamaran & Pasupathi, 2017). Then, a mobile application, or app, is a software program or computer program made to run on a portable device, like a watch, tablet, or phone (Rupnik & Krisper, 2009). Numerous studies have shown that incorporating these applications into EFL contexts improves language communication and accelerates the acquisition of language knowledge and skills. In their mixed-method study, Liu and He (2014) demonstrate how integrating mobile apps improved speaking and listening abilities. According to a study by Basal, Yilmaz, Tanriverdi, and Sari (2016), students' use of mobile apps greatly increased their understanding of idioms. In their quasi-experimental study, Al-Wasy and Mahdi (2016) demonstrate that the incorporation of mobile applications improves students' self-editing. Additional research provided clear proof that using mobile apps to improve student motivation and sustain classroom engagement is beneficial. In their pilot study, Camilleri and Camilleri (2019) find a strong correlation between students' intrinsic motivation and how useful they believe mobile apps to be.

Despite the fact that numerous studies have been carried out to demonstrate the effectiveness of mobile app implementation in EFL contexts and their ability to improve learners' various language skills, little research has been done on the significance of mobile app integration in enhancing learners' motivation and sustaining classroom interaction in project-based learning, particularly project presentation.

Theoretical Underpinnings

Mobile Apps as a Motivational Tool in PBL

Numerous studies on the advantages of using mobile apps in EFL classes have demonstrated that these apps are employed as motivational tools to establish an engaging learning environment suitable for language acquisition and improvement. According to a survey conducted by Chiang, Yang, and Hwang (2014) on the impact of a mobile learning system on the motivation and learning outcomes of 57 fourth graders at an elementary school in northern Taiwan,



mobile applications are useful resources for enhancing students' learning outcomes as well as their motivation, focus, and self-assurance.

Another replicated study was carried out by Valentin, Mateo, Tablas, Perez, Lopez, and Garcia (2013) with 543 full-time first and second year undergraduate students from various degrees at the University of Salamanca. The study was about the relationship between different uses of mobile Apps and learning outcomes and motivation. The findings stated clearly the significant improvement on both learning achievements and motivation due mainly to the use of these Apps. Other studies tried to find a link between Mobile Apps and intrinsic motivation. An experimental study by Jenö, Adachi, Grytnes, Vandvik, and Deci, (2019) was conducted with 58 second-year undergraduate students in Biology at the university of Bergen, Norway about the effects of M-learning on motivation, learning achievement and well-being. The results of this study found that the use of Mobile Apps produced higher levels of students' competence, autonomy and intrinsic motivation. Demire and Akpınar (2018) carry a quasi-experimental design with 41 second-grade pre-service teachers who voluntarily participated in the research and study in Computer Education and Instructional Technology Department in Dokuz Eylül University, Turkey to investigate the effects of mobile learning applications on undergraduate students' academic achievement, attitudes toward mobile learning and animation development levels. The results showed that Mobile learning has significantly positive effect on academic achievement, students have positive attitudes toward mobile learning and mobile technologies positively affect performance of students. In the same vein, Dias and Victor (2017) stated that mobile devices integration had potential benefits and challenges on learning and teaching; teachers are optimistic about the use and influence of these devices on students' motivation, communication, collaboration and ability to research. On the other hand, Camilleri and Camilleri (2019) conducted a pilot study among 148 grade-3 primary pupils in a small European state about the pupils' readiness to learn via mobile learning apps including game play. Significantly, the findings showed that there is a strong correlation



between the pupils' perceived usefulness of Mobile Apps and their intrinsic motivation. So, motivation plays an initiative role to augment EFL learners' academic achievement that results in successful language learning (Masgoret & Gardner, 2003 (as cited in Alhinty, 2016). There have been many studies and theories trying to explain what meant by motivation and to distinguish between intrinsic motivation and extrinsic motivation by highlighting the aspects and the benefits of each especially in education.

Owing to the importance of M-learning integration in the Algerian EFL classrooms, several studies have been conducted to prove the teaching efficacy of M-learning implementation to improve the language skills and knowledge. An exploratory study conducted by Benahcene and Chenih (2019) with 72 Master one students aged between 22 to 24 years old at the English Department of Mohamed Boudiaf University, M'sila to investigate the students' attitudes towards the use of mobile learning apps in learning English vocabulary and to explore the possible connection between the integration of mobile learning apps in EFL classes and vocabulary acquisition. The results of this research showed mainly that the implementation of mobile learning apps was effective not only to enhance the four language skills but also to improve the students' vocabulary acquisition. Another experimental study carried out by Laieb and Cherbal (2020) with 20 second year Foreign Languages learners at Ahmed Francis High School, Jijel to explore the effectiveness of the implementation of Pecha Kucha presentations in ameliorating learners' oral proficiency. The findings of this study revealed that the integration of Pecha Kucha format in learners' oral presentations enhances their speaking performance. Bentaleb (2021) carries out another exploratory investigation about the role of TED (Technology, Entertainment and Design) Talks videos on developing EFL students' oral presentation skills with 80 second-year EFL students at Mohamed Lamine Debaghine -Sétif 2- university. The results found that TED Talks videos can be beneficial in helping students develop their oral presentation skills, and that both students and teachers have positive attitudes towards the use of this tool to develop these skills. Despite the several studies conducted to show the mobile learning applications' efficacy in improving the learning basic skills, there remains little attention paid to the connection between the



implementation of mobile learning applications as a motivational tool and project based learning in terms of driving the learners to organize, edit and present the projects successfully.

Statement of the Problem

Project-Based Learning is an interdisciplinary approach that advocates for authentic tasks the learners do to overcome real-life issues by getting them integrated in long term projects set around challenges and problems they may encounter in their real life situations (Markham, 2011). The implementation of PBL in EFL classes ensures and facilitates the acquisition of the required language skills including speaking, listening, reading and writing as well as language components such as grammar and vocabulary that are best manifested through project presentation that is considered to be the most important stage. However, to boost and maintain learners' motivation as well as eliminate boredom and raise classroom interaction during project presentations are the main concerns of teachers. Based on the preliminary classroom observations and Focus Group Discussion (FGD) held with first year secondary school learners at Ibn Khaldoun high school in Setif district, Algeria, learners lack motivation and feel boredom whenever asked to present their projects in class. In response to this problem, this study attempts to investigate teachers' as well as learners' attitudes towards the implementation of Mobile Apps as a motivational tool in Project-Based Learning primarily project presentation.

Aims of the Study

This study aims at scrutinising secondary school teachers' and learners' attitudes towards the integration of Mobile Apps as a motivational tool in Project-Based Learning particularly, project presentation.

Methodology

Research Questions

This research attempts to answer these questions:

What are teachers' and their learners' attitudes towards the use of Mobile Apps as a motivational tool in project presentation?

What effects do Mobile Apps have on motivating students for their project performance?



In what ways does the integration of mobile apps affect learners' oral presentation skills?

Significance of the Study

The significance of this study lies in the fact that it offers some important insights into the implementation of Mobile Apps to motivate learners edit and perform their projects successfully as well as it helps teachers integrate such current technology to create an enthusiastic atmosphere adequate for learning and save time and efforts.

Setting and Participants

This study took place in Ibn Khaldoun High School in Setif district during the academic year 2023/2024. The research was carried out with secondary school teachers of English and all first year secondary school learners from both scientific and literary streams.

Participants' Profile

Teachers' profile. This investigation deals with 3 secondary school EFL teachers aged between 41 and 54 years old and having not less than 8 years of experience in teaching. The main purpose of dealing with secondary school EFL teachers is to investigate their attitudes towards the use of Mobile Apps as a motivational tool in project presentation as well as to examine their readiness towards the implementation of such technology to create a motivational learning atmosphere adequate for acquiring language skills and knowledge.

Learners' profile. The target population in this study is first year secondary school learners aged between 14 to 19 years old with an estimated number of 266 from literary and scientific streams distributed among 11 groups. Due to Covid 19 pandemic, the learners are divided into groups containing 25 maximum in each on the basis of their annual average and academic achievement right from the beginning of the year and are assigned to different EFL teachers who take charge to teach them throughout the entire school year. Since it is impossible to deal with the whole population, and as an EFL teacher who is responsible for four groups: two literary groups and two scientific groups, the researcher selected 1As3 group B as a sample of this research. The rationale to select such group is that all participants had smart phones. The sampling technique used is simple random sampling since all subjects have equal chances to take part in the study so as to avoid bias



(Taherdoost, 2016).

Research Instrumentation of the Main Study

The present study tends to explore secondary school teachers' and learners' attitudes towards the integration of Mobile Apps as a motivational tool in Project-Based Learning, especially project presentation following an exploratory research design and a mixed method approach where different quantitative and qualitative tools were used for data collection.

Likert scale questionnaire. The study consists of two main paper-based likert scale questionnaires: one for teachers and the second for learners. The rationale behind selecting such research instrument is that likert scale questionnaire is up to standards for assessing people's attitudes, beliefs, perceptions, opinions and feelings towards a particular topic; researchers often use this psychometric scale to understand the views and perspectives and to gain various degrees of responses regarding a given subject (Joshi, Kale, & Pal, 2015). In regards to the rationale of using paper-based mode of a questionnaire administration is due mainly to the fact that online surveys are much less likely to generate response rates as high as surveys administered on paper (Nulty, 2008) in addition to the difficulty that secondary school learners may encounter in responding to online questionnaire due to their unfamiliarity with this questionnaire administration mode. Therefore, the research results will be in danger of bias and ambiguity. The likert scale questionnaire is divided into three main axes the first one is about the attitudes towards Project-Based Learning, the second axis is devoted to responses regarding Mobile Apps while the last axis deals with attitudes towards the integration of Mobile Apps in Project-Based Learning. In this four point likert scale questionnaire, the participants respond to the statements by choosing the options: agree, strongly agree, disagree, or strongly disagree. The rationale to select this type of 4-point likert scale for agreement is to get specific responses (Leung, 2011).

Data Analysis Procedures

The quantitative data of the likert scale questionnaire were analysed by the utilisation of the Statistical Package for Social Sciences program (SPSS). Accordingly, Cronbach Alpha scale reliability coefficient or the internal consistency was calculated.

Analysis of Main Study Tools (Analysis of the Main Items)

Learners' Likert Scale Questionnaire



Internal Validity

The questionnaire scores were used to calculate the internal validity of the tool by finding a Spearman Correlation between dimension and overall score and ttable 1 shows this:

Table 1

The Correlation Coefficient of the Study Tool

*Significant at the p =0.01 level

Table

1 shows that the correlation coefficient of the study tool is statistically significant at

significance	correlation	Sections
0.01**	0.610	Project-Based Learning
0.01**	0.654	Mobile Apps
0.01**	0.747	The integration of Mobile Apps in Project-Based Learning
0.01**	0.745	internal validity of the Tool

the function level (0.01) where the instrument's validation coefficient is 0.74 and therefore the validity coefficient is high and appropriate for the purposes of the study.

Reliability

The study found a persistence coefficient using Cronbach's Alpha coefficient and the following result is illustrated in Table 2 below:

Table 2

Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
0.794	15

Table 2

for Cronbach's Alpha demonstrates that the constant factor was high at 0.79, which is high and suitable for study purposes.



Axis 1: Project-Based Learning.

Table 3

Rank	Response Level	Percent	Mean	Project-Based Learning
1	Strongly agree	83.74	3.35	I understand better through doing projects.
2	Agree	80.11	3.20	I appreciate learning by getting involved in project workshops because it facilitates acquiring language forms & skills.
3	Agree	72.04	2.88	I feel bored whenever I am asked to present a project in class.
4	Disagree	57.39	2.30	I feel enthusiastic and self confident to present my project.
	Agree	73.32	2.93	Total Degrees

Learners' Responses to Project-Based Learning Items

To begin with, the results show that the majority of participants (83.74%) strongly agreed that they understood better through getting engaged in doing projects with a mean of 3.35.

Concerning the second item, the findings reveal that 80.11% of the participants agreed that they appreciated learning through projects because it facilitates acquiring language forms and skills with a mean of 3.20.

In response to item3, the results display that 72.04% of the learners with a mean of 2.88 agreed that they feel bored whenever asked to present a project in class. This in turn proves that this study is worthy to be conducted because it illustrated that the research problem is really rooted in the research population.

Regarding item 4, 57.39% of the total participants with a mean of 2.30 disagreed about the statement that they feel motivated and self-confident to present their projects. Respectively, this gives strong evidence that this research deserves to be carried out since it is obvious that the problem is rooted within the research population.



Axis 2: Mobile Apps Items

Table 4

Learners Responses to Mobile Apps Items

Rank	Response Level	Percent	Mean	Mobile Apps
1	Strongly agree	88.58	3.54	I like the use of Mobile Apps in class.
5	Disagree	46.77	1.87	It is boring to learn via Mobile Apps.
2	Strongly agree	87.37	3.49	It is easy to use and install Mobile Apps.
3	Strongly agree	83.24	3.33	The use of Mobile Apps helps me enhancing my speaking skill
4	Strongly agree	83.33	3.33	The use of Mobile Apps creates an enthusiastic atmosphere suitable for learning.
	Agree	77.85	3.11	Total Degrees

From Table 4 about pupils' responses to the items (Axis) of Mobile Apps, it is clear that it is at the level of Agree, with the arithmetic average of the Total Degrees 3.11 of an estimated percentage of 77.85 %.

The results illustrate that 88.58 % of the learners with a mean of 3.54 strongly agreed that they like the use of technology in class. Such results may reflect that to days' learners are really sticky to the use of technology and mobile devices in learning.

In the same vein, 46.77 % of the learners with a mean of 1.87 disagreed on the statement that learning through Mobile Apps is boring. This makes it clear that learners are more motivated to learn by the use of mobile devices.

To elaborate on the item above, the results reveal that 87.37 % of the participants indicating a mean score of 3.33 strongly agreed that using and installing Mobile Apps is an easy matter. Accordingly, such a result implies that the participants master the use of mobile devices and their applications as it implies that they are digitally literate.



Therefore, it is seen that learners have significantly high attitude scores toward the use of Mobile Apps.

An interesting result on investigating learners' response to item 4 manifests that 83.24 % of the participants with a mean score of 3.33 strongly agree on the fact that the utilisation of Mobile Apps enhances their speaking skills. In turn, this indicates that the utilisation of Mobile Apps paves the way for the learners to be ready for the project presentation stage and build their self-confidence as they improve their speaking skill since it is a necessary one in project performance.

With respect to investigating learners' attitudes towards the role of Mobile Apps to create a motivating learning environment, 83.33 % of the subjects with a mean score of 3.33 strongly agree. Such a positive response offers decisive evidence that the utilization of Mobile Apps is beneficial in motivating learners and creates an adequate environment for learning.

Axis 3: The Integration of Mobile Apps in Project-Based Learning

Table 5

The Integration of Mobile Apps in Project-Based Learning

Rank	Response Level	Percent	Mean	The integration of Mobile Apps in Project-Based Learning
3	Strongly agree	83.20	3.33	The use of Mobile Apps makes it easier to present my project.
1	Strongly agree	83.74	3.35	The use of Mobile Apps increases my motivation and self-confidence.
2	Strongly agree	83.60	3.34	Using Mobile Apps encourages me to organize my work and present it appropriately.
4	Agree	81.18	3.25	I can easily use Mobile Apps to edit and present my project.
6	Disagree	51.34	2.05	I feel bored when I use Mobile Apps to present my project.
5	Agree	69.86	2.79	I often use Mobile Apps to



			present my project.
Agree	75.48	3.02	Total Degrees

The results reveal that 83.20 % of the informants with a mean score of 3.33 strongly agreed on the statement that the integration of Mobile Apps in presenting the project makes it easier. A result that may have a strong proof that mobile learning is really beneficial in EFL classes since it saves time and effort.

Concerning the use of Mobile Apps to elevate learners' motivation and maintain their self-confidence while presenting their projects, the findings show that 83.74 % of the participants with a mean score of 3.35 strongly agreed. This in turn indicates that now days' learners account more on Mobile learning and have positive attitudes towards its implementation in learning context due to its role in increasing motivation and building self-confidence.

In the same respect, in response to the item above, 83.60 % of the learners with a mean score of 3.34 strongly agreed that the integration of Mobile Apps in project presentation encourages them to organise better their work and present it appropriately. A result that may reflect that learners have positive views about Mobile Apps implementation since it is fruitful to an extent that it facilitates for the learners to organize their work and accomplish their projects.

A significant result about item4 revealed that 81.18 % of the subjects with a mean score of 3.25 strongly agreed on the fact that they can easily use Mobile Apps to edit and present their projects; a result that may indicate that Mobile Apps are at the reach of every one and are easily accessible. In other words, Mobile Apps are characterised by their simplicity and flexibility that enable learners to use them easily anytime and anywhere.

In investigating learners' attitudes towards item5, the results obtained from table 8 and figure5 show that 51.34 % of the participants with a mean score of 2.05 disagreed on the idea that they feel bored when they use Mobile Apps to present their projects. This may reflect that more than the half of the research population has positive perceptions towards the use of Mobile Apps in project presentation. Respectively, many participants have optimistic views towards the implementation of Mobile Apps as they consider them as motivating



tool that encourages them to present their projects.

The study findings display that 69.86 % of the learners with a mean score of 2.79 agreed that they often use Mobile Apps to present their projects. Significantly, this may reflect that learners are more driven to the use of Mobile Apps due to many reasons among which the role the Mobile Apps play to facilitate learning, their availability and simplicity that saves learners' time and effort.

Teachers' Likert Scale Questionnaire

Internal Validity

The questionnaire scores were used to calculate the internal validity of the tool by finding a Spearman Correlation between dimension and overall score and table 6 shows this:

Table 6
The Correlation Coefficient of the Study Tool

significance	correlation	Sections
0.01**	0.866	Project-Based Learning
0.01**	0.921	Mobile Apps
0.01**	0.866	The integration of Mobile Apps in Project-Based Learning
0.01**	0.792	internal validity of the Tool

***Significant at the p =0.01 level**

Table

6 shows that the correlation coefficient of the study tool is statistically significant at the function level (0.01) where the instrument's validation coefficient is 0.70, therefore; the validity coefficient is high and appropriate for the purposes of the study.

Reliability

The study found a persistence coefficient using Cronbach's Alpha coefficient and the following result is illustrated in Table 7:

Table 7
Reliability Statistics

Table	0.70	Reliability Statistics	17
		Cronbach's Alpha	N of Items



7 for Cronbach's Alpha shows that the constant factor was high at 0.70, which

is high and suitable for study purposes.

Axis 1: Project-Based Learning

Table 8

Teachers' Responses to Project-Based Learning Items

Ran k	Respon se Level	Percent	Mea n	Project-Based Learning
1.5	Strongl y agree	83.33	3.33	Learners understand better through doing projects.
1.5	Strongl y agree	83.33	3.33	Learners show interests in doing projects because it makes it easier to acquiring language elements.
3	Agree	66.67	2.67	Learners feel bored whenever they are asked to present a project in class.
4	Disagre e	58.33	2.33	Learners feel enthusiastic and self confident to present their projects.
	Agree	72.92	2.92	Total Degrees

It is clearly stated in Table 8 above regarding the teachers' responses to the items (Axis) of the Project-Based Learning that it is at the Agree level, where the arithmetic mean of the total degree is 2.92, or at the rate of 72.92 %.

As shown in the table above, 83.33 % of the teachers with a mean score of 3.33 strongly agreed that students understand better through doing projects.

83.33 % of the participants with a mean score of 3.33 strongly agreed that students show interest in doing projects because it is easier to acquiring language forms and skills.

Concerning responses to item 3, the study results display that 66.67 % of the teachers with a mean score of 2.67 agreed that learners feel bored whenever they are asked to present a project in class. This interprets the teachers' suffering with learners' boredom to present their projects and the challenges they encounter to motivate learners for better academic achievements. Respectively, such a result may reflect the fact that this study deserves to be conducted since it proved that the problem is rooted within the research population.



58.33 % of the participants with a mean score of 2.33 disagreed that learners feel enthusiastic and self-confident to present their projects. This result may state that teachers are in front of challenges to overcome learners' feeling of boredom and raise their self-confidence by motivating them and encourage them to present their projects.

Axis 2: Mobile Apps

Table 9

Teachers' Attitudes towards Mobile Apps Items

Rank	Response Level	Percent	Mean	Mobile Apps
3	Strongly agree	83.33	3.33	I use technology in class to motivate my learners.
6.5	Agree	66.67	2.67	Mobile Apps facilitate the teaching and the learning processes.
5	Agree	75.00	3.00	It is easy to use and install Mobile Apps.
6.5	Agree	66.67	2.67	The use of Mobile Apps helps my learners to enhance their speaking skill.
3	Strongly agree	83.33	3.33	The use of Mobile Apps creates an enthusiastic atmosphere suitable for teaching.
3	Strongly agree	83.33	3.33	The use of Mobile Apps saves time and efforts in class.
1	Strongly agree	91.67	3.67	Using Mobile Apps helps teachers design their own teaching materials suitable for their learners' level.
	Agree	78.57	3.14	Total Degrees

In investigating teachers' responses to Mobile Apps Items, the results clearly stated that it was at the Agree level, where the arithmetic mean of the total degree was 3.14, or at the rate of 78.57 %.

As far as teachers' responses to item 1 are concerned, results from Table 9 showed that 83.33 % of the subjects with a mean score of 3.33 strongly agreed that they use technology in class to motivate their learners. This implies that implementing technology in EFL contexts is inevitable due to its easy access and its availability. On the other hand, the findings may reflect the fact that teachers' main concern is how to



deal with challenges related to raising learners’ motivation by integrating technology.

In investigating teachers’ attitudes to item 2, the study findings displayed that 66.67 % of the informants with a mean score of 2.67 agreed that Mobile Apps facilitate the teaching learning processes. This in turn may imply that teachers had significantly high attitude scores towards Mobile Learning.

Teachers’ responses to item 3 revealed that 75.00 % of the participants with a mean score of 3.00 agreed that Mobile Apps are easy to be accessed and installed on phone devices. Such a significant result may indicate that Mobile learning is ubiquitous that makes it easy to be accessed anywhere anytime and easily installed.

The majority of participants (83.33 %) with a mean score of 3.33 strongly agreed that the use of Mobile Apps in EFL contexts creates a non-threatening atmosphere adequate for learning. A result that may reflect the pedagogical value Mobile Apps have to settle a motivating environment suitable for learning as well as to enhance learners’ self-confidence while presenting their projects.

The mean score of the participants' responses towards item 6 was 3.33. On that account, the majority of the teachers (83.33 %) strongly agreed that the use of Mobile Apps in EFL classrooms saves time and effort. Again, such a result brings about a decisive proof that Mobile Apps utilization is really beneficial as it facilitates the teaching learning process.

Almost all teachers (91.67 %) with a mean score of 3.67 strongly agreed that the use of Mobile Apps helps them to design their own teaching materials that fit the learners’ level and meet their needs. Significantly, this result reflects that teachers are more aware about the importance of Mobile Apps in devising teaching materials which motivate learners and meet their expectations and needs.

Axis 3: The Integration of Mobile Apps in Project-Based Learning

Table 10

Teachers’ Attitudes towards the Integration of Mobile Apps in PBL

Rank	Strongly agree Level	100 Percent	4 Mean	The use of Mobile Apps makes it easier for my learners to present their Project-Based Learning projects.
1.5				



1.5	Strongly agree	100	4	The use of Mobile Apps increases my learners' motivation and self-confidence.
5	Agree	75	3	Using Mobile Apps encourages my learners to organize their work and present it appropriately.
3.5	Strongly agree	91.67	3.67	I encourage my learners to use Mobile Apps to increase class interaction during project presentation.
6	Agree	66.67	2.67	Using Mobile Apps is the best way to motivate learners to design and present their projects.
3.5	Strongly agree	91.67	3.67	The use of Mobile Apps increases learners' self-confidence and kills boredom.
Strongly agree		87.5	3.50	Total Degrees

Concerning teachers' responses to the Integration of Mobile Apps in Project-Based Learning Items, it is obvious from the results obtained in Table 10 that it was at the Strongly agree level, where the arithmetic mean of the total degree was 3.50 with an estimated percentage of 87.5%.

There was a consensus of 100% with a mean score of 4 that the use of Mobile Apps facilitates for the learners their projects presentation. This significant result reflects Mobile Apps efficacy in accompanying the learners in editing and presenting their projects successfully.

Likely, the study results for item 2 revealed that 100 % of the participants with a mean score of 4 strongly agreed that the utilisation of Mobile Apps raises the learners' motivation and build their self-confidence. This in turn proves the effectiveness of the Mobile Apps integration as a motivational tool that raises classroom interaction and maintains learners' self-confidence.



In investigating responses to item 3, the results demonstrated that 75 % of the subjects with a mean score of 3 agreed that the utilisation of Mobile Apps encourages learners organize, edit and present their projects appropriately. Such a result may bring about strong evidence that Mobile Apps implementation is beneficial in EFL Project-Based Learning particularly in project work presentation stage where learners find it easy to organize their work and present it adequately.

The majority of teachers (91.67 %) encouraged their learners to use Mobile Apps in order to raise classroom interaction and maintain learners' attention during project presentation. A mean score of 3.67 may reflect the fact that teachers have positive attitudes and high expectations towards the integration of Mobile Apps and believe that they are beneficial to the extent that they encourage their learners to use them for their project presentation.

Regarding responses to item 5, the results displayed that 66.67 % of the informants with a mean score of 2.67 agreed that the implementation of Mobile Apps is the best way to raise learners' motivation to design and present their projects. Such a result may indicate the high expectations the teachers have towards the use of Mobile apps and their readiness to implement them in EFL context to solve problems related to learners' motivation during project presentation. On the other hand, this result may manifest that teachers rely on the use of technology in their classes since learners are often driven to the use of Mobile devices and are digitally literate. This in turn makes it easier for teachers to overcome issues related to learners' motivation.

Results related to item 6 revealed that most teachers with 91.67 % strongly agreed that the use of Mobile Apps increases self-confidence and kills boredom. A mean score of 3.67 may bring about decisive proof that teachers have significantly high attitude score towards the use of Mobile Apps as a motivational tool that kills learners' boredom and raises their self-confidence.



Table 11
Comparing Teachers' Learners' Responses

Rank	Student			Comparing responses	Teacher			
	Response Level	%	Mean		Mean	%	Response Level	Rank
3	Agree	73.32	2.93	Axis 1	2.92	72.92	Agree	3
1	Agree	77.85	3.11	Axis 2	3.14	78.57	Agree	2
2	Agree	75.48	3.02	Axis 3	3.50	87.5	Strongly agree	1
	Agree	75.5	3.02	Total Degrees	3.18	79.5	Agree	

The research findings showed that both teachers and learners have positive attitudes towards the implementation of Mobile Apps in project presentation and express their appreciation as well as their readiness to use Mobile Apps to deal with problems related to motivation and maintain classroom interaction.

Data Interpretations and Discussions Learners' Attitudes towards the integration of mobile apps in project presentation as a motivational tool

The results obtained from the learners' questionnaire revealed that the majority of learners have high positive attitudes towards Mobile Apps integration as a motivational tool in project presentation. Such results coincide with Demire and Akpinar (2018) study findings which state clearly that both experimental and control groups have significantly high attitude scores toward mobile learning and that learners show appreciation towards mobile learning use as a learning approach. These results also concur with Benahcene and Chenih (2019) results which reveal that EFL students have positive attitudes and perceptions towards mobile language learning apps in acquiring vocabulary and are aware of the great benefits of mobile apps on developing the process of vocabulary learning. Effects of mobile apps use on motivating learners for their project performance.

The present findings demonstrate that Mobile Apps integration in learners' project presentations increases their motivation, encourages



and maintains classroom interaction. In accordance with these results, Chiang, Yang and Hwang's (2014) survey about the effectiveness of mobile learning system revealed that mobile learning apps are effective tools to improve the students' learning achievements and raise motivation in attention and confidence. Based on the results obtained from research tools analysis, it is explicit that learners perceive Mobile Apps as a motivational tool that helps them organize, edit and present their school projects in class appropriately as well as it increases their self-confidence and readiness to use them frequently. This result is in agreement with Baby's (2020) study findings which clarify that the use of mobile apps enhances learners' motivation and engagement as it changes the learners' perceptions toward learning by becoming more confident, excited and more driven to learning.

Mobile apps integration ameliorates learners' oral presentation skills

Based on the results attained from research tools analysis, it is clearly stated that Mobile Apps integration affects learning in different ways particularly enhancing learners' speaking skills. These findings corroborate those obtained in Liu and He (2014) study which manifest that the use of Mobile Apps in EFL classes significantly improve learners' speaking skills. Moreover, the use of Mobile Apps in EFL classes proves its efficacy in boosting learners' oral performance. A result that concurs with what Laieb and Cherbal (2020) found about exploring the effectiveness of Pecha Kucha presentations to develop learners' speaking abilities. Furthermore, the present results seem to be consistent with Soto and Zenteno (2019) findings that demonstrate the effectiveness of smart phone video recording applications in ameliorating learners English communication fluency claiming that the use of such Mobile Apps generates positive learners' responses towards the implementation of such Mobile Apps in EFL classes.

Conclusion

Based on the study findings, the use of Mobile Apps proved its efficacy in motivating learners to present their projects appropriately and to maintain classroom interaction by creating an enthusiastic atmosphere adequate for learning. However, it is worth mentioning that the selection of Mobile Apps type is of a great importance in terms of its flexibility, easy access and easy installation for free on mobile devices. Furthermore, teachers should encourage and guide



their learners to use such Mobile Apps either in class or at home by configuring virtual classrooms, and inviting learners to collaborate on a project so as to save time and effort. In addition, this research suggests two main Mobile Apps for project edition and presentation which are Canva and Powtoon. These applications furnish several ready-made templates, music, animation, and audio that are not only used to create excitement, attractive designs, and enjoyable learning and settle a motivational atmosphere adequate for learning, but they can be adapted to improve learners' different language skills including speaking, listening, reading and writing. Most importantly, teachers can integrate such Mobile Apps and others to develop learners' core competencies and enhance 21st century skills including collaboration, digital literacy, critical thinking and problem- solving. The adequate use of such technology creates borderless learning territories for learners of different ages, anytime and anywhere (Taynton, 2012).

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