A Developed Social Android App To Acquire Design Skills For Instructional Technology Students In Egypt

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Abstract : *This paper investigates the impact of a pedagogical model using a developed social Android App on acquiring multimedia design and production skills among instructional technology students at Suez Canal University, Faculty of Education, Egypt. This model based on blending the face-to-face learning context with the power of social media in education, on one hand it enable students to learn in a project-based learning atmosphere and on the other hand it extends the learning time outside university. The developed android app integrates the traditional tools of social networking websites with new suggested tools and services such as searching the internet for, PDF, PPT … etc., search Youtube and SoundCloud from every post without leaving the app to another website or search engine. This context enable students to upload their projects and assignments and encourage them to make further discussions and reflections outside the university. Moreover, it enables the teacher to create educational games and applications, quizzes, questionnaires and open ended questions. In addition, the aim of developing this app is to avoid any distractions that divert students attention and to provide tools which may be not available in traditional social media. The targeted gain in this study was limited to the second and the third phase in the general model of educational design which include designing and developing skills. The data was collected from a sample of 64 participants using an online achievement test and an evaluation sheet for students' projects to know the impact of the study intervention. The results reveal significant indicators in students' cognitive part of the designing skills and in achieving their projects in developing phase.*

Keywords - *mobile learning, social media, multimedia, design, production, instructional technology students.*

I.   Introduction

Today, more than ever before, developments in modern technology are doubling knowledge rapidly that exceeds concerned to manage. Of these, social media influence our jobs, market, politics and education, where users are not only consumers but also producers for knowledge. This has encouraged researchers to keep looking for ways to meet the needs created by those changes especially in the field of instructional technology. Based on this,the present study suggests that it is indispensable to take advantage of social media in enhancing education and overcoming its imperfection with new suggested tools in social learning context. To date, few studies have attempted to investigate how to overcome such imperfection by developing a new social networking websites for educational purposes and assess their effectiveness on acquiring knowledge and skills. Of those studies, Numerous researchers have defined social media and networking websites as a wide range of communication platforms and services, such as profiles, news feeds, chatting panels … etc. where users are given a measure of freedom to share text, photos, videos, and collaborate with one another in a virtual place where people meet in order to achieve a goal or more than one different goal according to the standards and policies of each website or provider ([1] [2] [3]). For instance, there are social networking websites which provide services beyond merely social communication, i.e.: linlkedin.com and researchgate.com. These types of websites targeted professional relationships and cooperations in different fields, whether it is in general careers or academic research which develop professional capacity, as it gives the possibility of sharing professional backgrounds, experiences, researches and projects.

Mobrand (2011) refers to the advantages of Facebook in increasing accessibility and overcoming academic difficulties where 88% of learners express their attitudes towards Facebook as an enjoyable and useful tool which enables them to share ideas and experiences with learning peers. However, the results showed also the students' needs to be more actively engaged, where 78% of them were not able to use Facebook as a learning tool and expressed their needs for more instruction of how to use it effectively [4]. The results found in this study are consistent with other studies, White (2009) and Boonmoh (2013) investigated the impact of using Facebook in English as a foreign language classroom. The researchers stated the effectiveness of Facebook in increasing students' motivation towards learning. However, Boonmoh pointed out that the use of Facebook does

not provide the necessary Face-to-Face meeting with the teacher [5] [6]. Another study conducted by Vikneswaran and Pramela (2015) and concluded that using a Facebook page enabled students to produce coherent text online and offline. Nevertheless, the study experiments showed that students faced problems in writing on Facebook in terms of grammar and vocabulary [7]. The present researcher hereinwants to emphasise the need in such cases for additional educational tools, which provide students with the suitable scaffolding in the right time by giving students appropriate hint or assistance while writing. This could be valuable not only in language learning situations but also in other subjects.

Khitam (2013) conducted a study to investigate the impact of using Facebook to facilitate student-centred learning and implementing social constructivism for 240 undergraduate instructional technology students, were encouraged to participate in a number of activities through Facebook. He stated that Facebook as one of the most popular social network provides valuable educational support and affordance for learning spaces of discussions, in addition enhancing teachers' ability to modify their teaching styles. On the other hand, the study investigated the negative impacts of Facebook on attention, where some of students found themselves distracted from learning context as they are exposed to different kinds of resources that makes them not able to manage their learning time which affects their academic achievement. The researcher referred to the importance of developing programs and environments to enable students to become self-directed by giving them opportunities to practice and exercise greater control over their own learning experience [8].

Preece and Krichmar (2005) investigated the design of online communities and stated thatfurther studies are required in the field of using social networking to deliver learning content or to manage its situations; both showed the need for developing more educational services and tools beyond chatting, commenting, sharing texts, images, videos and links … etc [9]. Hafid (2012) concluded that in spite of the effectiveness of Facebook in improving students' writing ability in English language, it had some weaknesses. The students tended to chat with their Facebook friends out of learning topics, in addition to the distraction by other Facebook features such as music, movies, selfie pictures and posts which disturbed their focus to targeted writing skills [10].

Blazer (2012) summarised benefits and risks of using social networking in education as followed:

1. Benefits Of Education-Based Social Networking
1.1. Incorporates students' preferred learning styles into instruction
1.2. Provides students with immediate feedback
1.3. Allows teachers to quickly recognise students' learning needs
1.4. Enhances communication
1.5. Creates a collaborative atmosphere
1.6. Increases student engagement
1.7. Provides educators with a tool for teaching students responsible networking skills
1.8. Prepares students for the future
1.9. Creates professional learning communities for teachers

2. Risks Associated With Education-Based Social Networking
2.1. Cyberbullying which consists of lies, impersonation of others, threats … etc.
2.2. Exposure to offensive material
2.3. Compromised online safety
2.4. Publication of private information
2.5. Reduced face-to-face communication
2.6. Distraction from school work [11]

With this in view, few studies have been paid attention to the appropriateness of using social networking in educational purposes, how to implement it or develop similar platforms and whether our teachers are efficient in using it or not? El Bialy's wondered: "Our students are willing and prepared to embrace these new technologies. Are we, as their teachers, equally ready?" [12]. Accordingly and appropriately, the present study aims at developing a social network that enables students to use the same services in social networking websites and suggests new educational tools to magnify the benefits and control the imperfections and risks, furthermore and according to the results of a previous study for the present researcher, one of the most significant indications showed that despite the positive attitudes of participants, some of them still preferred to use Facebook, because it has its own social app on android and iOS systems, it become more prevalent than the social networking website itself [13].

Many studies have emphasised the positive attitudes among students towards using mobile apps in education, of these studies Chen & Kessler (2013) concluded that using tablets in english learning enabled students' interaction and collaboration, they stated that it was ideal tools to foster learner autonomy and

ubiquitous learning in informal settings, the study results showed the positive attitudes and satisfaction of mobile technologies as language learning tools [14]. Results of another study conducted by Chung et al. (2014) showed that mobile learning promoted students efficiency in learning vocabulary and increased the relevancy of learning topics to life experiences, in addition to saving and extending learning times [15]. Recent studies continue to confirm the previous results especially in higher education, where the most significant characteristics of using mobile apps in education are the freedom of location and time. So that, with mobile apps students have access to learn topics and tools anywhere and anytime, in addition to the positive attitudes of students toward it [16] [17] [18].

Mobile learning as defined by Mahajan (2015) is the ability to use personal mobile devices to support teaching and learning. It is accessible from anywhere and anytime. Mahajan pointed out the opportunities of mobile apps in education as followed:

 Encourage anytime, anywhere learning
 Improve techniques of social interaction
 Fit with learning environments
 Enable a personalised learning experience
 Utilising benefits such as interaction, portability and affordability [19]
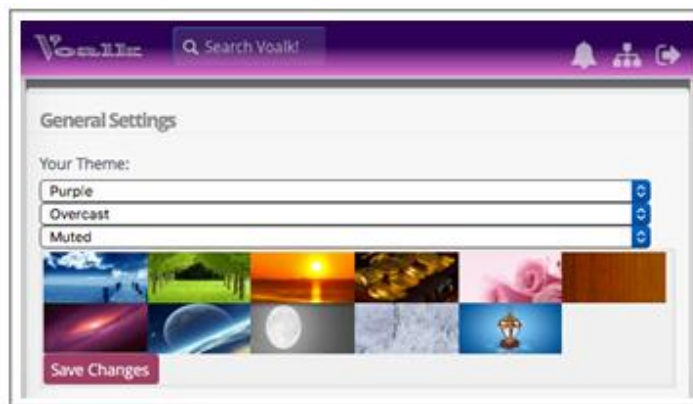
The present study aimed at investigating the impact of a developed Android Social App on activating the pedagogical model of the study, and acquiring the skills of multimedia design and production for instructional technology undergraduates. Although the developed android social app in the present study - **Called VOALK and available on google play store -** suggests various tools that trying ensuring students engagement, cooperation and decreasing the imperfections of traditional social networking.

II. The Suggested tools in the developed app "VOALK"
The following examples are provided to illustrate the unique educational tools in the developed android app, which do not exist in traditional social apps, figure 1 shows the main interface of the android app, It is similar to the Facebook app interface to make students familiar with it. However, the user can change the colour theme of the interface and turn (Text to Speech) TTS on or off in addition to other user's preferences (see fig. 2).
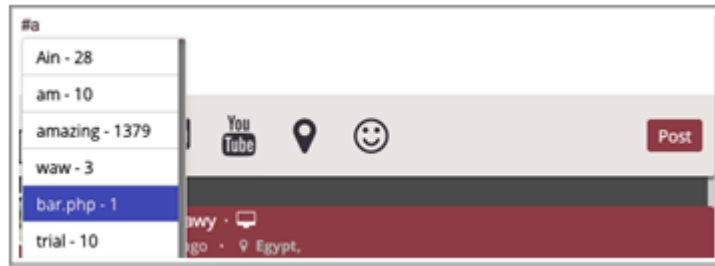

Fig. 1. The default user interface.   **Fig. 2.** User settings, page of preferences settings
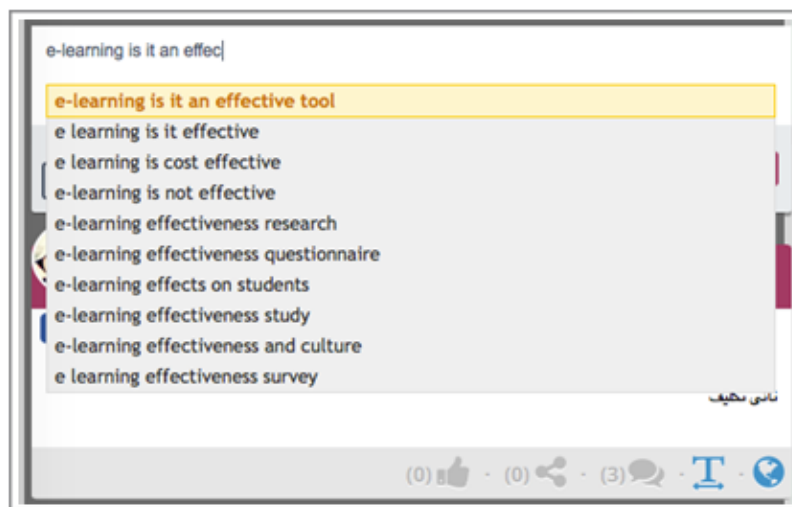
Figure 2 shows the general settings of the app, the user has the possibility to choose his favourite from more than ten coloured themes. In addition , the TTS service enables user to listen to every post in his chosen language or to mute this option. The students in instructional technology branch used this service to download MP3 files of text they post to use it in their multimedia projects.

Figure 3 shows the Hashtag feature which enables students not only to share their posts under the same tag but also assists them to know whether their wanted hashtag is already used before or not and how many times is appeared in previous posts. This could be useful also in achievingand searching previous discussions and assignments.
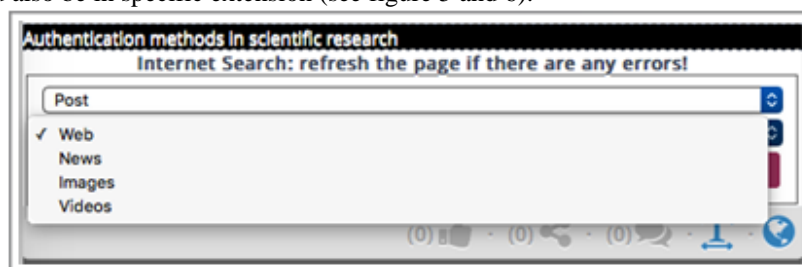
Fig. 3. The feature of Hashtag.

Figure 4 shows the integrated autocomplete feature which suggests alternatives while student is writing the post and this feature is very essential when student wants to write or search something. It obtains the suggestions by calling the google API via this URL"suggestqueries.google.com/complete/search?client=chrome&q= $post_text," where $post_text is the text of every post.
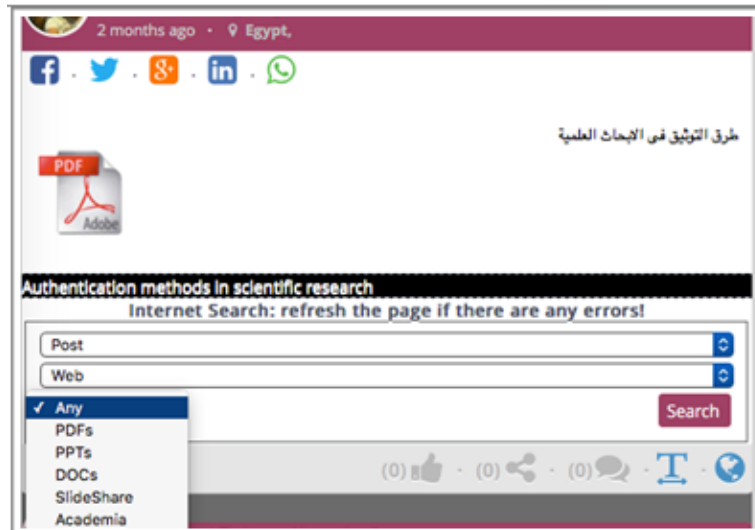

Fig. 4. Autocomplete feature in every post.

The pervious feature differs from another feature which enables students to search the internet from inside the developed android app with no need to leave it. Using bing API "api.datamarket.azure.com/Bing/Search" students are able to get PDFs, PPTs and images which they can use afterward in achieving their multimedia projects. The search feature allows students not only to search the internet from the text of every post but also to define the wanted results to be obtained from web, news, images or videos. It could also be in specific extension (see figure 5 and 6).
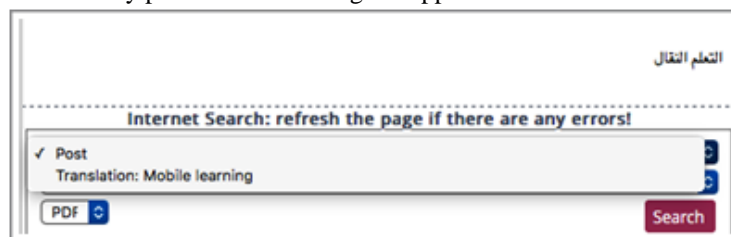

Fig. 5. This figure shows the possibility of choosing the target of search.
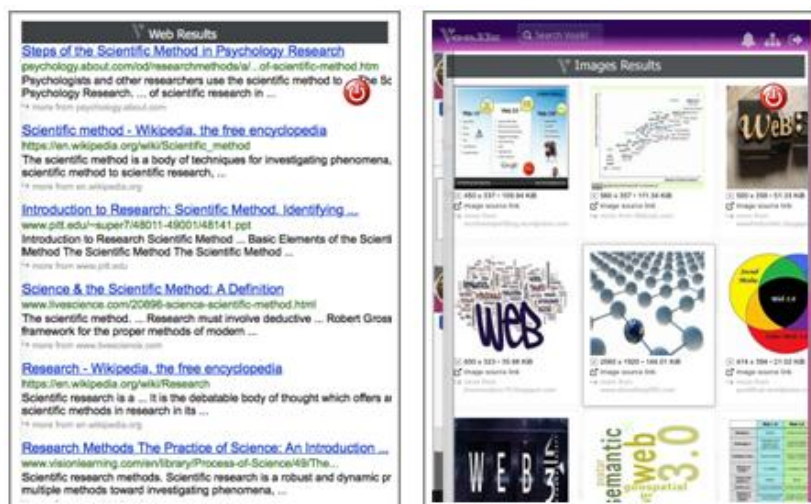
Fig. 6. This figure shows the possibility of choosing the file extension or the website.

In addition, The search form as shown bellow allows students to search the internet by the text of every post or by its transition to the chosen language of the interface. In the following example (see figure 7) the chosen language of the interface was the English language and Arabic is the language of the post, the students in this example are searching for the concept of mobile learning. Figures 8 shows two examples for the results as it could be files with predefined extension such as pdf, ppt, doc … etc. or from specific website or to show the images related to the text of every post without leaving the app to the browser.
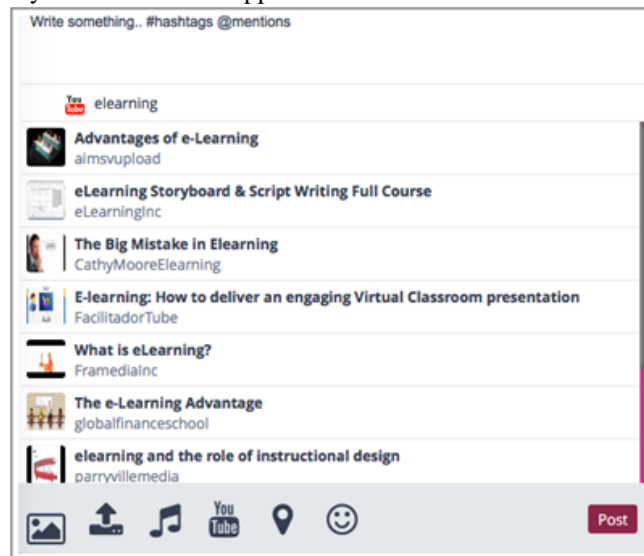

Fig. 7. The possibility of choosing the source text to search from the post or its translation.

Fig. 8. The results of web search using the text of every post.

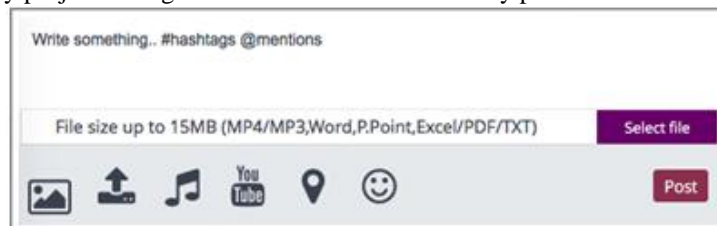Another two search features from inside the android app, where students can search Youtube for lectures or illustrations and search SoundCloud for audio book or recorded lectures too without need to leave the android app which is an attempt to save student engagement to the suggested learning environment and decrease the possible distraction when going to Youtube or SoundCloud website or open another window or internet

browser. The student can share the selected clip or track and control the privacy too. The following Figure 9 shows the searching tool in youtube inside the app.

Fig. 9. The searching tool for youtube inside the developed app.

Figure 10 shows the tool that allows students to upload their files in different extensions, so they are able to share their videos in MP4, their presentations in PPT, and their scenarios for multimedia projects in DOC in addition to MP3s and other extensions. This encourages them to discuss issues related to the design and the production of every project through the comment feature on every post.

Fig. 10. The uploading tool for inside the developed app.

Automatically, all posts are archived and classified then students are able to recall them according to extensions or the content of every post as shown in figure number 11 bellow:

Fig. 11. The filter tool that enables students to classify and recall posts.

The following figure 12 shows the media player of VOALK, it includes one of students' assignments and comments from another students asked about the authoring tool of that video.

Fig. 12. The media player and one student's assignments.

The script of the developed app "VOALK" allows teachers to create quizzes, questionnaire and open questions. The teacher can create time-limited examinations and/or limited with a targeted number of responders (see figure 13). Beside the question there is automated statistics show the number of responses to every items in addition to some descriptive statistics such as mean, variance and standard deviation, those coefficients could be helpful for teachers to make decisions.

Fig. 13. One multiple choice question using the questioning tool.

One of the most significant feature in the developed app "VOALK" is that users are not only able to play games like Facebook - which is one of the reasons on imperfection of Facebook that cause the distortion from the learning topics - but users are also able to create pages for educational games and applications. The following figure 14 shows one of those pages and groups, which used by instructional technology students to share their projects ideas, assignments.

Fig. 14. Group of Instructional Technology students, and an example of students' assignments.

III. The targeted skills and the suggested pedagogical model

Regarding the five-phase model of instructional design - Analysis-Design-Develop-Implement-Evaluatie (ADDIE) - Danks (2011) presented some of the core values and principles that manage the use of the model include the focus on outcome, a systems perspective and the intent to add value [20]. In the present study, two phases of the model (Design-Develop) were studied by the Instructional technology students. McGriff (2000) stated that design phase aimed to plan a strategy for developing the instructionand the material, to outline how to reach the goals using proper media, writing a target users description, writing lesson plans, selecting the delivery system and sequencing the instruction. where in the development phase students will asked to write lesson materials, produce required media that will be used, and any supporting documentation. This includes the required hardware and software [21]. Wherefore, The students in this context have several roles that differ according to the targeted skills in every phase summarised as following:

1. In the design phase:
1.1. Discussing their ideas inside classroom or using the android app
1.2. Writing measurable educational objectives
1.3. Formulating concepts and test items
1.4. Identifying required resources
1.5. Creating instructional scenarios

2. in the develop phase:
2.1. Producing flowcharts for their productions
2.2. Creating storyboards for their productions
2.3. Producing audio, video, graphic and/or user interface
2.4. Developing educational multimedia presentations and applications

At the beginning of the experiment, the students were informed about the study's objectives, the skills they expected to acquire and the standards to be met in their projects based on what they studied in a previous course called instructional design. Then, the researcher explained how to use the android app inside and outside the classroom, especially in the design phase. While students share and discuss required resources, their objectives and e-test items formulations, the researcher goes around in the face-to-face sessions in the computer laboratory and gives help to students who have difficulties, and follow up their discussions in a group created on the networking app to manage their projects, the researcher assigned various tasks, so students begin to formulate objectives, test items and create scenarios. Afterward, the learning time is extended outside the

classroom using the android app even in the development phase. Each student shares his assignments using his own account and gets feedback, the research posts comments and recommendations to improve students' productions they shared in their own accounts. Also, this is not self-learning or standalone learning environment; the researcher's guidance along the learning session plays an important role in every phase.

3.   Researcher's role as a teacher:
3.1. Posing different tasks to students considering the targeted skills and outcomes.
3.2. Informing students about the possibility of searching the internet for resources such as PDFs, PPTs and Youtube … etc. from inside the android app, and the possibility of uploading and archiving their projects to give them feedback later on.
3.3. Discussing every task with students and giving recommendations for better results .
3.4. Encouraging students to search for informations and resources using the android app.
3.5. Stimulating students' formulations of their scenarios in their own words.
3.6. Directingevery student and giving feedback to all participations to put their scenariosin an appropriate 3.7. form to the development phase.
3.8. Managing the discussions among students and encouraging them to ask relevantquestions face-to-face inside the classroom or in their comments in every post.
3.9. Encouraging the students to give ideas for the design and production, starting with their own ideas. Scaffolding students responses by giving them appropriate hints and invite them to work collaboratively in achieving their projects.
3.10. Evaluating students' achievement by posting quizzes or open ended questions using the questioning tool inside the android app.

Although, the researcherstressed that students should accomplish their projects in cooperative groups in which they promote each others' achievement by sharing resources using the android app. In this study, students used to do the assigned tasks cooperatively in face-to-face in the laboratory or online interaction, discuss concepts being learnt and provide each other with feedback inside the classroom or in comments using the app so as to improve their subsequent achievement.

Problem of the study
In Faculty of Education, Instructional Technology students study many courses of instructional design and production. The students usually expressed that more time and effort are needed for group learning and practice more than just the 2-hour per week sessions, in addition to the need for more feedback and discussion in the assigned tasks in such courses especially in the 7th and 8th semesters when they start their graduation projects. This led the researcher to find a way to extend the learning time and a suitable pedagogical model to encourage practicing their skills, submitting their work, sharing and discussing ideas, which the developed android app and the suggested context attempt to achieve. Thus, the present study address two research questions:

1. What is the effect of the suggested model on students' achievement in the cognitive skills of the instructional design?
2. What are the indicators of the effect of the suggested model on students' production skills?

Hypotheses of the study
To examine the effect of the study intervention on students' cognitive skillsand their productions, two hypotheses were formulated and investigated.

1. There are significant differences between the pre-and-post test mean of students' scores in the achievement e-test of multimedia design and production.
2. There are significant indications regarding the data collected from the evaluation sheet for students' production skills.

Results of the study
1. For the first statistical hypothesis stating that "there are significant differences between the pre-and-post test mean of students' scores in the achievement e-test of multimedia design and production" , the results in table 1. shows that there were significant difference at calculated T=5.6, tabular T=1.9983 and confidence interval 0.95 which favoured the post-test.

Table 1. One sample T-Test of the achievement in cognitive skills of instructional design

Achievement Test	Means		Std. Dev		DF	T-value	S. Sig.
	pre	post	pre	post			
Instructional Design	32.4	37.7	4.2	3.8	63	5.6	0.05

2. The results also give answer for the second question and accept its hypothesis stating that "there are significant indications regarding the data collected from the evaluation sheet for students' production skills". Table 2. shows percentagesof students who fulfilled the most significant standards in the evaluation sheet.

Table 2. Numbers and percentages of students who fulfilled standards in the evaluation sheet

Item	Of 64 Students
Interface has consistent style and is easy to navigate.	53 (83%)
Graphics, videos, and sound effects are adequate for objectives.	41 (64%)
Pictures and sounds are related to the content of every frame.	58 (91%)
Frame changes does not distract from reading and/or listening.	33 (52%)
Text colors are contrasted over background for easy reading.	61 (95%)
Text is typed in readable paragraphs and in appropriate amount.	51 (80%)
Various fonts in appropriate sizes are used to be readable when projected.	58 (91%)
Decorated fonts and formats are avoided to concentrate on the content.	43 (76%)
Improper elements (graphics, sounds and bad written words) are avoided.	63 (98%)

The result reflect that around 73% of students fulfilled the mentioned standards which might show the need for further experiments especially to overcome the lack of use transitions and synchronisation between frames. This means that the study context which integrate mobile learning, social networking and face-to-face cooperative learning was profitable, so that students achieved better when they have more time and when they worked cooperatively in a social learning context whoever inside classrooms or online. This findings support previous conclusions about the positive effects of mobile and social learning on students' achievement in similar subjects (e.g. [1], [17], [22]).

Moreover, the study experiments revealed that the use of the social android app in such context was actually the first opportunity for students to have another space and time to study and share experience and success, which encourage the present researcher to trace the effect of the study experiment on the same group of participants in future researches.

IV. Recommendations

Based on the results of the present study, the following recommendations are reached:
1. Researchers should be encouraged to adopt or develop educational networking apps as an effective model in activating online social learning.
2. University teachers and staff members should be encouraged to trained to use mobile learning with their students.
3. More time and proper environments should be provided in order to help teachers implementmobile learning and social learning strategies.

V. Suggestions for further research

1. The present study suggests to investigate the effect of integrated mobile and social learning environment on students' attitudes towards various subjects in instructional technology branch.
2. The present study can be replicated using bigger and/or different sample in order to generalise results.
3. Further research can investigate the effect of mobile versus blended learning on university students' achievement in other academic subjects.

Acknowledgements

References

1. Jucevičienė, Palmira and Gintarė Valinevičienė. "A conceptual model of social networking in higher education."*Elektronika ir Elektrotechnika* 102(6), 2015, 55-58.
2. Bumgardner, S, & Knestis, K. "Social Networking as a Tool for Student and Teacher Learning." District Administration. Retrieved (Oct. 2015)from *http://www.districtadministration.com/article/social-networking-tool-student-and-teacher-learning*
3. Boyd & Ellison. "Social Network Sites: Definition, History & Scholarship□ in *Journal of Computer- Mediated Communication.*13, 2008, 210-230.
4. Mobrand, E. "Facebook for Teaching and Learning."*Pedagogy in Technology*, No. 1. National University of Singapore. 2011.
5. White, J. "The use of Facebook to improve motivation and academic writing"*Proceedings of the Third International Wireless Ready Symposium.* 2009, 28-32.
6. Boonmoh, Atipat. "Incorporating the use of Facebook into the EFL Classroom.*"The European Conference on Technology in the Classroom.* 2013.
7. Vikneswaran, Thulasi, and Pramela Krish. "Utilising social networking sites to improve writing: a case study with Chinese students in Malaysia."*Technology, Pedagogy and Education ahead-of-print.* 2015, 1-14.
8. Khitam, S. "Facilitating the Implementation of the Constructivist Approach through the Social Space of Facebook" *Fourth International Conference on e-Learning.*2013.
9. Preece, Jenny, and Diane Maloney-Krichmar. "Online communities: Design, theory, and practice."*Journal of Computer-Mediated Communication* 10(4), 2005.
10. Hafid, Erwin. "USING FACEBOOK GROUP DISCUSSION TO IMPROVE THE WRITING ABILITY OF THE FOURTH SEMESTER STUDENTS AT ENGLISH EDUCATION DEPARTMENT OF UIN ALAUDDIN MAKASSAR.*"UIN Alauddin Makassar. 2012.
11. Blazer, C. "Social networking in schools: Benefits and risks; review of the research; policy considerations; and current practices." Miami-Dade Public Schools Research Services.2013.
12. El Bialy, Safaa, Ali Jalali, and Akram Jaffar. "Integrating Facebook into Basic Sciences Education: A Comparison of a Faculty-Administered Facebook Page and Group." Austin J Anat 1(3), 2014, 7
13. Abdelfatah, Hussein."The effect of using a developed spoken social networking website on instructional technology students attitudes and habits in Egypt." Published in: *Proceedings of the 2015 Fifth International Conference on e-Learning* (eConf 2015 18-20 Oct 2015, Bahrain) (In Press).
14. Chen, X. B., & Kessler, G. "Action Research Tablets for Informal Language Learning: Student Usage and Attitudes." 2013.
15. Chung, H. H., Chen, S. C., & Kuo, M. H. A Study of EFL College Students' Acceptance of Mobile Learning. Procedia-Social and Behavioral Sciences. 176,2015, 333-339.
16. Abadi, S. M. M., & Saadi, F. F. EXPLORING IRANIAN EFL UNIVERSITY STUDENTS'ATTITUDES TOWARD MOBILE APPLICATIONS FOR VOCABULARY LEARNING. 2015.
17. Wong, K., Wang, F. L., Ng, K. K., & Kwan, R. "Investigating Acceptance towards Mobile Learning in Higher Education Students." In *Technology in Education. Transforming Educational Practices with Technology.*Springer Berlin Heidelberg. 2015, 9-19.
18. Al-Emran, M., & Shaalan, K. "Learners and educators attitudes towards mobile learning in higher education: State of the art." In *Advances in Computing, Communications and Informatics (ICACCI), 2015 International Conference on.*2015, 907-913. IEEE.
19. Mahajan, M. "Mobile Devices: From Distraction to Learning Tool." Dimensions of Innovations in Education. 2015, 245.
20. Danks, S. "The ADDIE model: Designing, evaluating instructional coach effectiveness. ASQ Primary and Secondary Educafion Brief." 4(5), 2011, 1-6.
21. McGriff, S. J. "Instructional system design (ISD): Using the ADDIE model." (2000), Retrieved (Nov.122015) from *https://www.lib.purdue.edu/sites/default/files/directory/butler38/ADDIE.pdf*

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