

Managing a Successful IT Learning Session with ICT Support

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ABSTRACT

One of the major developments in the education sector was the involvement of ICT in the learning sessions. This led to the improvement of education in general as well as the improvement of the ICT skills of the learners and teachers. Hereby in this paper we present a methodology which was used in one of the large educational projects in Dubai/United Arab Emirates specifically at 'ITEP' IT educational project, which we elaborate on the teacher's observations during the learning sessions. Also, we elaborate more on the teacher's methods used to plan and manage ICT sessions in several occasions during the project period or the course period. We also discussed some of the methods which were used by different researchers to enhance the learning session by applying some ICT techniques in related work before moving to the ICT methodologies used in ITEP and the progress observed in understanding ICT by both learners and teachers.

Keywords: *ICT, Learning, Teaching, Planning*

INTRODUCTION AND RELATED WORK

Every year the information technology does advance rapidly specially in the last decades which made the ICT advancement in the field of education

inevitable. This rapid advance has its impact on the education in general so that the education would lose its effectiveness without the use of ICT. Many countries as well as educational institutions had adopted new methods in teaching with the support of ICT yet there were not enough studies which has been conducted to introduce how do the teachers plan, manage, and evaluate the use of ICT in their learning sessions. Although many works have presented new mythologies and case studies on how to use the ICT in the learning sessions.

This includes a case study which was presented by Torana and Gaith (2016) as we will discuss soon. The ICT has become a major part of education since the use of computers and Internet and other technologies. There were also many researchers who addressed many case studies to determine the effectiveness of the use of ICT in classrooms and the benefits gained for both teacher and learners. Some studies have implemented to determine the outcome of some ICT educational projects which were designed to develop the learners as well as the teacher's ICT skills, knowledge, and awareness of ICT. Some papers and studies do discuss the learning environment, tools as well as definition while the learning process was defined. Torana and Gaith (2016) had commenced a case study to study the impact of the use of ICT on a Group of Mixed Abilities and Mixed Aged Learners at ITEP. Furthermore, it showed and discussed the results from the questionnaires provided by teachers to the students. Richards (2006) wrote an article which responds to the challenge of reconciling the often conflicting technological and pedagogical senses of the concept in terms of outlining a convergent notion or integrated framework. Also, seeking to provide more efficiency to connect alternate virtual and actual contexts of both teachers and learners since many teachers and trainers find it hard to use the information and communication technologies (ICTs) in their classrooms.

As we read in Katz (2000), the authors presented a study on three groups of college intellectuals participated in a case study about distance learning approaches, the results of the study showed that the interactive Picture-Tel distance learning system add significantly advanced levels of learners gratification and learners accomplishments than the interactive internet distance learning procedure. This in turn contributed to a higher levels of student satisfaction and academic accomplishment. In Hayes (2007), the researcher aims to describe and test the paths for the teachers

in the frame of utilizing ICT in the learning environments process for mediate learners. The results showed that ICT is largely integrated to the classroom and sessions topics. Besides, in Jain and Luaran's (2016) study inspects the pedagogical uses of mobile devices, specifically on the use of iPad among pre-service teachers. In Lee et al. (2016) a Design-based Research (DBR) approach was adopted to provide solutions to a practical problem that faces the Vietnamese educational context through a process of iterative analysis, design, development, and implementation according to researchers. While in Cheok et al. (2016), the researchers present successful experiences and solved some issues associated with the use of Information and Communication Technologies (ICT). Then the study showed that there were significant obstacles to the effective use of technology. The complex and less visible space of teacher trainers' as the study suggested must be addressed. We can see also in Juhary (2016) when the paper discusses how active learning can be promoted using Twitter at the National Defense University of Malaysia (NDUM). As the concept of back channeling through Twitter is illustrated by looking at the screenshots of tweets and retweets during classroom learning of a course at the NDUM. In Nordin, Embi and Norman (2016), the researchers discussed Massive Open Online Courses (MOOCs) and their impact on the learning environments and the learning process as they claimed that MOOCs will help the knowledge to be dispersed to a global set of learners in an open learning environment. There were also other ICT case studies which was discussed by researchers which targeted different type of people, such as the rural areas of South West China, when Jiake LV (2011) mentioned that the ICT education process in such place is a long-term process and demands a coordination of many complex factors such as equipment's, technology, funding, instruction contents, teaching practice and human resources. Again Audry and Dawson (2012) conducted a case study of the role of ICT in grade 3 classrooms, the case study method utilizing three data sources -interviews, observations, and questionnaires that used to collect data. There were aiming to determine how ICT can be integrated in grade 6 classrooms.

Later in the next section we will elaborate more on the teacher's methods used to plan and manage ICT sessions in several occasions during the project period or the course period. We will also discuss some of the methods which were used by different researchers to enhance the learning session by Applying some ICT techniques in related work before

moving to the ICT mythologies used in ITEP and the progress observed in understanding ICT by both learners and teachers.

RESEARCH METHOD AND DESIGN

Background of the Institution, Learners, and Teachers

This study was conducted in the labs of the IT Educational project 'ITEP' in Dubai/UAE. The project was initiated to enhance education by using ICT. The project began to provide IT Training to 1st & 2nd secondary students of 40 public schools across the state by using a purpose-built e-learning solution developed. There were over 13,000 students who pass through the program every year.

Following the success of the public school's project and to support the UAE government's e-government initiative, ITEP has been instrumental in promoting IT literacy with modern learning solutions within various sectors of the society and different government sectors. The learners were students which were aged between 16-55, with mixed and different educational backgrounds and from different government departments. Most have English as their second language and most of them had a medium IT knowledge. The use of the ICT was very helpful, and the teachers intended to gain the max benefit from the usage of the ICT in such a class to help deliver the subjects.

The teachers were highly skilled with good professional teaching experience. Their roles and responsibilities was to teach different kind of students and trainees with different Courses in IT. Also, they had to set the monthly, weekly, daily plan for the classes as a part of their roles, select and create outlines for the Courses, managing materials to help students to understand IT and Making samples for the exam tests.

Using ICT to Investigate a Teaching and Learning Issue

The issue subject for investigation was on how to use ICT resources in the schools and department to help investigative work for the curriculum subjects, while the learning program which related to investigation was to teach ICDL course for the trainees, that is a basic IT skills course. To elaborate more and identify the opportunities for using ICT to support the

Learning session which ICT to be used in was named 'using internet for information Search about virus's types' in an internet and communications lesson. The options available for teachers to use ICT is the use of the internet inside the class room that gave the teachers and students the opportunity to use search engines to search such a subject (computer viruses) since each students in the class had access to the internet. The ICT chosen was planned to contribute to meeting the learning objectives by encourage the students to work and learn independently rather than making the teacher lead the activities in the classroom by him/herself. Besides, it will meet the learning objectives by developing several skills of the learners such as technical and information's self-searching skills. By evaluating the main benefits to be gained from using ICT that will be gained from using this ICT recourse (the internet), this will expand the search area for the learners so that they can use the internet to access any site which they need in their research topic specially about computer viruses and the ways to prevent the systems from being infected. The teachers planned to decide to use this ICT resource in the class because of the benefits that the teachers and the students can gain. Also, the teachers thought that they can use the internet in a whole group approach that should be controlled or filtered to protect the students from the some not appropriate use by not giving a chance for the learners to use this ICT recourse in a way that won't support the teaching method.

Evaluating ICT Resources for Use by Teacher and/or Learners (Internet)

To evaluate the ICT resource that will be used in the future, the teacher in this case chose the internet by defining ways that this resource could support teaching and learning by helping students and trainees to carry out research from a 'world-wide database' by providing subjects, text and information's which related to the study material. The suitability of using this resource from the teacher perspective and from the learners' perspective was that internet will be connected to each computer which makes it available for each student when they need to search for information's over the web or when they are asked to do so. Also, the teachers will be able to reach the information's that they need and forward these information's to their students in the class. The planning method was that students and trainees can access the resource from any classroom using their own log-in ID's. Furthermore the internet access will be available of 24 hours a day in case the students

or the trainees needed to search for information's after the classroom usual hours. In addition, many students also have access to the Internet from home. The teacher and the learners can benefit from this resource by searching for specific information and results comprising of text, tables and sound files that can be integrated into reports by using simple cut and paste techniques.

The teachers' experience in trialing this resource was good especially when they asked the student to make a research or to write reports about a specific subject and hand it over to teachers at the end of the class for assessment. The internet on the other hand was so useful and they used the search engines in a positive way. They didn't waste their time surfing for useless subject since they had to finish the report at the end of the day, which makes them learn how to manage their time while they use the internet in between completing their own assignments and surfing for their personal interests over the web.

In their trail usage, the teacher's face the issue that the internet might be slow sometimes, due to some errors in its connections or it may contain many unsafe sites which causeserious threats for the systems through transferring viruses and spams from these sites to the computers. Sometimes, the students might use the internet in a bad way to log in to inappropriate sites, or they might use the net to listen to music or to chat rather than doing their research.

In handling issues that are related to managing the learning environment in using this resource, the teachers first had to prepare the environment before the class starts, andto check the computers' functionality if they had any errors or problems. They also had to check the internet connection and speed, the user names and ID's for the students in order to log in to the systems. On the other hand, the teachers had to check the Cooling/Heating system of the class room to ensure a comfortable environment for learning.

When these issues occur during the trail sessions the teacher has to contact themaintenance or the department of IT in case the connection went slow for a long period of time. Beside that the teachers were directed to ask the IT department to install virus protection system or Anti-virus program on each PC and update these viruses scanning program regularly. Also, the teacher has to make sure that he/she can control the internet access

and not allowed the users to log in to unsafe or useless sites and to report if any problem occurs in the system or the Pc's. On other hand the teacher again must be sure to help the students to filter the information's that they get from the internet in order to keep the useful points and reject the other unneeded information's.

Every time the teachers were asked for their recommendation on whether this ICT resource should be used, they recommended using the internet in the classrooms as it will expand the skyline and the knowledge for the students. They justify it by saying that it does save time, effort, and enable both the teachers and the students to search for more information's which are useful to them and which support their way of teaching. When students work in groups that enabled them to exchange information's between each other's, discuss ideas and shared thoughts about the same topic. That increased their knowledge and made it much easier for them to understand and practice the ICT in groups. Also, this method helped the middle ability students to have them participate and engaged in the class activities.

	Examples of Students' Work (That might be used to You)	Subjects
1	http://www.cold0zero.com/	Personal website
2	http://www.syrianita.blogspot.com	General subjects
3	www.anas.cc	Personal website
4	http://www.egolden.net/	General subjects
5	http://www.syrianita.blogspot.com	General subjects
6	http://egolden.blogspot.com	Personal website

Figure 1: Sheet which was provided to the Students by Their Teachers includes Some Examples of Websites that were classified by other Students

Evaluating ICT Resources for Use by Teacher and/or Learners (ROBOTEL)

The ICT resource evaluated in this session was a remote-control device which the teacher can use to control the activities of the students in the class room which also called (ROBOTEL). The Robotel is a device which allows the teacher to control and monitor the other student's computers from his location. Also, it does allow the students to watch the teacher work on their screens. This device might be a great help for both the students and teacher to support teaching and learning since it will be connected to each workstation in the classroom. The teacher can control the activities for each workstation to make sure that they are restricted to the lesson and not using other ICT resources in not appropriate way. On the other hand, the students can use this ICT resource to ask the teacher to help remotely in any problem they face during the class time. The suitability from the teacher and the learners' perspective was that this ICT resource will be very suitable since the ROBOTEL will be connected to each computer which makes it available for each student when they need to ask their teachers for any help or if the teachers wanted to explain to them an issue. The teachers will be able to reach out and monitor all the students PCs activities from a distance. Students and the teacher can both use this ICT resource from their workstations in the classroom because it will be connected to each workstation then to the teacher work station that will be in control of running the device. The teacher could also give instructions to the students before the class starts about how they can use the Robotel, while explains to them the advantages of the device. While the students can use the Robotel from their seats when they need to ask a question by pressing a button, the teacher can explain the lesson for all the students on their screens in the same time. The teacher can also supervise and monitor the students work remotely in each work station. The teacher's experience in trialing this resource found it very useful and it will save time. Even though there might be some issues accompanying the use of this ICT method. First, the remote control may give less human contact between the teacher and his student. Second, the students might not feel attracted to the lesson and they might feel bored which make it necessary for the teacher to consider not using this resource from time to time in the class. Besides, there were some issues related to managing the learning environment in using this resource. As sometimes the students need the teacher to explain the subject face to face without using

the device, the use of Robotel in teaching from distance makes them feel that teacher didn't yet answer enough for the questions they asked. This can be solved with increasing the human contact between the teacher and the students and by making sure that the teacher can be always near to the students even though he/she is using the Robotel device in the classroom. So, to deal with these management issues the teacher should talk from time to time to the students in person and walk down between his/her students every now and then to ensure that this human contact will continue between the teacher and his/her students. Yet with these existing issues, the teachers recommended using this ICT resource especially when the teacher will need to explain some issues as it does save time and effort for the teachers while they teach specifically if there were a wide range or large number of students in the class. Furthermore, the size and type of the information's that they gained from using the ICT resource expanded dramatically during the sessions. In Addition, the use of the ICT also enhanced the performance of the students in dealing with technical issues such as using the printer, downloading information's, and using Microsoft Word application and other software's and hardware's.



Figure 2: A Picture of the Labs Plan used during the Teaching Sessions

The Teacher's Observations during the Sessions

The teachers noticed that they had two levels of students, students who had a previous knowledge in IT and internet, and students who has weak knowledge in IT. Students co-operated with each other in finding their information and they were able to make decisions upon which information's to share. Also, they noticed that many students were using the internet as a way of entertainment or chat with friends and family which caused loss of time and effort during class. Beside that, they found that key words for the search engines had to be used carefully as some words might give a complete different meaning or it might be blocked by the Internet firewall. The teachers also realized that unless the search is clearly focused; students are in mistake of collecting lots of information but without any real purpose. They need to ensure that the students are not into making wide or vague searches. From a technical point of view, they've also noted that the Internet runs faster at morning and evening - possibly due to the resource being less in demand by the rest of the school but this should not really affect the timetabled lessons. The teachers suggested that the better way to prevent the above problems is to use a software which blocks the chat and entertainment sites during class time so the students can save effort, time and finish their search and work within the given time line. They also realized that they could group students together in a way that each group contains a student of each level in order to help and co-operate with each other. The teachers can see the ICT resource benefits clearly when they look at the students work. It's a better way to find information's than using books or newspapers and it helped the students to practice technical skyline where they had not yet used. It also improved the students working skills, time management skills, communication skills and decision-making skills as an extra non-IT skill.

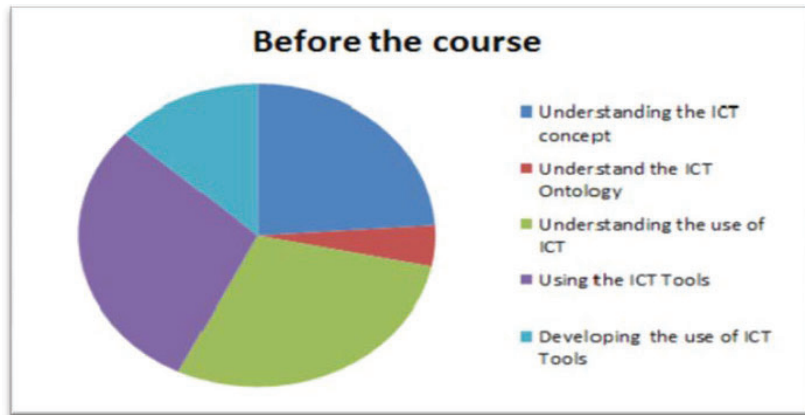


Figure 4: ICT Skills and Understanding among the Learner's Group before the Course

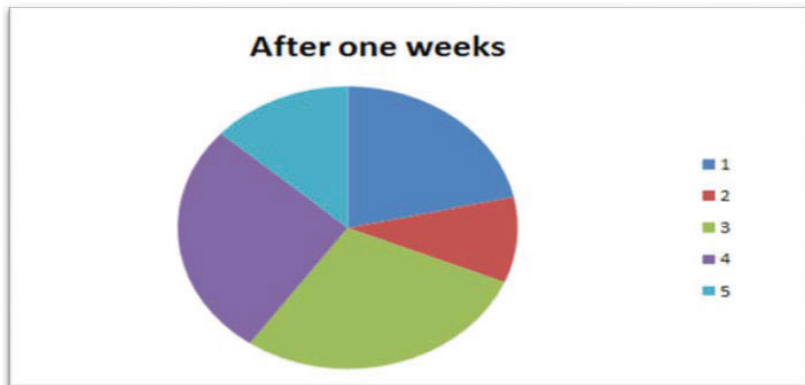


Figure 5: ICT Skills and Understanding among the Learner's Group after One Week from the Course

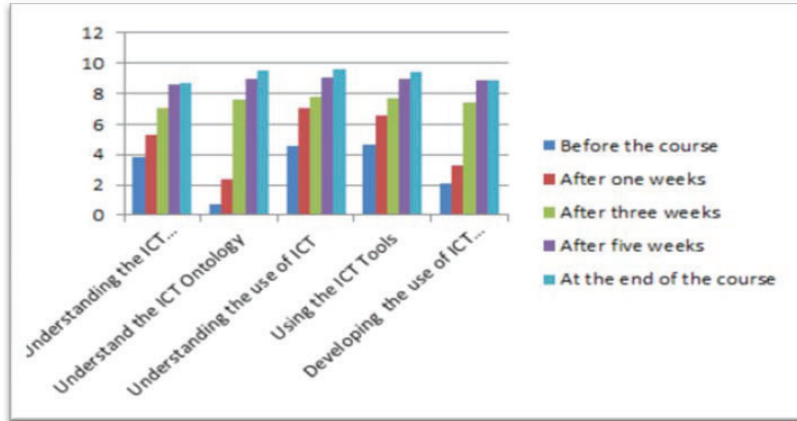


Figure 6: A Comparison between the Increased ICT Understanding and Skills during the Different Times of the Course Period

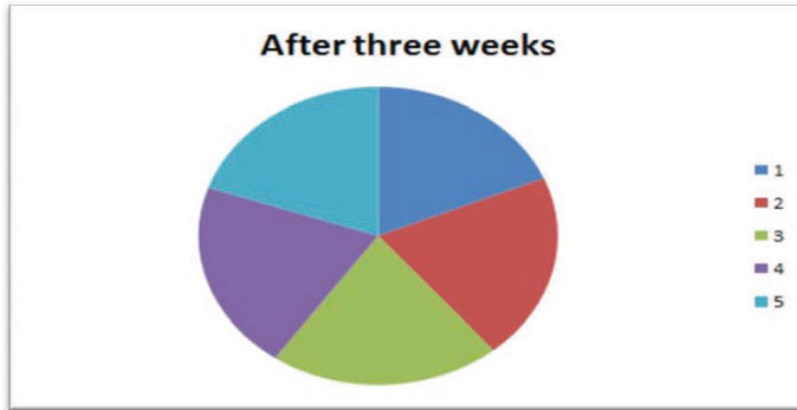


Figure 7: ICT Skills and Understanding among the Learner's Group after Three Weeks from the Course

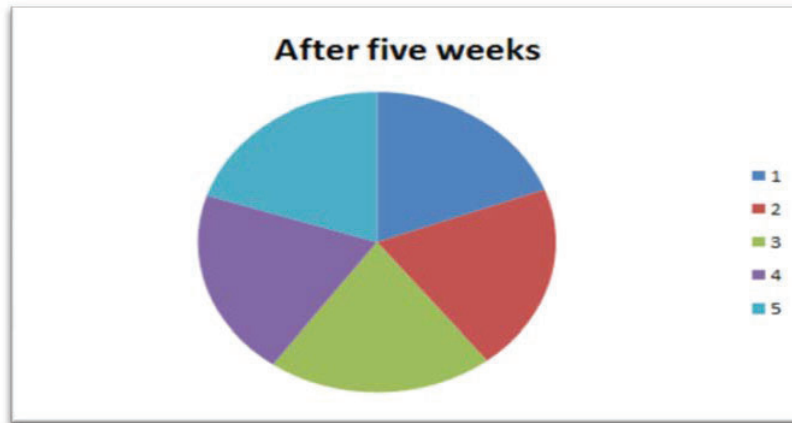


Figure 8: ICT Skills and Understanding among the Learner's Group after Five Weeks from the Course



Figure 9: ICT Skills and Understanding among the Learner's Group after the Course

CONCLUSION

As we can see from the methodology explained above, the students or learners did benefit from the ICT use as well as the ITEP courses as we can see a tremendous difference in ICT understanding and skills developed by the learners. According to the charts, the learner's knowledge kept increasing and improving every week until the end of the course. We also noticed from the teacher's evaluations that the teachers and learners both did improve their IT skills, and the teachers were able to deal with the issues that occurred during the sessions. The teacher's careful planning for an ICT session was very useful to manage the outcomes of the ICT session and on how to organize, manage the ICT session in the classrooms. On the other hand, evaluating the ICT learning session have an important role in planning the next session. They also gain benefits from the problems and issues experience in the previous ICT sessions. Most of these issues were technical issue which required the attention of the technical departments. In the end the teachers and students developed their skills to overcome minor technical issues or sometimes medium technical errors that were previously required a third-party attention.

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