
Information and communication technology integration within the practicum

Atef Abuhmaid

Faculty of Educational Sciences, Middle East University, Amman, Jordan

Email address:

A_abuhmaid@yahoo.com

To cite this article:

Atef Abuhmaid. Information and Communication Technology Integration within the Practicum. *Science Journal of Education*.

Vol. 1, No. 5, 2013, pp. 51-59. doi: 10.11648/j.sjedu.20130105.11

Abstract: This study aimed at exploring the extent of Information and Communication Technology (ICT) utilization by Classroom Teacher program at the faculty of education at Isra University during the practicum. The sample of the study consisted of 77 student teachers who had made been enrolled and participated in field visits as part of the practicum as well as the five supervisors at Isra University. The findings of the study illustrated weaknesses in both student teachers' preparation courses on how to use ICT effectively across the curriculum, and ill execution of the practicum.

Keywords: Practicum, Pre-service Teacher Education, ICT Training, Professional Development, Educational Technology

1. Introduction

Information and Communication Technology (ICT) revolution has impacted every facet of education as well as all other social sectors. Rapidly, ICT is gaining ground in all aspects of education leaving no choice for schools and educational institutions but to try to find their ways in the face of this technological onslaught. However, education systems, as well as educational sectors within them, are widely varied in their responses and paces of adaptation. As pressure has been mounting on education systems to respond effectively to technological changes happening beyond school walls, initiatives have been pouring into schools aiming to improve educational practices and outcomes to meet the demands and needs of the 21st century. In this context, over the last two decades teacher training has attracted more attention due to firstly, the failure of early attempts of excessive emphasis on technology itself to improve education, and secondly, the mounting literature stressing that educational improvement should go through teachers' consent, willingness, and competence [1, 36] as they are the primary agents of any educational change and the final arbiters of classroom practice [8, 13, 17, 47].

There has been increasing realization among educators and policy makers that teacher training – both pre and in-service – on ICT integration across the curricula is an essential component for ICT integration into education. In Jordan, schools countrywide have been provided with computer labs as part of the educational system's move to

reforming schooling for the knowledge-based economy [1]. In parallel to the Ministry of education's efforts to empower schools with new technologies, teacher training has also attracted increasing appreciation and more emphasis. Several ICT-related training courses were adopted by the education system for in-service teachers. Nevertheless, in general teachers did not have adequate knowledge and skills of how to integrate ICT in the curriculum [1]. Understandably, the first step in preparing teachers to effectively utilize ICT in the curriculum occurs during pre-service teacher education. Thus, the current study investigated ICT utilization within the practicum in pre-service teacher.

1.1. The Need for Practicum

Field practicum is distinguished from other learning practices as it is an active learning process [27]. In 1861, the Committee on State Normal Schools in California urged creating schools which train teachers on the "craft skills" such as planning, organizing, and using instructional materials and technology in teaching [33]. This was an early realization that teachers need more than knowledge and mind-learning, rather, they need practical experiences in implementing what they learn into practice. Notwithstanding, there is still a gap between education institutions which provide teacher training and they are still being as ineffective, unresponsive to new demands, and remote from practice [12]. The gap between what is included as part of teacher preparation programs and the real teaching and learning environment appears to be a global issue. For in-

stance, in the United States, a study found that teacher education institutions do not adequately prepare student teachers in order to utilize ICT in their future career [41], especially that teachers are accused of "*Missing the Tech Upheaval*" [37]. In spite of a large body of the literature emphasizing the importance of the practicum in teacher education [33, 40], teacher education programs still deal with it superficially as they are heavily focused on mind-learning through lecturing with minimum attention paid to practice [32]. Nevertheless, there is an emphasis on the importance of "field experience" or "teaching practicum" in pre-service teacher education programs [21].

A common problem in teacher education is decontextualization [25]. Clearly, learning swimming cannot be achieved by reading a book explaining swimming maneuvers. Likewise, surgeons cannot practice surgeries by reading books about how to operate a surgery. Rather, professionals need practical experiences in order to be able to implement theoretical knowledge in practice. The practical experiences give professionals the chance to make sense of theories and abstract concepts. This rule of thumb can be found in most areas of expertise and professions; such as piloting, swimming, hairdressing, and construction. On the other hand, there is a misconception that teaching is not that difficult [16]. As a result, faculties of education attract only the lower achieving students on the academic scale [43]. In addition, student teachers are usually left alone while they try to piece together what they learn through theoretical courses over a period of several years of study. However, the process of students' transformation into teachers is a combination of complex events which need to take place in both universities and schools [26].

The primary mission of pre-service teacher education is to build social fabric which is built on three types of relationships: interinstitutional, intrainstitutional, and transinstitutional [18]. That is, pre-service programs are meant to create relationships within the university, with other universities and schools where they will eventually put into practice, and with broader professional communities. According to [3], student teachers find the practicum a great opportunity to implement what they had learned in theoretical courses as they implement teaching methods in real teaching contexts. Furthermore, the practicum does not only improve students' specialized knowledge but also their general knowledge as they interact with the cooperative teachers and supervisors in different setting from the lecturing room during their study.

1.2. ICT in Pre-Service Education

As social institutions, schools should be responsive to the emerging and changing needs in the society by training their students to deal properly with them. A major trend of schooling change nowadays is ICT adoption by all levels of education systems worldwide. Thus, the pressure has been high on teacher education programs to effectively prepare student teachers to deal with ICT in schools.

As ICT is increasingly available in schools teachers are

required to master skills in order to utilize ICT in the curriculum. In spite of some dispute over the required skills by teachers to be considered ICT *competent*, the literature has identified two levels of mastery of ICT for teachers and therefore should be considered by teacher preparation programs:

Level (1) ICT skills which enable teachers to use and deal with ICT by effectively locating, retrieving, saving, manipulating, and presenting data in meaningful forms [10, 30, 31, 38, 41, 45].

Level (2) Pedagogical use of ICT which is vital for teachers to learn how to implement ICT skills to classroom practices [19, 22, 43, 46].

A large body of research has stressed that ICT skills, although essential, are not enough for teachers to use ICT pedagogically [22, 43, 46]. Thus, according to [7], learning isolated skills without linking them to real teaching practices can have little impact on classroom teaching. Therefore, it is necessary for teacher education programs to consider the two levels in pre-service courses.

1.3. Practicum and ICT-Related Courses at Isra University

Al Isra University is located on the outskirts of Amman, the capital of Jordan. Of the four faculties constitute the university; the Faculty of Education is composed of two courses: Classroom Teacher and Childhood Education. The Classroom Teacher course aims to prepare student teachers to teach students grades 1–4 (ages 6–9). The course constitutes (132) credited hours of which six (6) credited hours assigned for the practicum near the end of the four-year program. The practicum as a capstone course was meant to be an integrative subject that familiarizes students with the teaching environment by providing them with practical experiences in teaching. As part of the practicum, students were assigned to local primary schools and encouraged to use ICT [24]. Students are asked and encouraged to develop and produce computerised instructional aids and materials to be used during the practicum. These aids were usually PowerPoint presentations besides the traditional instructional aids. Student teachers are evaluated by their supervisors and the cooperative teacher as well as the cooperative.

Pre-service teacher education providers have been under pressure to ensure that its students are prepared to use ICT across the curriculum when they graduate and the Faculty of Education at Isra University is no exception. Considering that ICT has become a matter of fact, as all Jordanian schools have at least one computer lab [1], teachers are required to utilize them.

Student teachers at the Faculty of Education undertake three ICT-related subjects: Computer Skills (1) and Educational Computer. The Computer Skills (1) subject is a prerequisite for the Educational Computer subject focusing merely on a general introduction to computers including knowledge and basic skills (e.g. word processing, spreadsheets, and Internet browsing). In addition, the Educational Computer subject is the main course that tackles the im-

plementation of ICT skills across the curriculum by teachers and students. The course focuses on providing students with basic theories of the educational computer and its importance in education, as well as areas in education in which computers are used and the impact of using the Internet and multimedia in education. In addition, the course aims to provide students with skills to produce educational programs using Visual Basics, PowerPoint, and Front Page as well as enabling them to evaluate educational software[24].

2. Methodology

The present study investigated the integration of ICT during the practicum at Isra University. The investigation focused on student teachers' utilization of ICT during the practicum. Both questionnaires and interviews were used to investigate the issue of concern in order to understand "more fully, to generate deeper and broader insight, to develop important knowledge claims that respect a wider range of interests and perspectives" [20, p.7].

The combination of both quantitative and qualitative methods of research can help researchers to study a phenomenon from different perspectives and collect a variety of information [11, 20, 42, 47], which is, [42], a significant advantage for researchers because it can "expand the scope of, and deepen their insight from, their studies" (p.246). This aspect of the mixed methods approach can reflect upon better understanding and more warranted defensible claims [6, 29].

2.1. Research Questions and Objectives

The current study was driven by a practical question as whether ICT-related courses provided for student teachers at Isra University are adequate in preparing them to utilize ICT during their practicum. Student teachers at the university undertake two ICT-related courses before they enroll for the practicum near the end of their four-year undergraduate study. The focus of the study, therefore, is to gain deeper understanding of how effective the courses in providing student teachers with the knowledge and skills required for dealing effectively with ICT during their practicum.

Specific objectives were to clarify:

- Whether ICT is used by student teachers during their practicum.
- Whether student teachers feel confident in using ICT during their practicum.
- Whether ICT-related courses are adequate in preparing student teachers to ICT during their practicum.

2.2. Significance of the Study

The sound value of the present study stems from its focus on a crucial stage of teacher preparation which is the practicum. Considering that this is the first real chance for student teachers to have direct contact with real teaching contexts, they current study tried to shed enough light on issues

that facilitate or hinder the effectiveness of integrating ICT within the practicum.

2.3. Statement of the Problem

The practicum is a crucial component of pre-service teacher education, however, personal experiences showed that its role is widely under estimated by the both the education system and educational institutions that provide teacher education. Considering that ICT has become a matter of fact in both schools and the society at large, the current study attempted to investigate this issue by focusing on both student teacher and supervisors at Isra University, which is one of the providers of teacher education courses in Jordan.

Research Instruments

The current study utilized both questionnaires and interviews in order to gather data. The questionnaire was directed to student teachers who had enrolled in the practicum subject and who had spent time in the field in their assigned schools. The questionnaire comprised 24 items which investigated student teachers' knowledge, attitudes, and experiences with ICT integration during their practicum. The questionnaire was designed to have dichotomous responses in order to give clear (YES/NO) answers. The questionnaire enabled the researcher to collect data from a large number of student teachers during the second semester 2009/2010. According to Cohen *et al.* [9], the questionnaire is a widely used instrument for data collection as it provides a structured and straightforward analysis of information.

In addition, six face-to-face interviews were conducted in the two schools in the participants' native language (Arabic language) with all the supervisors at the IU. The purpose of interviewing supervisors was to gain a different perspective on the practicum and to document their experiences with student teachers' practice in their first real teaching experiences. Reference[46] states that "the interview is the main road to multiple realities" (p.64), therefore, interviews are used in qualitative research to obtain data from different sources to provide different perspective at the issue of concern. Thus, in order to incorporate another line of data sources and to verify and explain data obtained through the questionnaire, the supervisors were interviewed. The interviews were semi-structured in nature in order to guide the discussion without being limiting.

2.4. Population and Sample of the Study

Out of the 120 student teachers who were enrolled in the practicum at Isra University during the second semester of the academic year 2009/2010, 77 students, who had started their fieldwork as part of the practicum, completed the questionnaire. All participants were near the end of their undergraduate study.

Furthermore, university supervisors visit student teachers in schools in order to guide and evaluate them. The interview is believed to be the main road to multiple realities" [46, p.64], therefore, six supervisors at the university were interviewed once or twice. The interviews were found to pro-

vide great value to the research by giving the opportunity to explore areas of investigation that might be hard to cover by questionnaires and therefore, helped in including supervisors' perspective on ICT implementation during the practicum.

2.5. Data Analysis

Simple descriptive frequency tabulation was the main means for analysing the questionnaire. For the interviews, thematization and categorisation were used to make sense of the data collected. Themes and patterns were matched and compared between the two case studies. However, for the final discussion of findings, both quantitative results and qualitative findings were integrated in order to confirm/disconfirm, cross-validate, and gain in-depth understanding [11, 47] of student teachers' experiences with ICT-related subjects and the practicum at the Isra University. Furthermore, the findings then were compared with other studies.

3. Results and Discussion

Table 1: Students' experiences with ICT at Isra University

Item	Frequency	%
Computers at the university helped me in using computers	55	71.4
The courses at the university were adequate to use computers for teaching	44	57.1
I need more training in order to use computers in teaching	62	80.5
I lack computer skills (e.g. Microsoft Word, Presentation, email, internet, ...)	23	29.8
I do not know how to use computer skills in teaching my subject	23	29.8

On the other hand, the supervisors expressed their doubts in students' ICT skills leave alone their ability to integrate them pedagogically. Overall, supervisors indicated that student teachers did not have the skills to use computers and therefore, use them across the curriculum. DrHoda spoke with frustration:

"When I first came to the university, I had prepared myself to use computers, but there were big challenges with students and the university. For instance, when I ask students to use computers as part of the practicum, students who are non-computer users would say: 'what is she saying?' [Referring to their disagreement]. In addition, the university would advise me to "take it easy" when it comes to computer use, that is, I should accept anything made on computers from students which usually was made by other people rather than the student him or herself."

In addition, while Dr Khalid acknowledged that the subjects were "good", he indicated that these courses were "not enough [...] as students cannot use computers properly."

DrZiad also confirmed this point when asked about his students' competence in using computers in their teaching after undertaking the provided courses by the university:

"From what I have seen, I haven't noticed this [using computers] in practice. When students are asked to prepare

Findings from the data analysis revealed several issues regarding the integration of ICT during the practicum by student teachers at Isra University including: student teachers' competence to use ICT, the situation of the cooperative school, follow-up for student teachers, and attitudes towards ICT and teaching.

3.1. Student Teachers' Competence to Use ICT

As indicated earlier, Isra University provides students at the Faculty of Education with two ICT-related subjects to prepare teachers to use ICT across the curriculum. Clearly, two subjects with only (6) credited hours fall short of even familiarising students with computers. The findings of the study showed that less than half (44.1%) of the student teachers used computers as part of their practicum. Although most participants (71.4%) believed that computers at Isra University improved their computer skills, and 57% of them believed that computer-related subjects were adequate to use computers, most of them asked for more ICT training. In addition, 23 (29.8%) students indicated that they did not know how to use their computer skills across the curriculum.

a computerised lesson, they go for the ready ones, which indicate that their skills are inadequate." (DrZiad, 23 April 2009)

Therefore, Ziad suggested conducting intensive training courses and workshops for student teachers on how to use computers across the curriculum and to place a number of computers in classrooms for an easy access by students and student teachers. Additionally, Dr Khalid suggested "micro teaching" as a way in which student teachers can be taught and given the chance to practice in real teaching and learning environment how to integrate ICT across the curriculum before they go to schools.

Clearly, six hours as a practicum for student teachers is a small proportion of their university study. However, this is shared by other faculties of education in Jordanian universities. Reference[4] compared the credited hours' allocation by several Jordanian universities (Table 2). Obviously, IsraUniversity falls below the average among other Jordanian universities regarding hours dedicated to the practicum. However, only Jordan University and Mu'tah University have more credited ours dedicated for the practicum than Isra while the rest have the same number or less indicating that the situation at Isra University is shared with other universities in Jordan.

Table 2: Distribution of Credited hours of classroom teachers program in Jordanian public universities [4, p.254]

University	General Courses	Academic Courses	Educational Courses	Teaching Practice	Total
Jordan	36	51	39	12	126
Hashemite	33	51	48	6	132
Yarmouk	21	72	39	6	132
Mu'tah	31	39	60	9	130
Al-Albait	36	15	75	3	126
Al-Husein	27	39	60	6	126
Average	30.7	44.5	53.5	7	128.7

3.2. The Cooperative Schools' Context

The dominating school culture can have great impact on student teachers. It is expected that when ICT utilization by schools is missing from the daily life of students and teachers, student teachers would unlikely develop positive attitude towards ICT. The complaints of student teachers and supervisors were loud enough that ICT utilization was not weaved into the daily practice of the cooperative schools.

Reference[39] stated that a successful pre-service teacher education depends on interaction between school and university-related factors (Figure 2).

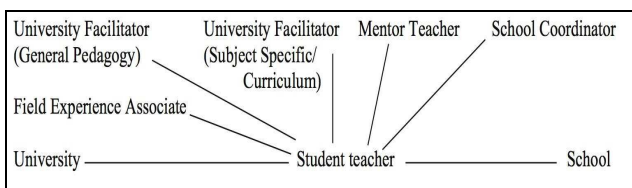


Figure 2: Student teachers and partnership between schools and universities (Adapted from [37, p. 276])

The current study highlighted several school-related issues, which appeared to play a major role in student teachers' utilization of ICT during the practicum, including: infrastructure, computer lab coordinators, and cooperative teachers.

3.2.1. Infrastructure

All participants in both the questionnaire and interviews pointed to a mismatch between the Ministry of Education's rhetoric and the actual situation in schools. That is, schools lacked acceptable ICT infrastructure to integrate across the curriculum. Even when computers were available in the school, they were used by the cooperative teacher not by the student teacher which kept them distant from having hands-on experiences with ICT and stay observant to what the teachers might do with computers.

Student teachers might feel frustrated realizing that what they had learned during their graduate studies is implacable as they find schools not equipped to incorporate ICT across the curriculum. DrHoda pointed to this issue citing what students would say when she asked them to do ICT-related

activities during their practicum: "you are stressing on computer usage but schools do not provide this, so, there won't be any implementation of what you are asking." DrZiad also observed during his visits to the cooperative schools that they lacked proper ICT infrastructure to support learning and teaching. In addition, he pointed that computers in schools were available only in computer labs which restricted access to them. Furthermore, only 17 (22%) students agreed with the statement "the cooperative school provides computers to be used in teaching" and 27 (35%) reported that schools had acceptable infrastructure (Table 3).

Table 3: ICT availability in the cooperative schools

Item	Frequency	%
The cooperative school provides computers to be used in teaching	17	22
There is an acceptable infrastructure	27	35
The school has internet connection	24	31.1
There is a computer lab supervisor	29	37.6
The computer lab supervisor is cooperative while using the lab	14	18.1

Even the cooperative schools that had suitable ICT infrastructure (e.g. computers and internet), they were usually under used. According to one student teacher,

"[in] the cooperative schools, there are computers and net [internet] but there are specific times for using computers which has to be under the supervision of the teacher [the cooperative teacher]" (SQ.8).

Another student teacher expressed her frustration:

"computers are not used by teachers in the cooperative school except by teachers who teach the computer subject. Each school has computers without being used except by that subject only." (SQ.21)

Therefore, one student teacher hoped that

"the University chooses the (cooperative) school based on the teaching and learning aids available which gives the student an opportunity to learn within the school as a trainee teacher." (SQ.5)

Clearly, increasing the number of computers in schools does not automatically increase teachers' and students' use of these machines (HanneleNiemi, 2003), nevertheless, proper access to ICT is a precondition for ICT utilization by teachers [44]. Reference [2] found that the lack of teaching aids in the cooperative schools and the difficulty of obtaining them were the most important problems faced student teachers during the practicum. In addition, he concluded that the more problems student teachers face during the practicum the less positive attitudes they develop towards their future career as teachers. Therefore, it is highly expected that when the cooperative schools are selected of those which have ICT as an active ingredient of teaching and learning practices can motivate student teachers and encourage them to develop ICT-related skills for teaching.

3.2.2. Computer Lab Coordinators

Computer lab coordinators in each school are the gatekeepers to using ICT in schools. They are responsible from taking care of the labs and to facilitate students' and teachers' access to ICT. In addition, they are supposed to troubleshoot technical problems when computer labs are used. Twenty-nine (37.6%) student teachers said that the cooperative schools had computer lab coordinators. However, only 14 (18.1%) of them reported that the computer lab coordinators were cooperative and provided them with access and assistance (Table 3). The cooperation of computer lab coordinators is important especially that the only access to computers in schools is through these people. Therefore, if these coordinators are restrictive to students' access to ICT in schools, they add another sizable obstacle to their attempt to utilize ICT. Supervisors also highlighted this problem, for instance, Dr Ali indicated that a major problem for the use of ICT by student teachers was the non-cooperative computer labs coordinators especially when this is combined with the cooperative teachers' lack of interest in computers. In earlier study, the researcher found that computer lab coordinators had vital role in the overall of ICT adoption at the school level as they can facilitate or restrict ICT utilization by teachers and students [1]. In addition, the coordinators can play even a greater role by providing pedagogical assistance instead of merely technical support to teachers and students when they use computer labs[15].

3.2.3. The Cooperative Teacher

The cooperative teacher's role is crucial in supervising and guiding student teachers' utilisation of ICT during the practicum. However, this has been traditionally hallmarked by the sink-or-swim supervision due to cooperative teachers' unwillingness (or inability) to help student teachers to bridge the gap between the university-based theory and the school-based practice [29].

Furthermore, there were issues regarding the cooperative teachers. That is, teachers themselves are not prepared to integrate ICT appropriately across the curriculum in order to showcase the proper use of ICT in real teaching/learning situations (Hoda). In addition, DrZiad indicated that cooperative teacher did not coordinate with student teachers even regarding the subject of the lesson; therefore, student teachers would attend lessons without any prior preparation. He also added that student teachers found it difficult to obtain school textbooks because schools did not have extra copies.

3.3. Follow-up for Student Teachers

The practicum is the first chance for student teachers to put into practice what they learn during their under graduate studies which requires lots of follow up and guidance provided by their supervisors and cooperative teachers. Nevertheless, it becomes clear that the follow-up was improperly implemented. Supervisors indicated that they visited each

cooperative school only twice or three times per semester, considering that four to six student teachers were scheduled to each cooperative school. In the current study, supervisors pointed to the proximity of the cooperative schools, and large number of students they supervised as the main issues that constrained them from providing proper follow-up to students including.

Mostly, student teachers were scheduled to visit distant cooperative schools and to attend university classes at the same day. Therefore, students needed to leave schools as early as 10:30AM (Ziad) as they had to travel a long distance to attend classes after 12:30PM at the University giving student teachers minimum chances to learn from the cooperative teacher and to practice themselves what they had learnt. Dr Ali said that student teachers stay away from using computers due to the lack of time and incentives, therefore, they did not even visit computer labs in the cooperative schools.

Moreover, supervisors indicated that they supervised large number of students besides their teaching loads (see Table 4). DrZiad supervised 23 student teachers which required him to travel in different directions to the cooperative schools and he suggested that the maximum number of students to supervise should be between 12 and 15 for each supervisor.

Table 4. Supervisors and the number of students they supervised

Supervisor	No. of student teachers supervised
DrHoda	20
DrZiad	23
Dr Ali	23
Dr Khalid	21
DrSalim	22
Dr Jabir	23

According to [26], the follow-up provided to student teachers by their university supervisors during their practicum has been traditionally hallmarked by the *hit-and-run* supervision strategy, which does not allow supervisors to develop connection with their students' development as teachers.

Furthermore, student teachers expressed disbelief in their supervisors' ability to guide them during their utilisation of computers in their teaching. Only five student teachers said that their supervisors supervise them during their use of computers in the classroom. In addition, only 42 (54.5%) student teachers believed that their supervisors were competent to help them overcome computer problems during their use of computers in teaching which contradicts the supervisors' belief as they all indicated that they were able to help students in overcoming such problems (Table 5).

Table 5: Supervisors and the use of computers during the practicum

Item	Frequency	%
My supervisor encourages me to use computers during the practicum	42	54.5
My supervisor helps and guides me while using computers in the classroom.	35	54.4
My supervisor visits me in the classroom during the practicum	71	92.2
My supervisor can help me to overcome computer-related problems during teaching subjects	42	54.5
I use the email to communicate with my supervisor	18	23.3

3.4. Attitudes towards ICT and Teaching

Seventy five (97.4%) student teachers and all supervisors believed in the potential benefits of computers to education as it can improve the quality of teaching and learning. Therefore, all supervisors reported encouraging student teachers to use computers during the practicum. DrHoda underlined:

“this generation grows up with technology. This generation has lots of things to play with; it is what we call “the digital age” as the student has the ability to solve technology-related problems while grownups cannot. So, restricting students in the classroom by restraining them to chairs and asking them not to move has a lot of restrictions as things are not the same as before anymore.”

Dr Khalid linked computer use with students' achievement saying:

“I encourage my students to use the computer as it saves efforts and time, in addition, using several teaching aids can attract students' attention which reflects in the end on their achievement.” (Dr Khalid, 26 April 2009).

Forty-two (54.5%) student teachers said that they were encouraged by their supervisors to use computers during the practicum. However, only 18 (23.3%) of them reported communicating with their supervisors using emails. Therefore, it was clear that the emphasis was on student teachers' fulfillment of the requirement of the practicum by developing digital materials without ensuring and guiding their use of ICT as a powerful means for teaching and learning.

DrHoda linked the lack of students' desire to explore and use computers in their teaching during the practicum to larger problem engulf teaching as a profession. DrHoda asserted that student teachers chose teaching as a profession not out of interest in teaching, rather, it is a matter of availability and pressure from parents especially on female students to study this course. That is, as most students come from conservative cultures, parents might direct their female students to study particular subjects which have less mixing with male colleagues at work after graduation. This point can be placed in a context when we know that the education system of Jordan as mostly a single-sexed one as boys and girls study in separate schools and so teachers. Therefore, from religious and cultural points of view, the teaching career can be more appropriate especially from female students. Dr Ali confirmed the lack of interest in teaching among student teachers saying that “the lack of devotion to

teaching' was a major problem faced him during the practicum. This confirms that there is a misconception that teaching is not that difficult; therefore, faculties of education attract only the lower achieving students on the academic scale [16, 43]. However, this can be linked to findings from earlier studies pointing to “poor working conditions” for Jordanian teachers as a major threat to implementing any education initiatives [5, p.170].

4. Conclusions

The Faculty of Education at IU requires students to undertake two main subjects which aim at providing them with both knowledge and skills regarding computers. The two subjects introduce students to both ICT skills and pedagogical use of ICT. In addition, students are required to spend time in schools as part during the practicum. However, when student teachers go into schools, they realize, as do their supervisors, that they lack both levels of ICT skills (vs. ICT skills and pedagogical use of ICT across the curriculum). Furthermore, the situation in schools and the slim chances for them to have access to ICT, when it is available, in the cooperative schools, are additional factors to keep students teachers away from thinking of ICT and its potential benefits to their future career as teachers.

Clearly, it became clear that more careful attention needs to be paid to the selection of the cooperative schools in order to choose schools that have the infrastructure and the will to adopt and implement ICT across the curricula. Furthermore, a better and easier access to ICT during the undergraduate study as well as more ICT-related subjects are needed in order to familiarize students with ICT and to showcase its potentials into teaching and learning.

References

- [1] Abuhmaid, A. (2009). ICT Integration Across Education Systems: The experience of Jordan in educational reform. Saarbrücken, Germany: VDM Verlag Dr. Müller.
- [2] Al-Abadi, H. M. (2004). Practical Education Problems as Perceived by Class-teacher Students and their Attitudes Towards Teaching. *Dirasat: Educational Sciences*, 31(2), 242-253.
- [3] Al-Qemesh, M., & Al-Kharabsheh, O. (2009). An Evaluation of the Practical Training Programs for Special Education

- Diploma Students in the Jordanian Community Colleges from Trainees' and Cooperative Teachers' Perspectives. *Journal of Educational and Psychological Sciences* 10(1), 41-66.
- [4] Al-Weher, M., & Abu-Jaber, M. (2007). The Effectiveness Of Teacher Preparation Programs In Jordan: A Case Study. In T. Townsend & R. Bates (Eds.), *Handbook of Teacher Education: Globalization, Standards and Professionalism in Times of Change* (pp. 241-266). Dordrecht, The Netherlands: Springer.
- [5] Alshurfat, S. S. (2003). The Role of Primary School Teachers in Education Change in Jordan. Unpublished Doctoral dissertation University of Western Sydney.
- [6] Brewer, J., & Hunter, A. (1989). *Multimethod Research: A Synthesis of Styles*. NewburyPark: Sage Publications.
- [7] Browne, D. L., & Ritchie, D. C. (1991). Cognitive apprenticeship: a model of staff development for implementing technology in schools. *Contemporary Education*, 64(1), 28-34.
- [8] Cochran-Smith, M. (2004). Taking Stock in 2004: Teacher Education in Dangerous Times. *Journal of Teacher Education*, 55(1), 3-7.
- [9] Cohen, L., Manion, L., & Morrison, K. (2003). *Research Methods in Education* (5th ed.). New York: RoutledgeFalmer.
- [10] Computer Literacy USA. (2007). The computer literacy initiative. Retrieved February 15, 2008 from <http://www.virtualbill.net/clu/index.html>
- [11] Creswell, J. W. (2003). *Research Design, qualitative, quantitative, and mixed method approaches* (2nd ed.). California: Sage Publications.
- [12] Darling-Hammond, L. (2008). The Case for University-Based Teacher Education. In M. Cochran-Smith, S. Feiman-Nemser, D. J. McIntyre & K. E. Demers (Eds.), *Handbook of Research on Teacher Education: Enduring Questions in Changing Contexts* (3rd ed., pp. 334-346). New York: Routledge.
- [13] Doyle, W., & Ponder, G. A. (1977). The Practicality Ethic in Teacher Decision-Making. *Interchange*, 8(3), 1-12.
- [14] ESCWA. (2005). National Profile for the Information Society in Jordan. Retrieved June 10, 2007, from http://www.escwa.org.lb/wsis/reports/docs/Jordan_2005-E.pdf
- [15] European SchoolNet. (2005). Assessment Schemes for Teachers' Ict Competence- a Policy Analysis. Retrieved August 20, 2006, from http://www.eun.org/insight-pdf/special_reports/PIC_Report_Assessment%20schemes_insightn.pdf
- [16] Fullan, M. (1993). *Change Forces: Probing the Depths of Educational Reform*. London The Falmer Press.
- [17] Gillingham, M. G., & Topper, A. (1999). Technology in Teacher Preparation: preparing teachers for the future. *Journal of Technology and Teacher Education*, 7(4), 303-321.
- [18] Gomez, L. M., Sherin, M. G., Griesdorn, J., & Finn, L.-E. (2008). Creating Social Relationships: The Role of Technology in Preservice Teacher Preparation. *Journal of Teacher Education*, 59(2), 117-131.
- [19] Graham, S., & Thornley, C. (2000). Connecting Classrooms in Pre-service Education: Conversations for Learning. *Asia-Pacific Journal of Teacher Education*, 28(3), 235-245.
- [20] Greene, J. C., & Caracelli, V. J. (1997). Defining and Describing the Paradigm Issue in Mixed-Method Evaluation. In J. C. Greene & V. J. Caracelli (Eds.), *Advances in Mixed-Method Evaluation: The Challenges and Benefits of Integrating Diverse Paradigms* (pp. 5-17). San Francisco: Jossey-Bass Publishers
- [21] Gronn, D., Romeo, G., McNamara, S., & Teo, Y. H. (2013). Web Conferencing of Pre-service Teachers' Practicum in Remote Schools. *Journal of Technology and Teacher Education*, 21(2), 247-271.
- [22] Hakkarainen, K., Muukonen, H., Lipponen, L., Ilomaki, L., Rahikainen, M., & Lehtinen, E. (2001). Teachers' Information and Communication Technology (ICT) Skills and Practices of Using ICT. *Journal of Technology and Teacher Education*, 9(2), 181-197.
- [23] Information Technology Association. (2003). Jordan's Information Society: A Fast Growing Sector for a Transforming Nation. Paper presented at the First Regional Preparatory Conference. Retrieved August 22, 2004, from <http://www.escwa.org.lb/wsis/conference/documents/12-jordan.pdf>
- [24] IsraUniversity. (2009). Class Teacher Courses. Retrieved April 12, 2010, from http://www.isra.edu.jo/education/teacher_courses.htm
- [25] Jones, A. J. (2001, July 29–August 3). Integration of ICT in an Initial Teacher Training Course: Participants' Views. Paper presented at the Seventh World Conference on Computers in Education, Copenhagen.
- [26] Kiggins, J., & Cambourne, B. (2007). The KnowledgeBuilding Community Program: A Partnership for Progress in Teacher Education. In T. Townsend & R. Bates (Eds.), *Handbook of Teacher Education: Globalization, Standards, and Professionalism in Times of Change* (pp. 365-380). Dordrecht, Netherland Springer.
- [27] Lee, M., & Fortune, A. E. (2013). Patterns of Field Learning Activities and Their Relation to Learning Outcome. *Journal of Social Work Education*, 49, 420-438. doi: 10.1080/10437797.2013.796786
- [28] Louden, W. (1993). Learning to Teach and Teaching to Learn. *Australian Journal of Teacher Education*, 18(2), 51-53.
- [29] Mark, M. M., Feller, I., & Button, S. B. (1997). Integrating Qualitative Methods in a Predominantly Quantitative Evaluation: A Case Study and Some Reflections. In J. C. Greene & V. J. Caracelli (Eds.), *Advances in Mixed-Method Evaluation: The Challenges and Benefits of Integrating Diverse Paradigms* (pp. 47-59). San Francisco: Jossey-Bass Publishers
- [30] Mason, R., & Rennie, F. (2006). *ELEARNING: The Key Concepts*. London: Routledge.
- [31] Mathew, K., Callaway, R., Letendre, C., Kimbell-Lopez, K., & Stephens, E. (2002). Adoption of Information Communication Technology by Teacher Educators: one-on-one coaching. *Journal of Information Technology for Teacher Education*, 11(1), 45-62.

- [32] Mattingly, H. T. (1997). Seeking Balance in Higher Education. *Conservation Biology* 11(5), 1049-1052.
- [33] McDiarmid, G. W., & Clevenger-Bright, M. (2008). Rethinking teacher capacity. In M. Cochran-Smith, S. Feiman-Nemser, D. J. McIntyre & K. E. Demers (Eds.), *Handbook of Research on Teacher Education: Enduring Questions in Changing Contexts* (3rd ed., pp. 134-156). New York: Routledge.
- [34] Niemi, H. (2003). Towards a Learning Society in Finland: information and communications technology in teacher education. *Technology, Pedagogy and Education*, 12(1), 85-103.
- [35] Novak, L. (2009, Jan 29). Teachers Missing the Tech Upheaval. *The Advertiser*, p. 13.
- [36] Pearson, J. (2003). Information and Communications Technologies and Teacher Education in Australia. *Technology, Pedagogy and Education*, 12(1), 39-58.
- [37] Pungur, L. (2007). Mentoring As The Key To A Successful Student Teaching Practicum: A Comparative Analysis. In T. Townsend & R. Bates (Eds.), *Handbook of Teacher Education: Globalization, Standards and Professionalism in Times of Change* (pp. 267-282). Dordercht, The Netherlands: Springer.
- [38] Ramsey, G. (2000). *Quality Matters. Revitalising Teaching: Critical Times, Critical Choices*: NSW Department of Education and Training, Sydney.
- [39] Rogers, G. (2004). Incorporating ICT in Practicum. In Y. C. Cheng, K. W. Chow & M. M. C. Mok (Eds.), *Reform of Teacher Education in the Asia-Pacific in the New Millennium: Trends and challenges*. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- [40] Sandelowski, M. (2000). Focus on Research Methods: Combining Qualitative and Quantitative Sampling, Data Collection, and Analysis Techniques in Mixed-Method Studies. *Research in Nursing & Health*, 23(3), 246-255.
- [41] Sarason, S. B. (1993). *The Case for Change. Rethinking the Preparation of Educators*. San Francisco: Jossey-Bass Publishers.
- [42] Shuldham, M. (2004). Superintendent Conception of Instructional Conditions That Impact Teacher Technology Integration. *Journal of Research on Technology in Education*, 36(4), 319-344.
- [43] Somekh, B., & Davis, N. (Eds.). (1997). *Using Information Technology Effectively in Teaching and Learning*. London: Routledge.
- [44] Stake, R. E. (1995). *The Art of Case Study Research*. Thousand Oaks: Sage Publications.
- [45] Tashakkori, A., & Teddlie, C. (1998). *Mixed Methodology, combining qualitative and quantitative approaches*. London: SAGE Publications Ltd.
- [46] Tawalbeh, M. (2001). The Policy and Management of Information Technology in Jordanian Schools. *British Journal of Educational Technology*, 32(2), 133-140.
- [47] Townsend, T., & Bates, R. (2007). Teacher Education in a New Millennium: Pressures and Possibilities. In T. Townsend & R. Bates (Eds.), *Handbook of Teacher Education: Globalization, Standards and Professionalism in Times of Change* (pp. 3-24). Dordercht, The Netherlands: Springer.