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PREPARING PROSPECTIVE TEACHERS TO INTEGRATE ICT PRACTICES IN CLASSROOM SETTINGS

Abstract

The research study focused on integration of ICT in teacher education programs to prepare technology efficient teachers. In the digital age, public schools require teachers to have competent technology skills and be able to effectively implement educational technology in classrooms. Therefore, it is logical for the teachers to incorporate technology into the lessons they prepare to teach as teacher .The objectives of the study were to assess the strengths and weaknesses of syllabus of computer related subjects taught at B.Ed level and to identify the problems faced by the prospective teachers in learning computer related subjects. The sample of the study consisted of students of batch (Fall 2009-2010).13 students from morning program and 73 students from evening program belonged to M.Ed were randomly selected as sample for the study. Questionnaire was developed for data collection. The study concluded that best approach for educating prospective teachers about using computers and prepare them to use ICT was to integrate computers and other new technologies into the teacher education curriculum and programs.

Introduction

Information and Communication Technology (ICT) is playing key role in the training professional development of teachers' world over and integration of ICT in teacher education programs has proved very beneficial with a view to make use of computer technology in schools common and popular.

The frequent use of ICT is improving the quality of teaching and learning and today's classroom setting cannot be complete and

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effective with inclusion of computer technology.

Instructional Technology is giving impetus to pedagogy field in developed counties They have transformed the conventional curriculum of teacher educational institutions into technology based curriculum and teacher educators are provided all possible support to integrate technology into their day to day teaching practices and there educators are better prepared to use ICT tools effectively in teaching learning process. (Haddad & Jurich 2002).

The use of ICT is also becoming popular and common in developing world. India has advanced a lot in field of IT and its city Banglore is now famous in world as Silicon Valley of Asia Due to India's advancement in IT other sectors of national economy are also taking tremendous benefits from the computer technology and becoming advanced and technology oriented. Education Sector is also included in it. Teacher Education institutions have integrated IT in curriculum up to great extent and prospective teachers getting training there become well trained and they effectively integrate technology in schools, colleges and universities frequently. (Jaiswal, D., 2011). Pakistan is also in the race of becoming technology sufficient in the region and since the inception of Higher Education Commission, IT promotion in educational institutions were given high priority and then government allocated billions of rupees to the IT sector. IT Action Plan and Policy 2000 were developed and Dr Atta-ur-Rehman then Federal Minister of Information Technology announced IT policy in year 2000. For the implementation of this plan National Information and Communication Technology (NICT) strategy was build up in 2003 to improve the quality of education in Pakistan through the integration of modern technology at all levels of education including teacher education programs with the purpose that ICT will help to raise the teaching quality and enable teacher educators and prospective teachers to have easy access to wide range of teaching learning materials, (NICT ,2003)

ICT in teacher education is an emerging trend in Pakistan and in order to meet the challenge of Technology Integration in the school system Government of Pakistanis taking many initiatives which

includes to make curriculum of teacher education programs technology based so to prepare prospective teachers to use technology in the classrooms effectively. According to National Educational Policy (2009)".ICTs shall be utilized creatively to assist teachers and students with a wide range of abilities and from varied socio-economic backgrounds. ICTs shall be used to strengthen the quality of teaching and educational management" .Pp.45. But still Teacher Educational Institutions in the Sindh province are facing problems to effectively integrate technology in curriculum and also in the system. Prospective teachers are not provided all required facilities to learn properly the use of computer technology in the teaching or classroom settings. Quality of teacher's professional proficiencies are measured by the level of skills, attitude, knowledge, and understanding he or she exhibits to the teaching profession. Due to poor professional competence of teachers the whole standard of education failed to produce proper educated persons in the country (Academy for Educational Development (2005), DFID and USAID (2006)).

Rationale behind the research

The rationale behind the research study was to evaluate the strengths and weaknesses of the syllabus of computer related subjects taught at B.Ed level and also check the range of facilities and obstacles faced by prospective teachers for studying and understanding computer related subjects. The study also got perceptions of the prospective teachers about the technology related subjects. The study also evaluated the computer skills that prospective teachers acquire after completion of the B.Ed programs. The performance of prospective teachers and teaching methodologies they used in teaching of computer related subjects was also examined.

Objective of the Study

- To assess the strengths and weaknesses of syllabus of computer related subjects taught at B.Ed level.

- To identify the problems faced by the prospective teacher in learning this subject. Students

- To forward recommendations for effective preparation of prospective teachers to integrate ICT in their classroom settings.

Methodology

a. *Research Design*

This study is evaluative in nature, and a survey technique was used to conduct study, Survey questionnaire was developed for data collection.

b. Population and Sampling

The population of the study consisted of Prospective Teachers studying in different departments of Faculty of Education, University of Sindh, Hyderabad where courses of B.Ed, M.Ed and MA Education were taught. The sample of the study consisted of students of batch (Fall 2009-2010).13 students from morning program and 73 students from evening program belonged to M.Ed. were randomly selected as sample for the study.

c. Research Instruments

A questionnaire comprising of 23 items with three point Likert's scale was developed. Questionnaire was pilot tested with the help of expert views and suggestions and then a revised questionnaire was administered. Researcher personally administered questionnaire. Response rate remained 100 %.

Findings and Discussions

Table #01 showed that calculated value of $\chi 2$ was found to be 22.25 which is greater than the table value at 0.05 level. Hence the result is significant and (40%) of the teachers argued that they have little prior

knowledge of computers before getting admission in B.Ed programs.

Computer literacy means ability to tell the computer what you want it to do and understand what the computer says. To be computer literate amounts to be able to read, write and speak the language of the computer (Ajibade, 2006.) The successful use of technology in teaching practices, however, requires mastering of prospective teachers in computer skills. (Haugen et al., 2000). Therefore, Teacher educators need to help prospective teachers to facilitate them learning with computers efficiently.

Table # 02 to table #04 showed that calculated values of $\chi 2$ were found to be 27.75, 91.12 and 103 respectively, which are greater than the table value at 0.05 level. Hence the results are significant and the majority of the students agreed that computer should be taught as compulsory subject in teacher educational institutions. This argument is supported by Bitter (1989) that "Colleges of Education must have program requirements to insure adequate preparation for students to use the computer as a tool in their teaching" (p. 34).

Table #05 to table #07 showed that calculated values of $\chi 2$ were found to be 46, 14 and 20.87 respectively, which are greater than the table value at0.05 level. Hence the results are significant and the majority of the students (54%) were satisfied with the content taught during the programs, (60%) agreed that the ratio of theory and practical was appropriate and (55%) was accepted that syllabus was completed within time during B.Ed programs..

Table #08 to table # 10 showed that calculated value of $\chi 2$ was found to be 26.37, 30.87 and 320 respectively, which are greater than the table value at 0.05 level. Hence the results are significant. The (57.50%) of the respondents states that proper lab facilities was not provided to all of the students because there is insufficient numbers of computer as compared that number of students. (58.75%) of the respondent stated that majority of the computers were not in working order in computer laboratory.100% of the respondent agreed that there was no power backup facilities were available. Many developing countries have same problem as by Bakia (2000) states in his survey report "students per computer ratio in Barbados is 3, in Turkey is 40, in Chile

is 68-137 and in is Egypt 27."

According to Almohaissin, I. (2006) every teacher faced problem in integrating technology because of non availability of technical support or no solution of hardware problems.

Table #11 and table #12 showed that calculated value of $\chi 2$ was found to be 48.87 and 66.87 which are greater than the table value at 0.05 level. Hence the results are significant. The (62%) of the respondents stated that there were no lab assistant found during the practical hours .But 68.75% students agreed that teachers were present in computer laboratory during the practical hour. The Korte and Husing(2007) also found that lack of technical staff during class is very serious obstacle towards use of ICT in their practices.

Table #13 showed that calculated value of $\chi 2$ was found to be 20.12 which is greater than the table value at 0.05 level. Hence the result is significant. The 55% of the respondents were satisfied with methods of teaching in class. They agreed that teacher used variety of methods according to the content taught.

Table #14 and Table #15 showed that calculated value of $\chi 2$ was found to be 45.62 and 50.87 respectively, which are greater than the table value at 0.05 level. Hence the results are significant. The (66.25%) respondents said no they did not get any incentive during their job due to awareness about computers in terms of promotion but they agreed that after getting proper computer training now they are able to use computer effectively. But (66.25) % students agreed that they get benefit of getting job; because in interview it is clearly state that preference should be given to computer literate.

Table #16 to table #18 showed that calculated value of $\chi 2$ was found to be 41.12, 22.12 and 41.12 respectively, which are greater than the table value at 0.05 level. Hence results are significant. 47 % respondent said after completion of the course they are not evaluate yourself as an expert completely but 60 % students are not computer ill-literate, 46.25 % students are able to use Ms. Office effectively.

These findings are aligned with Lau and Sim (2008), Jegede et. al. (2007) and Cuckle et. al. (2000) whose studies found that majority of the teachers are competent in use of word processing software.

Table #19 and table #20 showed that calculated value of $\chi 2$ was found to be 16.62 and 32.5 respectively, which is greater than the table value at 0.05 level. Hence results are significant. The (50%) students had computer facilities at their homes. Due to rapid development in the use of modern technology accessibility is becoming easier and cost becoming cheaper. And telecommunication is also become easily access, 56.25% students can access internet at home.

Use of internet in Pakistan is dramatically increasing; Use of internet in Pakistan is on second highest number among SAARC countries that is 16.8%. According to World Bank statistics by State Bank of Pakistan (SBP) in July 2012 the 16% people use internet in Pakistan.

From Table #21 to 23 shows that calculated value of $\chi 2$ was found to be greater than the table value at 0.05 level. Majority of the students was used internet for chatting, E-mail, Searching material and for entertainment purpose. This finding agrees by Goel (2006) on the use of Internet in teacher education he found that a many teacher trainees use Internet for chatting, entertainment, email, browsing and research.

Recommendations

- Computer should be taught as a compulsory subject in all Teacher Educational Institutions.

- Government should provide Computer laboratories with sufficient numbers of computers to the teacher educational institutions and schools as per the strength of the students.

- Government should allocate separate budget for the establishment of computer laboratories at teacher educational institutions and schools.

- To control the budget clone technology computer should be purchased.

- Separate budget should be allocated for the maintenance of computer laboratories at teacher educational institutions and schools.

- Proper lab assistant and other technical staff having technical skills of managing Hardware and Software should be appointed at teacher educational institutions and schools.

- Nowadays Technology is rapidly growing, so it is the need and demand of time that proper training workshops and refresher courses should be arranged for the technical and professional development of the computer teachers as well as laboratories assistants.

- Government should provide Internet facilities with high bandwidth.

- Generators or Power backup facilities should be provided.

- Curriculum should be revised time by time and updated as need of time.

- HEC should monitor the implementation level of computer technology in Teacher training institutions.

Conclusion

Computer Technology has revolutionized every sphere of life, due to invent of this machine, world become a global village, so eventually we have to upgrade our generations to get most benefit from this, The illiterate of the 21st century, will be those that will not able to use technology, Teacher are the key players of education system, So by providing adequate computer training to prospective teachers we can improve the standard of education and our educational institutions

will become technology sufficient and our new generation technology efficient.

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Appendix-A

Table #01: Prior knowledge of computer before doing B.Ed.

	Yes	No	Up to	Total	χ^2
Response	32	19	29	80	22.25
Percentage	40.00%	23.75%	36.25%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #02: Computer should be taught as compulsory subject in Teacher Education Program..

	Yes	No	Up to	Total	χ^2
Response	51	12	17	80	27.75
Percentage	63.75%	15%	21.25%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #03: Computer should be taught as optional subject in Teacher Education Program.

	Yes	No	Up to	Total	χ^2
Response	12	60	8	80	91.125
Percentage	15%	75%	10%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #04: Computer course should not be included in Teacher Education Program.

	Yes	No	Up to	Total	χ^2
Response	13	62	5	80	103.63
Percentage	16.25%	77.50%	6.25%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #05: Satisfied with the ratio of theory and practical carried out during your course of study.

	Yes	No	Up to	Total	χ^2
Response	48	20	12	80	46
Percentage	60.00%	25.00%	15.00%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #06: Satisfied with the content taught during B.Ed. Program

	Yes	No	Up to	Total	χ^2
Response	43	25	12	80	14.125
Percentage	53.75%	31.25%	15.00%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #07: Satisfied with the completion of syllabus within the time.

	Yes	No	Up to	Total	χ^2
Response	44	22	14	80	20.87
Percentage	55.00%	27.50%	17.50%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #08: Satisfied with the availability of Laboratories facility provided for practices.

	Yes	No	Up to	Total	χ^2
Response	21	46	13	80	26.37
Percentage	26.25%	57.50%	16.25%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #09: Satisfied with the condition of computer system in laboratories.

	Yes	No	Up to	Total	χ^2
Response	18	47	15	80	30.87
Percentage	22.50%	58.75%	18.75%	100%	

* Significant df = 4 χ^2 at 0.05 level = 9.488

Table #10: Availability of generator facility for the laboratories.

	Yes	No	Up to	Total	χ^2
Response	0	80	0	80	320
Percentage	0.00%	100.00%	0.00%	100%	

* Significant df = 4 χ^2 at 0.05 level = 9.488

Table #11: Availability of lab assistant during your practical.

	Yes	No	Up to	Total	χ^2
Response	14	50	16	80	48.87
Percentage	17.50%	62.50%	20.00%	100%	

* Significant df = 4 χ^2 at 0.05 level = 9.488

Table #12: Availability of teachers in lab during your practical.

	Yes	No	Up to	Total	χ^2
Response	55	15	10	80	66.87
Percentage	68.75%	18.75%	12.50%	100%	

* Significant df = 4 χ^2 at 0.05 level = 9.488

Table #13: Satisfied with the teaching methods used during the classroom teaching.

	Yes	No	Up to	Total	χ^2
Response	44	21	15	80	20.12
Percentage	55.00%	26.25%	18.75%	100%	

* Significant df = 4 χ^2 at 0.05 level = 9.488

Table #14: Get any incentive during your job due to studying computer course in B.Ed.

	Yes	No	Up to	Total	χ^2
Response	10	53	17	80	45.62
Percentage	12.50%	66.25%	21.25%	100%	

* Significant df = 4 χ^2 at 0.05 level = 9.488

Table #15: Get any benefit of doing this course for getting job.

	Yes	No	Up to	Total	χ^2
Response	53	17	10	80	50.87
Percentage	66.25%	21.25%	12.50%	100%	

* Significant df = 4 χ^2 at 0.05 level = 9.488

Table #16: After B.Ed. you evaluate yourself as Computer Expert

	Yes	No	Up to	Total	χ^2
Response	25	17	38	80	41.12
Percentage	31.25%	21.25%	47.50%	100%	

* Significant df = 4 χ^2 at 0.05 level = 9.488

Table #17: After B.Ed. you evaluate yourself as Use Ms.Office efficiently.

	Yes	No	Up to	Total	χ^2
Response	37	18	25	80	22.12
Percentage	46.25%	22.50%	31.25%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #18: After B.Ed. you evaluate yourself as Do not able to use computer.

	Yes	No	Up to	Total	χ^2
Response	20	48	12	80	41.12
Percentage	25%	60%	15%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #19: Availability of Computer at your home.

	Yes	No	Up to	Total	χ^2
Response	40	27	13	80	16.62
Percentage	50.00%	33.75%	16.25%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #20: Use Internet at your home.

	Yes	No	Up to	Total	χ^2
Response	45	20	15	80	32.5
Percentage	56.25%	25.00%	18.75%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #21: You use internet for Chatting & E-mail

	Yes	No	Up to	Total	χ^2
Response	56	11	13	80	64.37
Percentage	70.00%	13.75%	16.25%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #22: You use internet for Searching material

	Yes	No	Up to	Total	χ^2
Response	52	16	12	80	46.5
Percentage	65%	20%	15%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Table #23: You use internet for Entertainment

	Yes	No	Up to	Total	χ^2
Response	45	30	5	80	35.62
Percentage	56.25%	37.50%	6.26%	100%	

* Significant df = 4 χ2 at 0.05 level = 9.488

Appendix-B Questionnaire

Name of Student:_____ Academic Qualification: _____ Professional Qualification:_____ Gender: Male Female
Are you employed: No Yes if yes where
Dept_____Designation:_____

S.NO	STATEMENTS	YES	NO	UP TO SOME EXTENT
1	Did you have the prior knowledge of computer before doing B.Ed?	40%	23%	37%
2	Do you think that computer should be taught as compulsory subject?	64%	15%	21%
3	Do you think that computer should be taught as optional subject?	40%	26%	34%
4	Do you think that computer course should not be included in B.Ed Program?	17%	76%	7%
5	Were you satisfied with the ratio of theory and practical carried out during your course of study?	47%	36%	17%
6	Were you satisfied with the content taught during B.Ed Program?	41%	32%	27%
7	Were your syllabus completed within the time?	55%	24%	21%
8	Was the proper Lab facility provided for practices?	25%	47%	28%
9	Were the computer systems in working condition in lab?	38%	40%	22%
10	Was generator facility available for the lab?	20%	70%	10%
11	Was there any lab assistant in lab during your practical?	24%	54%	22%
12	Were there teachers available in lab during your practical?	53%	20%	27%
13	Were you satisfied with the teaching methods used during the classroom teaching?	49%	28%	23%
14	Did you get any incentive during your job due to studying computer course in B.Ed.?	11%	67%	22%
15	Did you get any benefit of doing this course for getting job?	56%	21%	23%
16	After B.Ed. you evaluate yourself as Computer Expert	34%	23%	43%
17	After B.Ed. you evaluate yourself as Use Ms.Office efficiently.	47%	22%	31%
18	After B.Ed. you evaluate yourself as Do not able to use computer.	13%	66%	21%
19	Do you have Computer at your home?	46%	28%	26%
20	Do you use Internet at your home?	43%	18%	39%
21	You use internet for Chatting & E-mail	69%	12%	19%
22	You use internet for Searching material	69%	19%	12%
23	You use internet for Entertainment	42%	25%	33%