

Attitudes of Elementary Pre-Service Teachers Towards Computer-Based Instruction

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Abstract - *The study aimed to trace the profile of the senior elementary pre-service teachers in terms of sex, course, grade in basic computer subject, presence of computers at home, experience in using computer, and their perceived computer skills in terms of MS Word, MS Excel, MS Publisher, MS PowerPoint, Electronic Mail (E-mail), and internet surfing. The study also determined the attitudes of the senior elementary pre-service teachers towards computer-based instruction (CBI) and found out the significant relationship between the variables. Using descriptive-correlational research, 123 senior elementary pre-service teachers were involved as respondents. Majority of the respondents are female, have no computers at home and have used computers in reporting/teaching while most have an average grade in Basic Computer. Generally, most are skilled in using computer programs. Majority have favorable attitudes towards CBI. There is no significant relationship between the profile and the perceived computer skills and attitudes towards CBI. There is no significant relationship between the perceived computer skills and attitudes towards CBI. The study concludes that despite the average computer skills, the respondents are open to the advantages of CBI.*

Keywords - *attitudes, computer-based instruction, elementary, pre-service teachers, teacher education*

INTRODUCTION

Nowadays, technology is the leading innovation in the teaching-learning process. With the advancement of technology, major revisions in the framework of educational system have been carried out. Computers as tools in teaching have been a common part of today's classrooms. With this shift in the educative process, it is of great advantage to the educators' desire to impart knowledge and skills to the learners of this generation. In this process, educators will be able to address the pressing needs of the learners. Computer-based education has been playing an important role in this practice. It has improved the quality of teaching and learning in the classroom.

Computer-based instruction (CBI) was considered the technological phenomenon to revolutionize education and training. Today, the internet and computer technology are reported to have significantly altered the education landscape [1]. The rapid advances in technology, the need for lifelong learning, and the growth of nontraditional students have encouraged the use of the computer as a method of instructional delivery [2].

Grabe [3] reflects the issue of "Using Instructional Software for Content-Area Learning". The computer applications have great role in the instruction. The reflected issue contains what is instruction and how traditional instructional activities challenged by the development of high technology and computer-based instruction, computer facilities. For practicing, reaching high quality technology-based learning experiences for students, computers should create tendency from the students and be part of the instruction based on constructivist approach.

Forcier [4] reflects the role of computers in education. The important points in here is that students should be in consciousness of the place of computer application in education, strategies for using computers, instruction and learning and issues, trends in information technology in order to shape right and concrete attitudes for technology and computers in instruction. The most important reflection is that computer application in education provides student-centered learning instead of teacher centered learning and learning becomes based on constructivist approach in order to create motivation and

communication within instruction by the help of the computer and high technology materials.

The profile of the respondents in terms of sex, course, grade in basic computer subject, presence of computers at home, experience in using computer, and their perceived computer skills were included since it is assumed that the attitudes in computer-based instruction depend on their profile. In terms of sex, males are more inclined in the use of technology, while in the course; there are courses that require more technology applications in the classroom. Those who performed well in the basic computer education subject could have better attitudes in computer-based instruction. The presence of computers at home and experience in using the computer could be a factor on their better attitudes in computer-based instruction. The perceived computer skills of the respondents could be considered as a factor that may affect their attitudes toward computer-based instruction.

Computers and the Internet are great resource for classroom teachers. Teachers can find suggestions, lesson plans, practical support, information, and materials through the Internet. In fact, using a computer can make a teacher's life easier and more efficient. Nowadays, teachers are using these technologies for teaching-learning process, but there are some issues concerning the use of technologies particularly computers. The slow internet connection of the Philippines has something to do with the level of usage of the netizens. The lack of computers in some schools can also affect the implementation of Information and Communication Technology. It is sad to note that teachers lack exposure to ICT which also affect the effective integration of technology in the school curriculum.

Researches have been conducted to assess the attitudes of learners towards computer-based instruction. Akram [5] found out that majority of the respondents agreed that computer helps in teacher's instruction, in understanding the complex concepts of subject and to improve the level of learning. The study of Teo [6] showed no gender or age differences among pre-service teachers on computer attitudes. However, there were significant differences for computer attitudes by the subject areas that pre-service teachers had been trained during their university education. The study of Krishna & Sachan [7] revealed that students have a positive attitude towards ICT and use them to facilitate learning, although female students are more inclined towards ICT usage and likely to find that ICT help them at

their studies. Teachers' attitudes towards computers are found to be positive in the studies of Baker [8] and Cavas, et al. [9].

OBJECTIVES OF THE STUDY

With the shift from teacher-centered to child-centered instruction, the importance of technology in instruction cannot be understated. The study aimed to trace the profile of the senior elementary pre-service teachers in terms of sex, course, grade in basic computer subject, presence of computers at home, experience in using computer, and their perceived computer skills in terms of MS Word, MS Excel, MS Publisher, MS PowerPoint, Electronic Mail (E-mail), and internet surfing. The study also determined the attitudes of the senior elementary pre-service teachers towards computer-based instruction (CBI) and found out the significant relationship between the profile of the respondents and their perceived computer skills and the significant relationship between the respondents perceived computer skills and their attitudes towards computer-based instruction (CBI).

METHODS

The study utilized descriptive-correlational research employing a complete enumeration of the 123 senior elementary pre-service teachers enrolled in the student teaching course as respondents. A survey on attitudes towards computer-based instruction adapted from the study of Akram [5] was used to gather data statistically treated using frequency counts, percentages for the profile of the respondents, means for their perceived computer skills and attitudes towards computer-based instruction (CBI) and multiple regression analysis for the test of significant relationship between variables. The respondents responded to their computer skills by checking VMS for Very Much Skilled, MS for Much Skilled, S for Skilled, LS for Less Skilled and NS for Not Skilled. The means of the items and of every respondent were computed and interpreted using the following: 4.21 – 5.00: Very Much Skilled (VMS); 3.41 – 4.20: Much Skilled (MS); 2.61 – 3.40: Skilled (S); 1.81 – 2.60: Less Skilled (LS); 1.00 – 1.81: Not Skilled (NS).

The respondents also answered their agreement or disagreement on their attitudes towards computer-based instruction by checking SA for Strongly Agree, A for Agree, U for Uncertain, D for Disagree and SDA for Strongly Disagree. The means of the items and of every respondent were computer and categorized into the following: 4.21 – 5.00: Highly

Favorable (HF); 3.41 – 4.20: Favorable (F); 2.61 – 3.40: Moderately Favorable (MF); 1.81 – 2.60: Less Favorable (LF); 1.00 – 1.81: Not Favorable (NF).

RESULTS AND DISCUSSION

Table 1. Sex of the Respondents

Sex	f	%
Male	20	16.3
Female	103	83.7
Total	123	100.0

Table 1 presents the sex of the respondents. The table shows that majority of the respondents are female. This means that majority of the senior elementary pre-service teachers are female.

Table 2. Course of the Respondents

	f	%
BEEd	88	71.5
BEEdHE	35	28.5
Total	123	100.0

Table 2 presents the course of the respondents. The table shows that majority of the respondents are BEEd pre-service teachers.

Table 3. Grade in the Basic Computer Subject of the Respondents

Grade	Frequency	Percent
1.00	4	3.3
1.25	6	4.9
1.50	25	20.3
1.75	40	32.5
2.00	26	21.1
2.25	9	7.3
2.50	3	2.4
2.75	6	4.9
3.00	4	3.3
Total	123	100.0

Table 3 presents the grade in basic computer subject of the respondents. The table shows that most of the respondents have a grade of 1.75. This means that they are average learners of computer.

Table 4. Presence of Computer at Home

	f	%
yes	46	37.4
no	77	62.6
Total	123	100.0

Table 4 presents the presence of computer at home by the respondents. The table shows that majority of the respondents have no computer at home.

Table 5. The Use of Computer in Class Reporting/Teaching

	f	%
yes	102	82.9
no	21	17.1
Total	123	100.0

Table 5 presents the use of the respondents of a computer in class reporting/teaching. The table shows that majority of them used computer in class reporting and teaching. This means that even if they do not have personal computer, they still managed to use computer in their class reporting and teaching.

Table 6. Perceived Over-all Computer Skills

	f	%
Very Much Skilled	12	9.8
Much Skilled	30	24.4
Skilled	48	39.0
Less Skilled	30	24.4
Not Skilled	3	2.4
Total	123	100

Table 6 presents the perceived over-all computer skills of the respondents. The table shows that most of the respondents are skilled in using computer. This means that the respondents have an average level of skills in terms of using computers. This proved their average grade in their basic computer education subject.

Table 7. Perceived Computer Skills in MS Word

	f	%
Less Skilled	8	6.5
Skilled	36	29.3
Much Skilled	53	43.1
Very Much Skilled	26	21.1
Total	123	100.0

Table 7 presents the perceived computer skills of the respondents in MS Office Word. The table shows that most of the respondents are much skilled in using the MS Office Word. This means that most of the respondents know how to use the MS Office Word Application in the computer.

Table 8. Perceived Computer Skills in MS Excel

	f	%
Not Skilled	12	9.8
Less Skilled	52	42.3
Skilled	34	27.6
Much Skilled	20	16.3
Very Much Skilled	5	4.1
Total	123	100.0

Table 8 presents the perceived computer skills of the respondents in MS Office Excel. The table shows that most of the respondents are less skilled in using the MS Office Excel application. This means that the respondents are not proficient in using the MS Office Excel application.

Table 9. Perceived Computer Skills in MS Publisher

	f	%
Not Skilled	24	19.5
Less Skilled	64	52.0
Skilled	20	16.3
Much Skilled	11	8.9
Very Much Skilled	4	3.3
Total	123	100.0

Table 9 presents the perceived computer skills of the respondents in MS Office Publisher. The table shows that majority of the respondents are less skilled in using the MS Office Publisher application. This means that generally the respondents do not know exactly how to use the MS Office Publisher.

Table 10. Perceived Computer Skills in MS Office PowerPoint

	f	%
Not Skilled	24	19.5
Less Skilled	64	52.0
Skilled	20	16.3
Much Skilled	11	8.9
Very Much Skilled	4	3.3
Total	123	100.0

Table 10 presents the perceived computer skills of the respondents in MS Office PowerPoint. The table shows that majority of the respondents are less skilled in using the MS Office PowerPoint application. This means that generally the respondents do not know exactly how to use the MS Office PowerPoint.

Table 11 presents the perceived computer skills of the respondents using Email. The table shows that most of the respondents are skilled in using E-mail. This means that the respondents have average knowledge in using E-mail.

Table 11. Perceived Computer Skills using Email

	f	%
Not Skilled	19	15.4
Less Skilled	33	26.8
Skilled	38	30.9
Much Skilled	24	19.5
Very Much Skilled	9	7.3
Total	123	100.0

Table 12. Perceived Computer Skills using the Internet

	f	%
Less Skilled	17	13.8
Skilled	33	26.8
Much Skilled	37	30.1
Very Much Skilled	36	29.3
Total	123	100.0

Table 12 presents the perceived computer skills of the respondents using the internet. The table shows that most of the respondents are much skilled in using the internet. This means that the respondents are generally knowledgeable in using the internet.

Table 13. Respondents by Attitudes Towards Computer-Based Instruction

	f	%
Highly Favorable	8	6.5
Favorable	86	69.9
Moderately Favorable	29	23.6
Total	123	100.0

Table 13 presents the attitudes of the respondents towards computer-based instruction. The table shows that majority of respondents have favorable attitudes towards computer-based instruction. This means that the respondents have positive disposition towards computer-based instruction. This confirmed the study of Teo [6], Krishna & Sachan [7], and Bakr [8].

Table 14 presents the respondents' attitudes towards computer-based instruction per item. Generally, the students have favorable attitudes towards computer-based instruction. The data reveals that majority of the items were rated highly favorable by the respondents.

Looking at the three highest means, the respondents have very highly favorable attitudes towards computer-based instruction as "computers help in teacher's instruction," "computer-based

instruction should be part of the curriculum,” and “computer-based instruction tools help in self-learning of students.”

Table 14. Attitudes Towards Computer-Based Instruction Per Item

Statement	Mean	VI
Computers help in teacher’s instruction.	4.68	HF
Computer-based instruction should be part of the curriculum.	4.58	HF
Computer-based instruction tools help in self-learning of students.	4.45	F
Computer-based instruction tools are available in the school.	4.11	F
Computer-based instruction is helpful in the development of competence.	4.07	F
Computer-based instruction tools required less time and energy of teachers.	4.02	F
Better way of learning is to allow students to move at their own pace.	4.01	F
Computer-based instruction tools are more helpful for college learners than basic education learners.	3.91	F
Computer-based instruction helps in understanding the complex concepts of the subject.	3.87	F
I feel comfortable in using various computer-based instruction tools.	3.76	F
Learning through projects and slides is more intensive than learning through boards and charts.	3.72	F
Computer-based instruction tools play an important role to improve problem-solving skills.	3.71	F
I am confident to use computer-based instruction in class.	3.64	F
Computer-based instruction tools are more appropriate to meet the student’s requirements.	3.62	F
Computer-based instruction tools are only useful to develop cognitive skills in some subjects.	3.35	MF
Computer-based instruction tools cannot be helpful for all kind of students.	2.78	MF
Teaching using computers and traditional method have no difference.	2.72	MF
Computer-based instruction tools can be replacement of human teacher.	2.59	LF
Computer-based instruction tools waste the time of students.	2.25	LF

This means that the students recognize the advantages of computers in the different components of the teaching-learning process – the teachers, the students, and the curriculum.

The three of the bottom five means state that students have moderately favorable attitudes towards CBI as “computer-based instruction tools are only useful to develop cognitive skills in some subjects,” “computer-based instruction tools cannot be helpful for all kind of students,” and “teaching using computers and traditional method have no difference.” This means that the respondents are not yet fully aware of the different uses of computers in diverse skills and the type of learners that are exposed to the usage of computers in teaching-learning process.

The two lowest means state that, “computer-based instruction tools can be replacement of human teacher,” and “computer-based instruction tools waste the time of students.” This means that the respondents disagree with these statements.

Table 15. Test of Relation of Profile and Attitudes towards CBI

	p-value	Interpretation
Sex	.107	NS
Course	.380	NS
Grade in Basic Computer	.796	NS
Presence of Computer At Home	.720	NS
Used Computer in Reporting/Teaching	.078	NS

Table 15 presents the test of significant relationship between the profile and the attitudes of the respondents towards CBI. The table shows that there is no significant relationship between the profile of the respondents and their attitudes towards CBI. This means that their sex, course, the presence of personal computer, the use of computer in reporting/teaching and their grade in basic computer education subject do not depend on their attitudes towards CBI.

Table 16 presents the test of significant relationship between the profile and the perceived computer skills of the respondents. The table shows that there is no significant relationship between the profile of the respondents and their perceived computer skills. This means that their sex, course, the presence of personal computer, the use of computer in reporting/teaching and their grade in basic computer education subject do not depend on their perceived computer skills.

Table 16. Test of Relation of the Profile and the Perceived Computer Skills

	p-value	Interpretation
Sex	.594	NS
Course	.924	NS
Grade in Basic Computer	.423	NS
Presence of Computer At Home	.424	NS
Used Computer in Reporting/Teaching	.129	NS

Table 17. Test of Relation of the Perceived Computer Skills and Attitudes towards CBI

	p-value	Interpretation
Attitudes Towards CBI	.158	Not Significant

Table 17 presents the test of significant relationship between the perceived computer skills and the attitudes of the respondents towards CBI. The table shows that the perceived computer skills of the respondents and their attitudes towards CBI are not significantly related. This means that the computer skills they possess do not depend on their attitude towards CBI. This further means that the skills they have in computer hardware and software manipulations are not guaranteed that they have a high attitude towards the use of computer-based instruction in the classroom.

CONCLUSION

The study concluded that despite the average computer skills of the respondents, they are still open to the advantages of computer-based instruction (CBI). This means that there is a need to expose the pre-service teachers to computer-based instruction so that their attitudes will be improved. There is a consciousness about the importance of computer-based instruction but there are a few tendencies to apply the consciousness or willingness of new technological style because not having particular education, encouragement and facilitative environment. As a result, computer-based instruction can be worked better as a being great influencer and creating active learning for students and easy way to solve educational and study-based problems.

RECOMMENDATION

Based on the findings of the study, pre-service teachers must be exposed to CBI while they are still in the early years of their studies. This will help them

improve their attitudes in CBI and their skills in using computer applications. Teachers in the Teacher Education Institutions should require their students to use computers in the teaching-learning process.

Another study should be conducted focusing on the application of Computer-Based Instruction in the classrooms by the pre-service teachers during their reporting and demonstration teachings.

REFERENCES

- [1] Johnson, S. D., & Aragon, S. R. 2002. An instructional strategy framework for online learning environments. In T. M Egan & S. A. Lynham (Eds.), *Proceedings of the Academy of Human Resource Development Annual Conference* (41-1). Bowling Green, OH: Academy of Human Resource Development.
- [2] Gibbons, A. S., & Fairweather, P. G. 2000. Computer-based instruction. In S. Tobias & J. D. Fletcher (Eds.), *Training & retraining: A handbook for business, industry, government, and the military* (pp. 410-442). New York: Macmillan Reference USA.
- [3] Grabe, M. & Grabe, C. 2001. "Integrating Technology for Meaningful Learning". Houghton Mifflin Company in United States of America
- [4] Forcier, C. 1996. "The Computer as a Productivity Tool in Education". Prentice-Hall, Inc. A Simon & Schuster Company in United States of America
- [5] Akram, M., Ather, H. M., & Saima Rasul, M. (2012). The Perception of Teachers in Using Computer-Based Technology at Higher Education. *Perception*, 2(1).
- [6] Teo, Timothy. 2008. Pre-service Teachers' Attitudes towards Computer Use: A Singapore Survey. *Australian Journal of Educational Technology*, 24 (4), 413 – 424
- [7] Krishna, D., & Sachan, H. K. (2014). Attitudes towards Information Communication Technology (ICT) among CAFF students in Fiji. *International Journal of Education and Research* September, 2(9).
- [8] Bakr, S. 2011. Attitudes of Egyptian Teachers towards Computers. *Contemporary Educational Technology*, 2 (4), 308 – 318.
- [9] Cavas, B., Cavas, P., Karaoglan, B., & Kislal, T. (2009). A study on science teachers' attitudes toward information and communication technologies in education. *TOJET: The Turkish Online Journal of Educational Technology*, 8(2).

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