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Cognitive, Affective and Psycho-Motor Skills in Basic Computer Education Among Intermediate Learners

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Abstract - The study determined the level of cognitive, affective and psychomotor skills among selected intermediate pupils in Lucban, Quezon in Basic Computer Education. Particularly, it geared at finding a significant difference in the three levels of learning on Basic Computer Education and probing an E-Material that can be developed to improve the existing status of the selected grade six pupils. The descriptive method utilizing questionnaire as its main instrument limited to determining the three domains of learning Basic Computer Education, characterized the research design. One hundred (100) respondents were randomly selected from chosen public and private elementary schools namely, Casa del Niño Jesus de Lucban (CDNJL), Lucban Adventist Elementary School (LAES), Paaralang Elementarya ng Lucban 1 (PEL 1), and Southern Luzon State University Laboratory Elementary School (SLSU LES). Using weighted mean and chi-square as the statistical measures, results showed that pupils from CDNJL

ranked second in cognitive skills, third in the affective and psychomotor skills relevant to computer. Pupils from LAES, however, emerged fourth in the three domains of learning, as contrasted to pupils from PEL 1 who ranked third in the cognitive skills, but first on the affective and psychomotor skills. Meanwhile, SLSU LES pupils garnered first in the cognitive skills, and second on the psychomotor and affective competencies.

Keywords—Cognitive, affective, psychomotor skills, Basic Computer Education

INTRODUCTION

The present age has seen the growth of information technology in almost all fields especially with the invention of microcomputers. We have seen the effect of computer in many different ways as it revolutionized man's way of getting things done. Computer serves as a fuel for modernization. The educational system is not exempted from this development. Computer Education, which used to belong to the tertiary level, is now being introduced even to pre-schoolers. The current trend is to make students "computer literate" in all levels. The Philippine National Information Technology Plan (NITP) 2000 envisions that "60% of the Filipinos will be information technology literate at the turn of the century." For many of us, a computer is just known as a piece of equipment—that awesome package of glass, plastic, metal and wires—used to make our work easier. But these computers are already changing our lives. It is now possible for us to see the world in a different way, to achieve new goals, which were impossible before, and to control the world around us. Computers have actually transformed our lives—how we communicate, how we work and learn things and even how we play. Computers are efficient tools in processing data into useful information. These are essential tools in almost every field of research and applied technology because of their capabilities. And because of the widespread use and availability

of computers, it is essential that everyone acquire an understanding of what computers are and how they work. In the modern world, no one can afford to be ignorant of the important role of computers in any career or business of choice. Being computer literate will give anyone a great competitive advantage.

The call for the use of technology inside the classrooms in order to make education relevant is stipulated in the 1987 Constitution of the Philippine Article XIV, Sec. 1 and 2 which states that:

"The State shall protect and promote the right of all citizens to make quality education at all levels and shall partake appropriate steps to make education accessible to all. It shall also establish, maintain and support a complete, adequate and integrated system of education relevant to the needs of the people and society."

This statement is further supported by the emerging educational objectives as stipulated in the Medium-Term Plan for National Development, Elevazo (1995), to wit:

"One of the new objectives of the education and manpower development is to improve the quality and increase the relevance of education and training. This dictates that if computer education is relevant to face the challenges of the fast changing society, the state must do something in order to respond to the pressing needs of the current world."

Information Technology is one of the major innovations that have been introduced to the modern society. It has become an international issue; thus, it is popular. It has influenced and affected so many individuals. As stressed by Dasal (1996), "The advancement in Information Technology has had the most profound—and has often effects in all dimensions of societal lives." Thus, high level of cognitive, affective and psychomotor skills of pupils in Basic Computer Education is needed.

Computer education provides the fundamental learning skills about computer technology and enables the pupils to become computer literate and uplifts their level of learning. It also upgrades the kinds of learning such as improving the computer skills, advancing the cognitive skills of the pupils in computer, and acquiring various psychomotor skills and abilities in response to the current demand in the educational system. Nowadays, many educational institutions

gear toward computer technology that is necessary in responding to sudden explosion in various endeavors all over the world. It is in this context that a study was conducted in order to provide an accurate perception of learning outcomes and present conditions of computer literacy that will lead in determining the level of cognitive, affective and psychomotor skills of an individual pupil in dealing with computer education.

Based from the researcher's observation, the four selected schools have their computer subject, however, the skills that should have been manifested by the pupils are not really shown and possessed by them. And this study aimed to provide the educational institutions in the said municipality with an E-Material that is intended for updating the knowledge needed and equipping an individual with well-developed skills related to computer literacy. This study was conducted for it is deemed necessary for the pupils to deeply gain insight into computer education. They must have well-organized activities in order to attain competence in computer, thereby improving their cognitive, affective and psychomotor skills in computer. And finally, an E-material was made to overcome the needs and improve the present status in Basic Computer Education of the selected elementary schools.

FRAMEWORK

This study is anchored on the principle of progressivism, an educational theory that asserts change is inevitable and an enduring force is the essence of reality. It viewed that education is always the process of development; hence, it must be clearly related to modify methods and policies to conform to the new knowledge and changes in environment. It further stressed that learning should be directly related to the interests and needs of the learners. This is the very reason why the study was undertaken, since computer education became the focal qualification for global competitiveness and it is seen to be a must for every pupil. Therefore, pupils need to be updated and use computer in order for them to fare well with the competition inside and outside the school.

Further improvement of computer learning skills of the pupils is developed by means of proper maintenance of physical facilities and equipment in the said school. These facilities provide actual

interactions and first hand experiences among pupils to learn the concepts and ideas by using various skills and advanced learning. Furthermore, physical facilities, particularly computers, are necessary to attain better learning of the subject; thus, achieving a higher level of the pupil's cognitive, affective and psychomotor skills in dealing with computer lessons.

The paradigm presents the input-process-output model. The **input** contains the terms that refer to everything necessary in the conduct of the study such as the pupil's level of cognitive, affective and psychomotor skills and the Basic Computer Education program they undergo and study. The **process** contains the procedures in carrying out the activities for the completion of the study from the preparatory activities like formulation and validation of questionnaire until the analysis and interpretation of data gathered, and development and validation of the E-Material. Finally, the **output** presents the E-Material.

OBJECTIVES OF THE STUDY

This study attempted to determine the level of cognitive, affective and psychomotor skills among selected intermediate pupils in Lucban, Quezon in Basic Computer Education. Specifically, it aimed to:

1. determine the level of cognitive, affective and psychomotor skills among selected intermediate pupils in Lucban, Quezon in Basic Computer Education in the four schools.
2. find a significant difference in the three levels of learning in Basic Computer Education in the four schools.
3. probe an E-Material that can be developed to improve the existing status of the selected grade six pupils.

MATERIALS AND METHODS

The study covered the selected elementary schools in Lucban, Quezon that are implementing Basic Computer Education. The descriptive method utilizing questionnaire as its main instrument limited to determining the three domains of learning Basic Computer Education, characterized the research design. One hundred (100) respondents were randomly selected from chosen public and private

elementary schools namely, Casa del Niño Jesus de Lucban, Lucban Adventist Elementary School, Paaralang Elementarya ng Lucban 1, and Southern Luzon State University Laboratory Elementary School. Weighted mean and chi-square were used as the statistical measures in determining the three levels of domain of learning Basic Computer Education.

RESULTS AND DISCUSSION

Results showed that pupils from CDNJL ranked second in cognitive skills, third in the affective and psychomotor skills relevant to computer. Pupils from LAES, however, emerged fourth in the three domains of learning, as contrasted to pupils from PEL 1 who ranked third in the cognitive skills, but first on the affective and psychomotor skills. Meanwhile, SLSU LES pupils seated first in the cognitive skills, and second on the psychomotor and affective competencies. From these findings, it is apparent that SLSU LES is the most cognitively competent while PEL 1 is the ablest in both psychomotor and affective skills. Generally, the four schools provided their pupils necessary competencies and proficiency in the cognitive, affective and psychomotor levels in Basic Computer Education.

Table 1. Mean score of the respondents in their respective school on the cognitive skill

School	N	∑ of Score	$\bar{x}$	Rank
1. Casa del Niño Jesus de Lucban (CDNJL)	25	618	24.88	2
2. Lucban Adventist Elementary School (LAES)	25	560	22.40	4
3. Paaralang Elementarya ng Lucban 1 (PEL 1)	25	567	22.68	3
4. Southern Luzon Polytechnic College Laboratory Elem. School (SLPC LES)	25	635	25.40	1

Table 1 shows that Southern Luzon Polytechnic College Laboratory Elementary School (SLPC LES) got the highest mean of 25.40, while Casa del Niño Jesus de Lucban (CDNJL) ranked second with a weighted mean of 24.88 and Paaralang Elementarya ng Lucban 1 (PEL 1) and Lucban Adventist Elementary School ranked third and fourth with weighted mean of 22.68 and 22.40, respectively. These data revealed that Southern Luzon State University Laboratory Elementary School pupils are the most competent in the cognitive skill in computer. It can be deduced that the pupils are provided with an in-depth learning in computer. Perhaps, they have deeply instilled in their mind the concepts learned in Basic Computer Education. This result conforms to the study made by Hawkin and Sheingold (1997) that to extend some computer skills, there must be consistent supplies of commercially available information-managing software tools and other supplemental resources and they are valuable in establishing concrete operational skills and sustaining cognitive aspect of learning, such as analyzing, interpreting, and synthesizing information. This way, pupils are able to easily grasp knowledge and information regarding the basic concepts of computer.

Table 2. Chi-square distribution of the respondents' affective skill

Statement	x^2
1. I am motivated in constructing sentences through MS Word program.	4.29
2. I enjoy memorizing MS Word command.	29.88
3. I am willing to save data and information.	9.30
4. I feel more confident when I use different MS Word command.	8.18
5. I appreciate the competency of MS Word program or software.	23.04
6. I enjoy scrolling in a sentence or paragraph.	10.97
7. I feel confident in selecting key to exit MS Word program.	11.84
8. I am interested in demonstrating skills through the use of MS Word program.	13.62
9. I find it easy in creating documents.	7.48

10. I feel comfortable in inserting text in the document.	10.40
11. I find it easy in making margins or page setting.	20.44
12. I can easily check spelling of the words in a sentence or paragraph.	21.35
13. I feel confident in shutting down the computer.	29.96
14. I am interested in printing the finished document.	25.83
15. I can easily return to the document when there is a change or shift in the program.	10.57
16. I can edit some words easily in the document.	7.29
17. I am confident in using the different commands in the MS Word program.	11.65
18. I can understand some of the short cut control keys in the MS Word program.	8.44
19. I can easily follow the command in the menu bar and toolbar in the MS Word program.	17.05
20. I am interested in creating a new file name or document in the MS Word program.	4.05

df = 57 at .05 level of significance $x^2 = 285.63$
T.V. = 79.082 C.V. 285.63

Table 2 shows the chi-square distribution of the four selected elementary schools on affective skills towards Basic Computer Education. It reveals that the total computer $x^2 = 285.63$ is achieved. This means that it is greater than the tabular value of 79.082, which implies that it is significant at .05 level. It may be inferred that the pupil-respondents in the said schools are motivated in various activities in MS Word program. Perhaps they feel confident doing things like inserting word in their document, returning to the document when there is a change in the program, creating new file name, following the command in the menu bar, checking the spelling of a word and they even save a document quite easy. They feel comfortable in inserting text in the document, enjoy scrolling in a sentence or paragraph, and they even learn different commands in the computer as they execute a particular activity in their computer lessons. They also feel confident performing a given activity since they acquire the things they want

as they learn a particular computer skill. They favor to most of the items in relation to affective skills in Basic Computer Education. It can be deduced that they can are positively motivated in engage to different computer activities. Their desire to learn the computer skills is quite high as it is evident in showing their utmost interested in this computer subject. Finally, they appreciated the different values they learn in their computer subject.

Table 3. Chi-square distribution of the respondents' psychomotor skill

Statement	X^2
1. I am motivated in using my skills in typing words in the MS Word program.	11.36
2. I can use the different short cut keys while typing.	21.66
3. I can insert graphics or pictures in my document.	9.77
4. I can manipulate any command in the MS Word program.	9.34
5. I can make design to my document like pictures and graphics.	25.08
6. I can type words in the MS Word program with ease and accuracy.	17.68
7. I can edit the words and sentences in the document easily.	16.37
8. I can use the MS Word program independently.	21.16
9. I can follow different commands in the toolbar.	18.81
10. I can name the different commands in the menu bar and toolbar.	17.01
11. I can make a variety of skills while making the document.	15.73
12. I can apply my knowledge in basic skills in using the computer.	13.14
13. I can use the MS Word program with ease and accuracy.	15.66
14. I can present a nice concept or idea while doing a document in MS Word program.	16.11
15. I have a mastery of the different skills in using the MS Word program.	18.32
16. I can easily solve any problem that occurs while working in MS Word program.	9.40
17. I easily learn different control keys while typing words and sentences in MS Word program.	164.82
18. I can apply my knowledge of the concepts like parts of the MS Word program.	21.33

19. I have mastery in using different skills like familiarity in the alphabet, numeric, and additional keys in keyboarding.	13.09
20. I can develop a sentence and paragraph with proper editing of the document.	12.65

df = 57 at .05 level of significance $x^2 = 285.63$
T.V. = 79.082 C.V. 285.63

Table 3 shows the chi-square distribution of the four selected elementary schools on psychomotor skills towards Basic Computer Education. It reveals that the computer $x^2 = 285.63$ is achieved. This connotes that it is greater that the tabular value of 79.082, which implies that it is significant at .05 level. It may be inferred that the pupil-respondents in the said schools can perform various activities and manipulate commands in MS Word software. They are motivated in various activities in the application of skills in the said program. They feel confident doing things like using different short cut keys, inserting graphics or pictures in the document, following different commands and naming different commands in the menu bar. They even have a mastery of the different skills in keyboarding, developing sentence and paragraph with proper editing of the document and others. They can even solve problems that may occur while using the MS Word program and they acquire the different control keys in keyboarding.

The pupils gave favor to almost all the items in relation to psychomotor skills in Basic Computer Education. It can be surmised that they enjoy using the computer in the classroom. Their learning is enhanced because the pupils apply the scientific method of the solution to the problems. They can master skills and content because they are provided with varied learning experiences in their computer lessons.

Since the computed value is higher than the tabular value, then the null hypothesis which states that there is no significant difference in the level of psychomotor skills is rejected. Therefore, the findings of this study are significant.

CONCLUSIONS

In terms of cognitive skills, Southern Luzon State University Laboratory Elementary School is the most competent while Paaralang Elementarya ng Lucban 1 is the ablest in both affective and psychomotor levels.

The four schools provide their pupils the necessary skills and competencies in the cognitive, affective and psychomotor levels in Basic Computer Education. They also give equal opportunity for the pupils on the use of computer.

The E-material in Basic Computer Education is ready for its pilot implementation.

RECOMMENDATIONS

It is highly recommended that the schools should initiate a continuing development program to ensure an evident response to the rapid proliferation of Information Technology, and they should vitalize the establishment of linkages with NGOs or private companies which would prospectively increase computer units, through sponsorship programs in the respective schools to facilitate teaching of computer lessons. Additionally, conducting an evaluation program for all schools will aid to determine and assess the strengths and weaknesses in including computer as a course in their curriculum. Furthermore, proper monitoring and supervision of the pupil's computer activities, and projecting and internalizing ethical concerns with regards to the use of computers must be of essential consideration.

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