

# Students' Attitudes and Self-Efficacy towards the Use of Computer: Basis in the Achievement of Learning Outcome

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**ABSTRACT**--In OBE, there's a shift in education's focus from Input-Based teacher centered "instruction" to outcomes-based learner centered educational paradigm. The study investigated computers' usefulness, attitudes and self-efficacy as basis in learning outcomes' achievement of students. Survey questionnaire based on Murphy scale (1989) probing students' purpose, attitude towards computer and computer self-efficacy was used. For in-depth analysis, Classroom Observation and Focus Group Discussion were employed. Data were analyzed using ANOVA, Pearson correlation and Reliability Test. Results showed the most to least computer usage of students are games, internet surfing, video-making, presentations, e-mail, typing and maintaining files. Students' attitudes towards computers were uncertain on the components; affective, perceived comfort, and behavioral intention, but they knew the importance of using computers to achieve their learning goals and therefore they were confident of the effectiveness. Moreover, the students' revealed their agreement on their self-efficacy, both in the beginners and advanced levels. Significant differences were observed between students' self-efficacy when grouped according to frequency of computer usage and current computer classes. Correlation analysis showed positive correlation ( $r = + 0.135$ ) between students' gender and attitude toward computer, age and their self-efficacy ( $r = + 0.126$ ) with Cronbach's Alpha of 0.905. The result may serve as basis for curriculum development for an outcome-based learning.

**KEYWORDS**--Learning outcome, Computer usage, Attitude and Self- Efficacy

## I. INTRODUCTION

Technology integration to education specifically the use of computers addresses the challenge of the 21<sup>st</sup> century. Outcomes-Based Education having aimed to focused on the learners' absorption of skills needed by them to produce meaningful outcome depends on their beliefs, positive attitude, self-motivation, acceptance and self-efficacy on computer use is imperative for this can be used by learners to have advance learning and they can learn at their own pace without being dependent to what their teachers will be inputting/sharing to them. Knowing what a learner can do out of what he already discerned implies ingenuity and does discovery out of it leads to knowing beyond what he only supposed to know (Geysler 1999). Thus, inculcating in the minds of learners to take responsibility in their own learning undeniably will lead them the way to always do searching out there what they know (Vella, Berardinelli & Burrow 1998). (CMO, No. 46, series 2012) thus the focus is on students' attainment of competencies where there is a need to observe and/or measure the knowledge, skills and attitudes of students to achieve the learning outcomes. The achievement will only be possible if the learners are well equipped with the 21<sup>st</sup> Century learning skill-the Computer Efficacy.

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With OBE, students' achievement for learning doesn't depend to what their teachers are telling them in the classroom. This focuses on learners' transformation where they themselves are solely responsible of their own absorption of learning. Emphasizing the precision simply is the idea of remarkably change that would greatly improve OBE (Spady 1998). This idea surmises that all those who are involve in program or course or prospectus enhancement to include application and assessment so that it will eventually serve as guide and basis to come up with proper determination of achievements or performances of the learners. This clearly exemplifies that expected accomplishments of learners greatly lead to effective outcomes (Willis & Kissane, 1997). With OBE, learners are expected to attain successful learning outcomes by way of being armed of learnings, abilities and potentials such as ideals and innate behaviors just as once will be finishing their education. With all of this facts students' attitudes and self-efficacy towards the use of computer is strongly encouraged.

The students regardless of their chosen academic courses, the need for them to be self-efficient in computer use is of great help in their education's success. Having been erudite on the use of internet where considered to be a vast bank of data, they can easily acquire learning on their own. It is a living reality that through computers if and only if one is capable of using it, she/he can be able to access any information he/she needed. Even in the absence of a teacher inside the classroom, learning will still be in place. Acquisition of learning through computer can lead to advancement for computers development is erratic. Advancement in education turned out to be incomparable to previous years and few predicts it to happen (Gibson 1997). Vital change is so unforeseen that the least important now may be the most important later, the unreachable will be unreachable and the undoable be doable much more the unknown will be easily known. This means everything might be able to be realized ahead and that every organization in the entire humanity be it academe will have a complete change in looking at the future. This simply exudes that with computers we expect for an amazing advancement which will lead to everybody's fast attainment of learning that can be used for futures success which will contribute to one's life headway.

## **II. MATERIALS AND METHODS**

A total of three hundred fifty-one (351) students of the Isabela State University Roxas Campus were selected in this study using Slovin's Formula and random sampling was employed for each class from different courses and year level.

The study may be described as following a correlational design since a large number of students were surveyed, interviewed and observed in their classrooms about their attitude and self-efficacy towards the use of computer, with an aim of looking at how different variables affect each other.

In a correlational design, the assumption is every part of a system affects its entirety and that anything happens in a system creates change and will lead to variation in the totality and the root of an event happened may affect the whole system. Simply, anything may have effect to the whole design of a system.

In order to examine the attitude and self-efficacy towards computer of the participants, a survey questionnaire was used based on the Computer Attitude Scale (CAS) developed by Selwyn (1997) and later modified according to the level of respondents by Ignacio, et al (2010) and the Self-Efficacy Scale (CSS) from the "Murphy Scale" developed by Murphy et. Al (1989).

The instrument, "Exploring Students' Attitude and Self-Efficacy towards Computer" has three (3) sections. In section 1, the participants were asked about their background like name (optional), age, gender, course and year level. Completion Technology training course and frequency of the use of computer were also been asked. The participants had the options to choose from the list of computer functions being provided as to their purpose of using a computer. The list includes electronic mail, games, on-line shopping, material design, typing and maintaining files, making videos and PowerPoint presentations, chatting and banking. If not included on the list being provided, the participants have also the option to indicate.

In Section 2, the participants were asked on their computer attitude (see Table 1). There were twenty-three (23) items. The statement on each number can be categorized from the four components of attitude; this may be affective, perceived usefulness, perceived comfort, and behavioral intention.

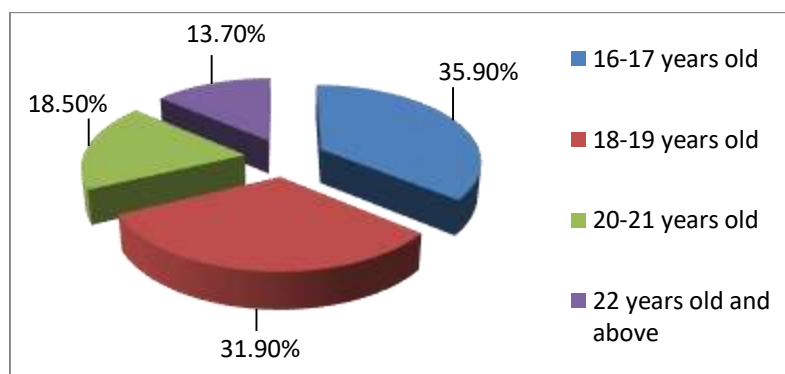
In Section 3, participants were asked on their self-efficacy. There were thirty-three (33) items, where the statements can be classified based on the two levels of computer skills, the beginner's level and the advanced level (see Table 2).

Both in Section 2 and 3 that the participants responded as to their degree of agreement and disagreement based on the Likert Scale 1-5; 1= strongly disagree, 2=disagree, 3=neutral, 4=agree and 5= strongly agree, and the new range of scores as follows 1-1.49= strongly disagree, 1.5.0-2.49 = disagree, 2.5.0-3.49 = agree, 3.5.0-4.49 = agree, 4.5-5.00 = strongly agree. In the negative statements, responds were reversed.

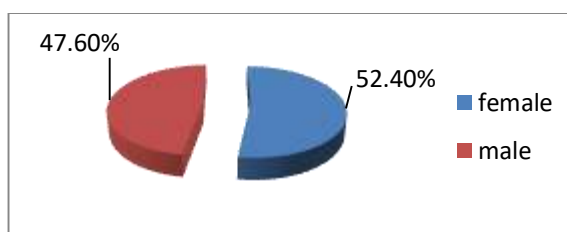
The researcher made revisions on Section 1 of the instrument, particularly on choices on how often on the use of computer by the participants, so with categories on how frequent in the use of the different functions of computer. Statistical Package for Social Science (SPSS) was used to treat all gathered data. Frequencies and percentages were computed for the profile of respondents in terms of age, gender, course and year level. Completions of a computer training course, frequency of computer usage based on the list of computer functions were also considered. One-way ANOVA was used to determine the significant difference on the participants' attitude and self-efficacy when grouped according to their background. Pearsons' correlation was used to determine the significant interrelationship among the attitude and self-efficacy of the participants towards the use of computer.

### **III. RESULTS AND ANALYSIS**

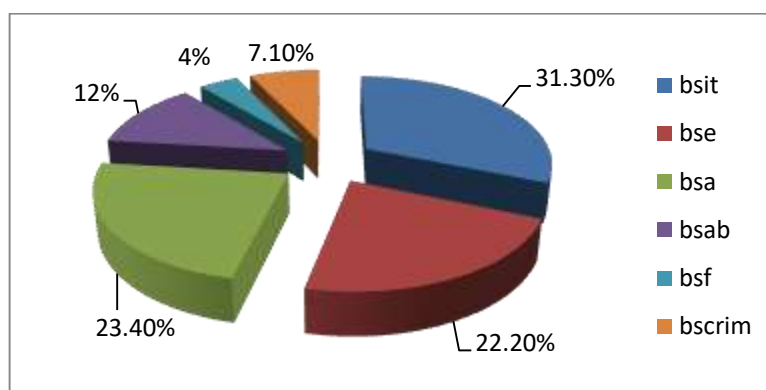
Respondents' profile in terms of their age, gender, course, year level, technology training course completed, currently with technology training course, frequency of computer usage, purpose of computer usage, attitudes towards computers and their computer self-efficacy; significant differences in their attitudes toward computer and computer self-efficacy when grouped according to age, gender, course, year level, technology training course completed, currently with technology training course and frequency of computer usage were evaluated as well as significant interrelationship among their attitude towards computer, self-efficacy, age, gender, course, year level, frequency of computer usage and purpose of computer usage results through figures and tables were represented below.



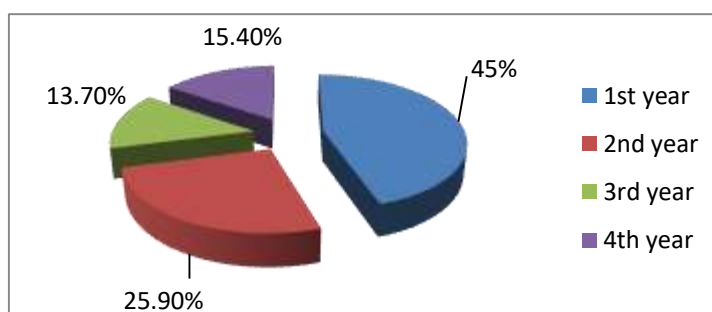
**Figure 1:** respondents profile in terms of age.



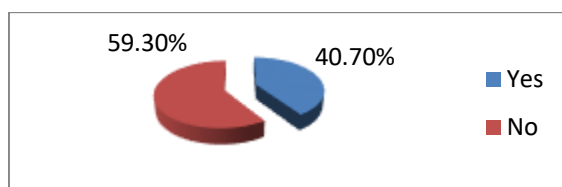
**Figure 2:** respondent's profile in terms of gender



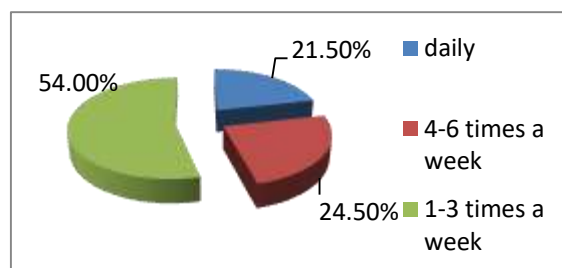
**Figure 3:** respondent's profile in terms of course



**Figure 4:** respondent's profile in terms of year level



**Figure 5:** respondent’s profile in terms of technology training/course completed



**Figure 6:** respondent’s profile in terms of frequency of computer usage

**Table 1:** Respondents profile in terms of scale for the purposes of computer usage

| Purpose of Computer Usage                  | Weighted Mean | Description |
|--|---------------|-------------|
| Email                                      | 2.87          | Often       |
| Chat Rooms                                 | 3.09          | Often       |
| Games                                      | 2.75          | Often       |
| Surfing the Internet                       | 3.20          | Often       |
| Online Shopping                            | 3.44          | Often       |
| Entertainment                              | 3.31          | Often       |
| Materials Design                           | 3.38          | Often       |
| Web Page Design                            | 3.50          | Often       |
| Typing and Maintaining Files               | 3.31          | Often       |
| Banking                                    | 3.70          | Often       |
| Typing and making videos and presentations | 3.08          | Often       |
| Others specify: Downloading                | 4.00          | Always      |

**Table 2:** respondent’s profile in terms of their attitudes toward computer

| Attitude Components | Item Number   | Mean   | SD      |
|---------------------|---|--------|---------|
| Affective           | I am afraid that I may destroy a computer if I will be given the chance to use it.          | 2.6610 | 1.13472 |
|                     | I am hesitant to use a computer because of my worry to commit errors which I can’t correct. | 2.8006 | 1.06105 |

|                         |  |          |          |
|-------------------------|--|----------|----------|
|                         | I am anxious in operating a computer.  | 2.9744   | 1.02646  |
|                         | Computers bring me distressed.   | 2.2707   | .96701   |
|                         | Using Computer doesn't fright me in any case.  | 3.5071   | 1.01099  |
|                         | I am hesitant to use a computer when feel unwise.                                      | 2.5641   | .88529   |
|                         |  | 2.796317 | 1.014253 |
|                         | I improve my work better when using computer.  | 4.1111   | .96016   |
|                         | I am more productive in working when using computer.                                   | 3.8348   | 1.00629  |
| Perceived<br>Usefulness | I am able to enhance my presentation related to my work greatly when using computer.   | 3.9031   | .98663   |
|                         | I can do more remarkable and creative work when using computer.                        | 3.9259   | .96522   |
|                         | Average  | 4.0000   | 0.979575 |
|                         | 3. I could perhaps instill myself most of the things I need to know about computers.   | 3.7664   | 1.02098  |
|                         | 6. I can make the computer perform anything I need to.                                 | 2.9088   | 1.09946  |
| Perceived<br>Comfort    | 13. I do not need someone to tell me the best way to use a computer.                   | 2.8177   | 1.03968  |
|                         | 15.* I need a skilled person nearby when I use a computer                              | 3.1738   | 1.06690  |
|                         | 17.* I am not in complete control when I use a computer                                | 2.7749   | 1.00459  |
|                         | 19. If I troubled using the computer, I can usually unravel them one way or the other. | 3.4558   | .95179   |
|                         | Average  | 3.149567 | 1.030567 |
|                         | 2. I will use computers frequently throughout school.                                  | 3.2279   | 1.00537  |
|                         | 5.* I only use computers at school when I am told to.                                  | 3.0057   | 1.10581  |
|                         | 8.* I avoid coming into contact with computers in school.                              | 2.7407   | .97601   |
| Behavioral<br>Intention | 10. I would avoid taking a job if I knew it involved working with computers.           | 2.4416   | 1.18147  |
|                         | 22. I would work harder if I could use computer more frequently                        | 3.5214   | .96746   |
|                         | 23. I can learn more in using computer than in reading books                           | 3.4302   | .97400   |
|                         | Average  | 3.06125  | 1.03502  |
| Grand Mean              |  | 3.23771  | 1.01485  |

**Table 3:** respondent's profile in terms of computer self-efficacy

| Levels of<br>Computer Skills | Items | Statements | Mean | SD |
|------------------------------|-------|------------|------|----|
|------------------------------|-------|------------|------|----|

|                     |   |   |        |         |
|---------------------|---|---|--------|---------|
| Beginner's<br>Level | 1   | I feel confident working on a personal computer.                          | 3.8974 | 1.04787 |
|                     | 2   | I feel confident getting the software installed and running.              | 3.5470 | .94563  |
|                     | 6   | I feel confident entering and saving data (numbers or words) into a file. | 3.8519 | .92009  |
|                     | 7   | I feel confident escaping/exiting from a program or software.             | 3.5299 | .96723  |
|                     | 9   | I feel confident choosing a data file to view on a monitor screen.        | 3.6866 | .86772  |
|                     | 12  | I feel confident handling a USB flash disk correctly.                     | 3.8120 | .96153  |
|                     | 15  | I feel confident making selections from an onscreen menu.                 | 3.4900 | .93153  |
|                     | 17  | I feel confident using a printer to make a "hard copy" of my work.        | 3.7664 | .96339  |
|                     | 18  | I feel confident copying (burning) files, pictures, videos in CD.         | 3.6296 | .93481  |
|                     | 19  | I feel confident copying an individual file.                              | 3.4644 | 1.01321 |
|                     | 20  | I feel confident adding and deleting information to and from a data file. | 3.6097 | .97618  |
|                     | 21  | I feel confident moving the cursor around the monitor screen.             | 3.7521 | 1.05212 |
|                     | 23  | I feel confident using the computer to write a letter or essay.           | 3.9060 | .86172  |
|                     | 27  | I feel confident storing software correctly.                              | 3.5840 | .87712  |
| Advanced Level      | 30  | I feel confident getting rid of files when they are no longer needed.     | 3.4615 | .88999  |
|                     | 31  | I feel confident organizing and managing files.                           | 3.7009 | .88736  |
|                     |   | AVERAGE   | 3.7009 | 0.88736 |
|                     | 3   | I feel confident logging into the world wide web (www).                   | 3.7721 | .99105  |
|                     | 4   | I feel confident working on a world wide web (www).                       | 3.5954 | .93892  |
|                     | 5   | I feel confident using the user's guide when help is needed.              | 3.7493 | .86510  |
|                     | 8   | I feel confident logging off the world wide web (www).                    | 3.5954 | 1.01214 |
| 10                  | I feel confident understanding terms/words relating to computer hardware. | 3.6581  | .84680 |         |

|            |  |          |          |
|------------|--|----------|----------|
| 11         | I feel confident understanding terms/words relating to computer software.  | 3.5670   | .91054   |
| 13         | I feel confident learning to use a variety of programs (software).   | 3.7322   | .82950   |
| 14         | I feel confident learning advanced skills within a specific program (software).                                  | 3.6781   | .89542   |
| 16         | I feel confident using the computer to analyze number data.  | 3.6011   | .87857   |
| 22         | I feel confident writing simple programs for the computer.   | 3.6439   | .93577   |
| 24         | I feel confident describing the function of computer hardware (keyboard, monitor, disk drives, processing unit). | 3.7037   | .94292   |
| 25         | I feel confident describing the function of computer hardware (keyboard, monitor, disk drives, processing unit). | 3.5726   | .94097   |
| 26         | I feel confident getting help for problems in the computer system.   | 3.5413   | .88987   |
| 28         | I feel confident explaining why a program (software) will or will not run on.                                    | 3.3989   | .89148   |
| 29         | I feel confident using the computer to organize information.   | 3.6695   | .89708   |
| 32         | I feel confident troubleshooting computer problems.  | 3.3048   | 1.01753  |
| 33         | I feel confident connecting computer to other electronics and appliance like LCD projector, speaker, etc.        | 3.7293   | 1.06004  |
|            | Average  | 3.7293   | 1.06004  |
| GRAND MEAN |  | 3.642488 | 0.061458 |

**Table 4:** correlation matrix between respondents' profile, attitude towards computer and self-efficacy

|                    |                     | Attitudes toward<br>Computer | Computer Self<br>Efficacy |
|--------------------|---------------------|------------------------------|---------------------------|
| Age of students    | Pearson Correlation | .068                         | .112(*)                   |
|                    | Sig. (2-tailed)     | .307                         | .036                      |
|                    | N                   | 227                          | 351                       |
| Gender of Students | Pearson Correlation | .135(*)                      | .051                      |
|                    | Sig. (2-tailed)     | .042                         | .342                      |
|                    | N                   | 227                          | 351                       |

*Correlation is significant at the 0.05 level (2-tailed).*



|    |  |                     |       |           |
|----|--|---------------------|-------|-----------|
| ** | Course                                 | Pearson Correlation | -.040 | -.194(**) |
|    |  | Sig. (2-tailed)     | .544  | .000      |
|    |  | N                   | 227   | 351       |
|    | Year                                   | Pearson Correlation | .111  | .126(*)   |
|    |  | Sig. (2-tailed)     | .096  | .018      |
|    |  | N                   | 227   | 351       |
|    | Taking computer course previously?     | Pearson Correlation | -.102 | -.017     |
|    |  | Sig. (2-tailed)     | .124  | .745      |
|    |  | N                   | 227   | 351       |
|    | Year taking computer course previously | Pearson Correlation | -.060 | -.147(**) |
|    |  | Sig. (2-tailed)     | .368  | .006      |
|    |  | N                   | 227   | 351       |
|    | Currently taking a computer course?    | Pearson Correlation | .036  | -.114(*)  |
|    |  | Sig. (2-tailed)     | .592  | .033      |
|    |  | N                   | 227   | 351       |
|    | How often do you use computers?        | Pearson Correlation | -.052 | -.249(**) |
|    |  | Sig. (2-tailed)     | .433  | .000      |
|    |  | N                   | 227   | 351       |

*Correlation is significant at the 0.01 level (2-tailed).*

Results clearly indicated that some computer applications were being used by the students in their daily activities. It is evident through all the results of the analyses that student in the university is efficient in the use of computers regardless of what their courses are. Also it was found out that mature students only used banking in sending money unlike younger students who mostly uses computer in internet surfing to research on their lessons, emailing, gaming, designing web pages, making videos and presentations, entertainment and downloading. There are no significant differences between the respondents' profile and attitude towards computer, however significant differences between respondents who are currently with training/course and the frequency computer usage.

#### IV. CONCLUSIONS

This study is an attempt to emphasize the vital role and importance of computer technology in modern pedagogy. The efficient and productive use of computer technology is highly dependent on the students' attitudes and self-efficacy.

The challenge for schools is that they provide their students with a lot of opportunities to use the computer so that their attitude towards computers becomes more positive. However, it may be inferred from the research that as students become used to computers they lose the "excitement" or "drive" to use computers due to over-

familiarity. Thus, while it is true that schools should provide more computer-based activities to enhance computer self-efficacy and attitude, schools should equally provide the students with other activities that are not computer-based. A repertoire of computer and non-computer based activities will hopefully make the students still “excited” and “motivated” to utilize computer technology in making school work easier and fun. This positive attitude towards computer will definitely help the student cope with emerging approaches to education which gives the student an advantage to those students who did not experience computer training.

## V. RECOMMENDATIONS

It is highly recommended then that continuous integration of computer subject in the academic curriculum be included for the students to be able to use computer in acquiring advance learning aligned with their chosen field of endeavors. It is a fact that with today’s educational paradigm students should be the ones producing learning within them because with OBE it’s already learner centered not teacher centered. Therefore, the need for them to be efficient in using computers is a powerful tool and of great help for them to attain the learning they should be able to possess.

## VI. ACKNOWLEDGEMENTS

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