COMPUTER-BASED TECHNOLOGIES AND THE SCIENCE TEACHERS IN THE CATHOLIC ELEMENTARY SCHOOLS IN BAGUIO CITY

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ABSTRACT The study determined the availability of computer-based technologies in the Catholic elementary schools in Baguio City; the proficiency of the science teachers on the use of these technologies; their frequency in using them; their level of awareness on the purposes of using these technologies; and the problems on the use of computer-based technologies as perceived by the science teachers. The perceptions of the teachers were tabulated and compared according to age, gender, civil status, number of seminars/trainings/workshops attended and school. The respondents in the study were 30 science teachers from the Catholic elementary schools in Baguio City. The results show that the science teachers in the Catholic schools of Baguio City perceived that the specified computer-based technologies in general are ‘moderately available’. Respondents who are younger, male, and with more number of seminars, trainings or workshops attended perceived higher availability of the specified computer-based technologies. They perceived that the most available computer-based technology in the Catholic elementary schools in Baguio City is the computer while the least available is the LCD projector. The teachers generally perceived themselves as ‘moderately proficient’ in using the specified computer-based technologies. They perceived themselves as most proficient in the use of the computer and least proficient in the use of the LCD projector. Science teachers belonging to age brackets 21-25 and 36-40, male, single, with 6 and above seminars, trainings and workshops attended and teaching in SLU-LES are more proficient. The respondents use the specified computer-based technologies ‘sometimes’ or once in three or more months. The computer is the most frequently used technology. The respondents whose ages range from 21-25, female and with 6 and above seminars, trainings or workshops attended use the specified computer-based technologies ‘more often’. The teachers are generally ‘very aware’ of the specified purposes of using computer-based technologies regardless of their age, gender, civil status, number of seminars attended and school. They perceived the specified problems in general as ‘moderately serious’.

INTRODUCTION

Background of the Study
The widespread reliance of contemporary society upon computer-based technologies reflects the increasing importance of electronic information management and communication tools. Technology, in its many forms, has become a powerful tool to enhance curriculum and instruction. Productivity, communication, research, and learning are dramatically enhanced through the appropriate use of technology, thereby allowing educators to accomplish tasks that were not previously possible (California Teacher Credentialing Technology Standards, 2000).

Aware of the increasing demands of our society today and of the need for elementary science teachers to become competent teachers of technology, the researcher was motivated to undertake this study. The researcher believes that this study will help science teachers to become more fluent and critical users of technology for them to provide a relevant education and to prepare students to be life-long learners in an information-based, interactive society.

Theoretical Framework
As schools continue to acquire more and better hardware and software, the benefit to students will depend increasingly on the skill with which some teachers are able to use these new
tools. Figure 1 shows the paradigm of this study. The independent variables are age, gender, civil status, seminars/trainings/workshops attended on computer-based technologies (CBT), and the school where the teacher-respondent is teaching. The dependent variables are level of availability, proficiency on the use, awareness on the purposes, frequency of use of computer-based technologies according to age, gender, civil status, seminars/trainings/workshops attended on computer-based technologies and school. The dependent variables also include the degree of seriousness of the problems encountered on the use of computer-based technologies; comparison of perceptions of science teachers on the level of availability, level of proficiency on the use, frequency of use and level of awareness on the purposes of using CBT according to age, gender, civil status, seminars/trainings/workshops attended on computer-based technologies and school; and comparison of perception of teachers of the seriousness of the problems according to age, gender, civil status, seminars/trainings/workshops attended on computer-based technologies, and school.

### Independent Variables
- a. age of teacher
- b. gender
- c. civil status
- d. seminars/trainings/workshops attended on computer-based technologies school

### Dependent Variables
1. level of availability, proficiency on the use, awareness on the purposes, and frequency of use of computer-based technologies, according to:
   - a. age
   - b. gender
   - c. civil status
   - d. seminars/trainings/workshops attended on computer-based technologies
   - e. school
2. degree of seriousness of the problems encountered on the use of computer-based technologies
3. comparison of perceptions of science teachers on the level of availability, level of proficiency on the use, frequency of use, and level of awareness on the purposes of using CBT, according to:
   - a. age
   - b. gender
   - c. civil status
   - d. seminars/trainings/workshops attended on computer-based technologies
   - e. school
4. comparison of perception of teachers of the seriousness of the problems according to:
   - a. age
   - b. gender
   - c. civil status
   - d. seminars/trainings/workshops attended on computer-based technologies school

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**Figure 1. Paradigm of the study**

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**METHODOLOGY**

This study was conducted during the second semester of the school year 2007-2008 in the Catholic elementary schools in Baguio City, namely St. Louis University Laboratory Elementary School (SLU-LES), St. Louis School Center (SLSC), and Don Bosco Elementary School. The respondents were 30 science teachers in the said Catholic elementary schools. To answer the specific questions raised in the study, the descriptive research method was employed using one set of survey questionnaire-checklist prepared by the researcher for the clientele. The researcher
also made use of the comparative research method. Determining the weighted mean was the fundamental treatment that was used in this study. The analysis of variance (ANOVA) and t-test were employed to test the significance of the obtained means.

RESULTS AND DISCUSSION

Level of Availability of Computer-based Technologies

The science teachers in the Catholic schools of Baguio City perceived that the specified computer-based technologies in general are ‘moderately available’. Respondents who belong to the age brackets 31-35 and 36-40 perceived the specified computer-based technologies as ‘very available’; whereas those who belong to 21-25, 26-30 and 41 and above age brackets perceived the computer-based technologies as ‘moderately available’. The male respondents perceived a higher availability of the specified computer-based technologies than the female respondents. Male respondents perceived the computer-based technologies as ‘very available’ while the female respondents perceived them as ‘moderately available’. Both single and married respondents perceived that the computer-based technologies in general are ‘moderately available’. Both groups of respondents perceived the computer as the most available. The respondents who attended 4 and above seminars, trainings or workshops perceived the computer-based technologies as ‘very available’. Those who attended 3 and below perceived the computer-based technologies as ‘moderately available’. The science teachers differ significantly in their perceptions according to number of seminars on the availability of the LCD projector. Science teachers from one school perceived the computer-based technologies as ‘poorly available’. Respondents from another school perceived them as ‘very available’. Respondents from the third school perceived the computer-based technologies as ‘moderately available’. There are very significant differences in the perceptions of the teachers according to school on the availability of computer-based technologies.

Level of Proficiency of the Elementary Science Teachers on the Use of Computer-based Technologies

The teachers generally perceived themselves as ‘moderately proficient’ in using the specified computer-based technologies. They perceived themselves as most proficient on the use of the computer and least proficient on the use of the LCD projector. Teachers who are in the age brackets 21-25 and 36-40 perceived themselves as ‘very proficient’ in using the specified computer-based technologies. Teachers who belong to 26-30, 31-35 and 41 and above age brackets perceived themselves as ‘moderately proficient’. The males are more proficient on the use of the specified computer-based technologies. They perceived themselves as ‘very proficient’ while the females perceived themselves as ‘moderately proficient’. Both the single and the married respondents viewed themselves as ‘very proficient’ on the use of the computer however, the single respondents perceived themselves as more proficient than the married respondents on the use of the internet. Those who attended 6 and above seminars are much more proficient than those with lower number of seminars. Teachers from one school perceived themselves as ‘very proficient’ on the use of the specified computer-based technologies. The teachers in the other two schools perceived themselves as ‘moderately proficient’.

Frequency of the Elementary Science Teachers in Using Computer-based Technologies

The respondents use the specified computer-based technologies, in general, ‘sometimes’ or once in three or more months. The computer is used ‘often’. The internet is used ‘sometimes’. The LCD projector is used ‘rarely’. Respondents in the age brackets 21-25, 26-30, 31-35 and 36-
40, in general, use the specified computer-based technologies ‘sometimes’ or once a month. The oldest group uses them ‘rarely’ or once in 3 or more months. The female respondents use the computer-based technologies ‘often’ or once in a week while the male respondents use them ‘sometimes’ or once in a month. Both single and married respondents use the specified computer-based technologies ‘sometimes’ or once a month. The respondents attended 6 and above seminars, trainings, or workshops use the computer-based technologies ‘often’. The other groups of respondents use them ‘sometimes’. All teachers, in general, use the computer-based technologies ‘often’.

Level of Awareness of Elementary Science Teachers on the Specified Purposes of Using Computer-based Technologies

The respondents are generally ‘very aware’ of the specified purposes of using computer-based technologies. Respondents who belong to age brackets 21-25, 26-30 and 36-40 perceived themselves as ‘very aware’ of the specified purposes of using computer-based technologies. Those who belong to age brackets 31-35 and 41 and above perceived themselves as ‘moderately aware’. Both the male and female respondents perceived themselves as ‘very aware’ of the specified purposes of using computer-based technologies. Both single and married respondents also perceived themselves as ‘very aware’ of the specified purposes of using computer-based technologies. The respondents having 6 and above seminars, trainings or workshops perceived themselves as ‘very much aware’. Respondents having 0-5 seminars, training or workshops perceived themselves as ‘very aware’. Respondents from the three schools perceived themselves as ‘very aware’ of the specified purposes of using computer-based technologies.

Problems on the Use of Computer-based Technologies and Their Degree of Seriousness as Perceived by the Science Teachers

The teachers perceived the specified problems as ‘moderately serious’. The youngest group perceived the specified problems as ‘moderately serious’. Those who belong to age brackets 26-30 and 41 and above also perceived the problems as ‘moderately serious’. The respondents belonging to age brackets 31-35 and 36-40 perceived the problems as ‘less serious’. The male respondents perceived the problems as ‘less serious’ while the female respondents perceived the problems as ‘moderately serious’. Single respondents perceived the problems as ‘moderately serious’ while the married respondents perceived them as ‘less serious’. The respondents with 0-1 and 6 and above seminars, trainings, or workshops attended, perceived the problems as ‘less serious’. Those who attended 2-3 and 4-5 perceived the problems as ‘moderately serious’. Respondents from two schools perceived the problems as ‘less serious’, whereas respondents from the third school perceived the problems as ‘moderately serious’.

CONCLUSIONS

1. The most available computer-based technology in the Catholic elementary schools in Baguio City is the computer while the least available is the LCD projector.
2. Respondents who are younger, male, and with more number of seminars, trainings or workshops attended perceived higher availability of the specified computer-based technologies.
3. The teachers are most proficient on the use of the computer while least proficient on the use of the LCD projector. This implies that the availability of computer-based technologies affects the proficiency of the Science teachers on the use of the said technologies.
4. Science teachers belonging to age brackets 21-25 and 36-40, male, single, with 6 and above seminars, trainings and workshops attended and teaching in one school considered are more proficient.
5. The computer is the most frequently used technology.
6. The respondents whose ages range from 21-25, female and with 6 and above seminars, trainings or workshops attended use the specified computer-based technologies more often.
7. The teachers have a high level of awareness of the specified purposes of using computer-based technologies.
8. Most of the specified problems are perceived as less serious to moderately serious.

RECOMMENDATIONS

1. Since we are in a fast changing technological society, science teachers must have a continuing education on the use of computer-based technologies to keep themselves updated or abreast and to further improve their proficiency.
2. Computer-based technologies are very helpful in teaching children of today and of the future so the teachers must increase their frequency in using them.
3. Although none of the specified problems are perceived to be very serious, school administrators and teachers must still look into how problems can be further minimized.
4. A needs assessment must be done by school administrators to look into what the teachers already know and what they still need to know about the applications of computer-based technologies into the classroom.
5. Further research into how computer-based technologies are used inside the classroom is highly recommended.

REFERENCES


