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A STUDY TO DETERMINE THE BENEFITS OF
USING COMPUTER TECHNOLOGY
AS A TEACHING-LEARNING TOOL
AT SECONDARY SCHOOLS IN BELIZE

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Faculty of Education

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TABLE OF CONTENTS

Acknowledgement

Abstract

Chapter 1

Introduction	1
Background	2
Purpose of the Study	4
Significance of the Study	6

Chapter 2

Definition of Terms	7
Literature Review	8

Chapter 3

Method	
Population and Sample	18
Ethical Considerations	20
Research Instrumentation	21
Procedures	22
Data Analysis	23

Chapter 4

Data Presentation	24
Findings and Analysis	30
Summary of Findings	32

Chapter 5

Conclusion	33
Limitations	35
Recommendations	36

Bibliography	37
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APPENDICES	38
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ABSTRACT

Conducting this research was very enlightening. As a secondary school teacher, it is important that teachers get exposed to and are aware of the latest trends in education. Recognizing and understanding the need for the use of computer technology as a teaching-learning tool, teachers and principals are encouraged to acquire the necessary computer technology skills, and training that will enable them to effectively integrate computer technology as an instructional/learning tool within their subject areas.

CHAPTER 1

INTRODUCTION

Today, we are living in a time of excitement and promise where computer technology has become common. Computers have become the major force in business, education, health care, and home maintenance. As they become more compact and less expensive, computers will be even more a part of our lives.

As we think about the future, we realize that the science of computers and robotics is no longer science fiction. Exciting and new way discoveries are taking place every day and are being explored in many ways for usage in almost every area in life. For example, doctors and scientists use computers to conduct researches. Through the use of an X-ray via a computer, a doctor can diagnose a patient without having to conduct a surgery. As it is today, in the world of computers, the future is only days away.

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BACKGROUND

Computers have been in existence for over sixty years. The transformation of computers since then has been enormous.

Many years ago, computers were large and were used by only a few highly trained specialists. Today however, computers are in homes, schools and business places. This change in computers has also brought changes into our lives. For example, today we can monitor our appliances in our homes; we can tell our cars where we want to go; and we can teach a skill as well. Computers have come a long way and have helped people to collect information, store it, change it and work with it. The use of computers in schools and education has also sky-rocketed. Through the Computer Aided Instruction (CAI) software, computers can teach individuals lesson(s). Today, computers in schools are being used for administrative purposes such as keeping track of students' performance, student records and preparing school budgets.

However, computers in schools can be used for other purposes by teachers such as grading papers, keeping track of students' grades and preparing students to use computers in all areas of life through subjects. According to a former lecturer of the Belize Technical College and now a lecturer at the University of Belize, said that computers were introduced into Belizean Secondary classrooms between the end of the 1990's and the beginning of 2000.

Since 2000, most schools in Belize have computers. Today, three years later, more than 80% of all schools in Belize have access to computer technology and the

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Internet.

The impact of computer technology is so profound that even business organizations are educating and empowering their workforce in computer technology.

PURPOSE OF STUDY

The purpose of this study is to gather information that will address the benefits of using computers as a teaching-learning tool at the secondary school level. Through this study, the researcher will provide teachers, principals, education policy-makers and students with relevant information on the usefulness/benefits of computers in the classroom. It is hoped that the findings derived from this study will:

- (1) Convince Government to put a critical eye on the importance of getting more qualified resource personnel that will be able to assist teachers who may not feel competent enough to use computers as a tool for learning.
- (2) Help teachers and principals become more aware of the significance of getting the necessary skills/training in computer technology as a teaching tool as well as a learning tool.
- (3) Provide students with information on the reason(s) why computers as a learning tool is beneficial.

The researcher's hypothesis is:

"Students, teachers and principals of secondary schools in Belize can benefit greatly by using computers as a teaching-learning tool."

The research will answer the following questions:

- (1) What are the benefit(s) of using computers as a teaching-learning tool?
 - (i) How will students benefit?
 - (ii) How will teachers/principals benefit?

(2) What is the training necessary for teachers to possess to be able to effectively use computers as a teaching-learning tool?

SIGNIFICANCE OF THE STUDY

 The Government of Belize, through the Ministry of Education, has a national policy of education that is rooted in a philosophy that sees education as the lifelong acquisition of knowledge, skills and attitudes required for full development and for active participation in education. Based on this fundamental principle/policy, the researcher hopes to provide policy-makers and educators with information that will enhance their knowledge concerning the usefulness of computers as a teaching-learning tool. Since computers are and will continue to be the tool of instruction and learning, potential graduates as well as teachers need to develop more appreciation for computers as instructional, learning and applications tools.

This study will help our students to want to become programmers and designers. They will move away from the idea of being a user is sufficient. For teachers, it will be a focal point. They will be able to rationalize the need for acquiring more knowledge/skills about computer technology as a teaching-learning tool. In the end, educational policies will be enacted to ensure that all secondary school teachers be trained to use computer technology effectively as a teaching-learning tool in their respective classrooms.

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CHAPTER 2

DEFINITION OF TERMS

Computer technology – A power driven machine with keyboards, electronic circuits, storage capacity, and recording devices for high speed performance with multiple capabilities.

Curriculum – A regular or particular course of study.

LITERATURE REVIEW

Slowly but surely, technology is changing the way teachers teach and how kids learn. In classrooms across the country, communication and collaboration devices of every type – including computers – are changing how teachers teach and students learn. Many education experts are calling for more use of technology in the classroom to ensure that today's students are better equipped adults to enter the workforce.

Technology does not teach itself, though. Teachers must be trained to use it and the curriculum must be designed to incorporate it. Indeed, one of the main obstacles to using computer technology in the classroom is teacher training. While most believe that using up-to-date technology in the classroom has definite benefits, it is the price that becomes a concern if the technology is not doing its job of helping teachers to communicate better and helping children learn (Julie Hill 2002).

The objective to have every school in Belize connected to the rest of the world through computer technology is clear to the Government of Belize (Prime Minister Musa 2003 pre-election campaign speech).

As clear as the objective appears to be, there are many questions that need to be answered, such as:

- (1) How will teachers obtain the training necessary to use computer technology?
- (2) What support system will be put in place to help teachers incorporate the best possible application of computer technology into their classrooms?
- (3) Why should computer technology enter the classroom?

In order for these questions to be answered, educators will first need to define a

curriculum that will address how modern computer technology can be incorporated into their existing curriculum.

Before John Dewey's ideas on educational reform education was based on a need-to-know foundation and it was only provided at a higher level in the social world to those who were seeking careers in business, politics and exploration (Stephenson 1995).

As education systems became better defined, specific curricula were developed with emphasis of "what needs to be known." Today, in the 21st century, it is no different. Curricula are being developed based on what is popular with emphasis being given to the elements that provide functioning skills to meet the social, cultural, historical and economic needs of society (Henry Petroski 1992).

The development of new technologies is adding more momentum to educational reform through the many innovations that are being tailored to improve lives. This rapid and continued advancement of technology is placing enormous pressures on educators to provide students with the skills and knowledge necessary to match the digital millennium. With this comes the need to integrate computer technology into the classroom.

Teachers are the key to students' success. Therefore, the need for teachers to master new methods, knowledge and techniques with regards to computer technology must be given special attention. There needs to be a progression of technology adoption and integration for the education community as well.

Despite different levels of adoption by individuals, experiencing discomfort when faced with change is a collective human dynamic. Our behaviour is motivated in part by

internal dissonance, by a need to reduce the condition by changing our knowledge, attitudes or actions. Everett M. Rogers (1995), in Diffusion of Innovations, details a five step innovation diffusion theory that educational reformists can use whereby teachers may achieve knowledge, change attitudes, and embrace actions toward using new technology.

The first stage, or Knowledge Stage, is when teachers are not technology users but are aware that it exists. At this stage, students may be users of technology, but they use it in ways determined by someone other than their teacher. For example, they may have computers at home or participate in computer labs outside the classrooms. At this stage, the teachers' dissonance may be high. The second stage, or Persuasion Stage, occurs when teachers are making their first interpersonal contacts with peers who will tend to emulate, and gain new information about the technology currently available. At this stage, there is not necessarily information about the application of technology to the curriculum, but rather an introduction to the technology as support for traditional productivity (i.e. grading software, correspondence etc.). The level of dissonance begins to decline as new information is assimilated.

The Decision Stage occurs when teachers choose to accept or reject the new changes. At this stage, teachers begin the process of adopting technology to assist with traditional tasks and adapting the technological changes to enrich their curriculum. They begin to see ways technology might be connected to the curriculum, for example, by exploring websites using CD-ROM encyclopedia or doing word processing.

At the fourth stage or Implementation stage, teachers move from adaptation to

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an appreciation stage where technology is viewed as a relevant stage for teaching and learning. They may begin to design learning experiences and environments involving technology that will assist in achieving objectives and outcome. A shift toward student-directed integration occurs at this stage to produce improvements in learning that allow students to master higher-order thinking skills, complex concepts, and skills they may have not encountered without technology. For example, students assigned to examine water quality in a stream near their school may use computers to compute and graph data.

In the final stage, or Confirmation Stage, teachers redefine their classroom environments and leverage technology to involve students in tasks that involve organizational skills and an ability to master content and apply basic skills. Teachers not only will begin to invent new applications for the technology, but will also collaborate with other teachers to create a unified use of technology across the school's curriculum.

Based on the diffusion theory, teachers normally advance through a series of motivational stages to incorporate technology within their methodology and curriculum. Students likewise need to find motivation, interest, and a reason for technology to advance their ability to learn. This can be done by the teacher, creating an environment that encourages teacher contact, cooperation among students, and active learning. Teachers must also provide prompt feedback, emphasize time on task, communicate high expectations, and respect diverse talents and ways of learning (Chickering and Garrison 1987).

Integrating computer technology in the classroom will require that:

- (1) Teachers acquire the knowledge, change their attitudes about computer technology, and embrace actions towards using the new technology.
- (2) Teachers be exposed to new information about computer technology available.
- (3) Teachers accept the ways on how adopting computer technology can enrich their curriculum.
- (4) Teachers view computer technology as a relevant tool for teaching and learning.

Once the teacher's efforts are collaborated to create an environment that incorporates computer technology as a teaching-learning tool across the curriculum, the foundation of how to make the transition of integrating computer technology would have been built (Everett M. Rogers, 1995).

Most schools today have computer technology sitting in their labs yet they are not used by most teachers. Why is this so? Quite often the reason is that most teachers do not have the required computer technology training necessary to incorporate the tool into their respective classrooms. In addition, teachers are faced with other challenges such as learning new software, and developing lesson plans that incorporate the use of computer technology. Modifying traditional teaching techniques to incorporate technology is not easy. It involves time which teachers often lack. The lack of released time, learning how to use computers and other resources such as the Internet are also a part of the problem. This for example is one of the most frequent barriers that teachers encounter using computers and the Internet in instruction.

Training, preparation, and work environments have shown to have profound impact in teachers' readiness to use computer technology. Research has shown that

traditional professional development activities are often short-term, devoid of adequate follow-up, and do not address school context. The traditional computer technology program for new teachers has been criticized as being fragmented, superficial, and unconnected to real classroom experiences.

Overcoming this hurdle will require that teachers get the leadership of their schools involved and responsible for their training. The educational system through its higher education program, should also be held responsible to provide more funding and other support systems to improve teacher readiness to use computer technology as a teaching-learning tool in the classroom. Chin (2001), through his address to the US House of Representatives encourages school administrators to build strong support systems that include the community, businesses and parents, so that greater commitment can be made to provide more effective training for teachers in computer technology.

Principals/administrators who give their teachers encouragement and support see an increase in the usage of computers as an instructional tool. This can be done by administrators becoming familiar with various instructional strategies necessary to integrate technology into instruction. This can be done to evaluate teaching practices and model what they believe to be the "best practice." Teachers will embrace technology seeing that their principal has done such. This can further be illustrated by using up-to-date school websites for communication, PowerPoint presentations at faculty meetings (John Paul 1999). Oftentimes, additional support may be granted to teachers such as funding for computer workshops, by allotting teachers time off to

attend classes, seminars and conferences etc. to enhance their computer skills.

Today in Belize approximately 80% of schools have computer access. It is estimated that by the year 2008 all schools or educational institutions should have access to computers and be connected to the Internet or World Wide Web (Prime Minister Budget speech 2003). Why is the Government of Belize willing and ready to invest heavily in computer technology for schools? The answer is clear – computers are the “opportunity to open new doors.”

Technologies evolve and change over time with the concurrent changes in social, political and economic aspects of our world. If education is to respond to societal needs, and the world, then new changes will have to be made so that platform for the future would have been provided. Teachers must prepare students for the changes and challenges they will face. The responsibility of the teacher is to discover the judicious use of computer technology as a tool for teaching that will guide students to explore, discover, practice, and appreciate the world they will inherit (Mark Goddard 2002).

Therefore, teachers are being challenged to acquire the necessary computer skills that will allow them to effectively integrate computer technology as a teaching-learning tool into their respective classrooms. ✓

A study done by Orit Hazzan, a school teacher, shows that teachers who possess the necessary computer technology teaching skills use computers as a teaching-learning tool effectively. The study also showed that when computer technology is used as a teaching-learning tool, both parties (students/teachers) benefit

because an atmosphere of "student collaboration" is created (Kearsley & Shneiderman 1999). They also benefit greatly in the following ways:

- (1) The teacher was released from being seen as the central focus of a lesson.

Instead, they became guides/facilitators.

- (2) Teachers were able to follow students' work by looking at the screen.

- (3) Teachers saved time in drawing graphs, solving problems, and calculating.

Computers perform these functions precisely and accurately.

- (4) Students were able to conjecture, check their conjecture and make corrections without being embarrassed by a mistake.

- (5) Students were able to explore their ideas as far as their curiosity would guide them. All this is done while the student knows that the teacher is in the vicinity to offer assistance should additional help be needed.

- (6) It encouraged pupils' creativity, motivation and inventiveness.

- (7) It provided an opportunity for pupils to communicate with other pupils around the world.

- (8) It encourages team efforts since classmates have to share computers at times.

- (9) Teachers are able to present the content of a subject matter on a computer.

This stimulates pupils' thinking that leads them to connect topics without being distracted by technical terms or problems.

Despite the benefits gained from using computer technology as a teaching-learning tool, the number of teachers who integrate computers into their classes remains relatively low (Sfard and Leron 1996).

Many teachers today are still reluctant to integrate computer technology into their classrooms. The following are some cited reasons for teachers not using computers as a teaching-learning tool in the classroom:

- (1) The lack of adequate teacher/computer technology training.
- (2) It takes too much to prepare a lesson in a computer lab since it requires creativity.
- (3) During a computer activity, teachers cannot devote time to all students and weaker students tend to suffer. At times obedience is replaced by noise.
- (4) Time may be wasted learning software since new versions are constantly appearing.
- (5) There is the possibility of technical problems such as electrical failure and problems with network. This would hinder the progress of a particular unit or topic.

Even though educators are being called to seek higher standards and challenging learning activities, many teachers are still not taking full advantage of this crucial instructional tool. Many articles continue to promote computer technology as a vital tool in the teaching-learning process.

Despite increasing numbers of computers that are being used in homes, and technological advances available to schools, educators are not capitalizing on the relationship between technology and education. This is an opportunity that teachers can use to help students develop higher-order thinking skills and function effectively in a world beyond the classroom.

Change is icky, but educators are still being encouraged to learn new skills, methodologies, computer software etc. that will promote values, attitudes that can be used as an instructional learning tool and at the same time add to their professional development (Inamori 1985).

The integration of computer technology requires first that teachers need to be comfortable with the technology, and secondly that teachers be challenged to push the boundaries of education by using the technology intelligently. For example, Microsoft PowerPoint is a tool with great educational potential (Magaña 2002) that is under-used in the classroom. Most teachers that are familiar with this software use it solely as a teacher-presentation tool. In the hands of students, PowerPoint can be used for all sorts of projects. They can learn to create interactive PowerPoint presentations that provide scaffolding, or the template, which allow students to build their own structure around it. If a technology is used in the proper context, it can be one of the most innovative ideas in teaching.

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CHAPTER 3 – METHOD

POPULATION AND SAMPLE

The target population for the sample was chosen from three (3) Northside Secondary Schools in Belize City, namely, Pallotti High, an all-girls school, Nazarene, a co-ed high school, and St. John's College, an all-boys high school.

The researcher used random sampling techniques to select the participants. This method was used by the researcher to ensure the success of the study and the collection of all relevant data.

Thirty (30) participants were chosen from the target population. Ten from each participating school. All participants were current teachers at the various schools. The sample size was chosen based on the number of participants required to support the value of the findings from the study, the researcher's budget and the available resources.

The demographic data of the participants included their age, gender, educational background and teaching experience.

The tables on the following page illustrate the distribution of the sample and their demographic data.

Table 1
Distribution of Sample

Selected schools	Teachers
Pallotti High School	10
Nazarene High School	10
St. John's College	10
Total	30

How?

All participants were randomly selected.

Table 2
Demographic Data of Sample

Demographic Data	Frequency	Percentage
SEX		
Males	10	36%
Females	18	64%
AGE		
under 20 yrs.	0	0%
20 - 25 yrs	5	18%
26 - 29 yrs	7	25%
30 - 35 yrs	8	29%
36 - 39 yrs	6	21%
40+ yrs	2	7%
EDUCATION		
Primary	0	0%
Secondary	0	0%
Tertiary	19	68%
Higher	9	32%
TEACHING EXPERIENCE		
1 -3 yrs	5	18%
4 -6 yrs	9	32%
7 - 10 yrs	7	25%
10+ yrs	7	25%

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Frequency Distribution of Demographic Data

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is in the table.

ETHICAL CONSIDERATIONS

The following ethical considerations were taken by the researcher to ensure confidentiality and anonymity:

1. The sample population, the principals and teachers were informed verbally and in writing regarding the purpose and significance of the study and the role they played.
2. Each principal was informed of the confidentiality and anonymity of the information submitted by the teachers.
3. Participants were informed that their participation was voluntary and they had the right to withdraw from the study at any time. ✓

RESEARCH INSTRUMENTATION

The researcher used a questionnaire as the instrument to collect the relevant data. The questionnaire was designed and developed by the researcher.

The researcher used a research methods textbook and the hypothesis statement as the guidelines for constructing the questionnaire.

Item (1) asked the participants about their demographic data. It included their age, sex, and educational background.

Items two (2) – four (4) focused on participants' teaching experience.

Item five (5) focused on participants' use of computer technology in their respective classrooms, necessary skills required and possessed, and the programs used when integrating computers or the possible reasons why they did not use computer technology in their classrooms.

Items six (6) – eight (8) focused on the issue of staff support, potential benefits of integrating computers for teachers, students and principals. It also looked at what can be done to help other teachers be prepared to adequately integrate computer technology into the classroom.

PROCEDURES

In order for the researcher to successfully administer and collect the relevant data for the study, the researcher first visited the schools of the target population and sought the principals' permission to use their teachers as samples for the study.

After being granted permission by the principals, the researcher then issued the questionnaires to the principals. They were then to issue the questionnaires to the teachers. (They all accepted and agreed to this). All instructions on how to complete the questionnaires were read and explained to the principals by the researcher. Upon issuing the questionnaires by the principals to the selected sample, instructions were to be read and explained to them on how to complete the questionnaires. ✓

It was agreed that the researcher pick up the completed questionnaires one week later. However, after several attempts and three weeks later the researcher collected the completed questionnaires. (For some other schools it was longer). ✓

After the completed questionnaires were received, the researcher proceeded to analyze the data. ✓

DATA ANALYSIS

All data collected were visually reviewed and inspected by the researcher. Important themes and contents identified were coded or assigned to a category.

Item one (1) – demographic data was analyzed by tallying the number of males, females, and their corresponding ages, , and educational backgrounds.

Item two (2) – three (3) were analyzed by category. Information derived from these items was used to support other categories.

Items five (5) – eight (8) were analyzed and sorted based on common themes or contents. Each theme or similar content were assigned a category.

After assigning themes and common contents to categories, the researcher then reviewed the information within the categories. The researcher then proceeded to revise the categories by using additional supporting data from the questionnaire or by deleting/removing what was considered irrelevant. This process continued until the researcher reached a decision.

A work processor was used to organize the data. Other software such as Microsoft Excel was used to prepare the graphs.

CHAPTER 4

DATA PRESENTATION

All data were collected and analyzed. Tables and graphs are used to illustrate the findings.

Research question 1: Do you integrate (use) computer technology when teaching your subject area?

Table 3

Item Response	Response Rate	Percentage
Yes	10/28	35.7%
No	13/28	46.4%
Sometimes	5/28	17.8%

Analysis: Based on the response in Table 4, it can be concluded that teachers do not generally use computers as a teaching-learning tool.

1. (a) If yes, what types of programs/resources used?

Table 4

Programs used	Response	Percentage
MS Word	8/28	28.5%
MS PowerPoint	5/28	17.8%
MS Excel	5/28	17.8%
Internet	10/28	35.7%
Other	5/28	17.8%

Analysis: Based on the response in Table 4, it can be concluded that most teachers have basic computer knowledge.

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1. (b) What kind of computer training skills do you possess?

Table 5
Training skills of sample

Computer Training Skills	Response	Percentage
Associate Degree in Information technology	2/28	7.1%
Basic computer/software knowledge	20/28	71.4%
Bachelor of Science degree in computer programming	1/28	3.6%
Other	5/28	17.9%

Analysis: Based on the response in Table 5, it can be concluded that most teachers have basic computer knowledge. 2

1. (c) Through what means did you receive your computer technology training?

Table 6
Means through which teachers received their training

Means	Response	Percentage
Personal	20/28	71.4%
School-sponsored	7/28	25.0%
Other	1/28	3.6%

Analysis: Based on the response in Table 6, it can be concluded that teachers receive their training through personal means. 7

1. (d) If no, why not?

Table 7

Response Items	Response Rate	Percentage
School does not have computer technology yet	0/28	0%
Not enough computers for teachers	7/28	25%
Enough computers, but not enough time	5/28	17.9%
Not adequately trained to use computer technology	10/28	35.8%
Don't know why	4/28	14.4%
Other	2/28	7.2%

Analysis: Based on the response to Table 7, it can be concluded that teachers are not utilizing their computer technology. 2

Research question 2:

2. (a) Do you think that principals should support/encourage the use of computer technology in the classrooms?

Table 8

Response choice	Rate	Percentage
Yes	25/28	89.3%
No	0/28	0%
No response	3/28	10.7%

Analysis: Based on the response on Table 8, it can be concluded that teachers responded positively to the question. 9

2. (b) Why

Table 9
Reasons for Principal's support

Themes of choice	Response rate	Percentage
To keep students up-to-date	10/28	35.8%
To help students develop research skills	8/28	28.8%
Computer is the key to the future	6/28	21.0%
It helps students with their mathematical skills	4/28	14.4%

Analysis: Based on the responses in Table 9, it can be concluded that teachers responded positively to the question. 7

2. (c) What can principals do?

Table 10
Activities that principals can do

Content of response	Response	Percentage
Sponsor more training workshops and seminars	8/28	28.0%
Give time to teachers to attend classes in computer technology	19/28	68.4%
Start using the programs themselves	1/28	3.6%

Analysis: Based on the response on Table 10 it can be concluded that most teachers want to attend classes etc. to develop their technology training skills. 9

Research question 4: Do you believe that computer technology should be integrated as a teaching-learning tool into the curriculum?

Table 14

Item Response	Response	Percentage
Yes	22/28	79.0%
No	0/28	0%
No Response	6/28	21.0%

Analysis: Based on the response on table 14, it can be concluded that teachers support the idea of computer technology being integrated into the curriculum.

4. (b) If yes, how should it be done and who should be involved.

How should it be done?

Table 15

Theme of responses	Response	Percentage
Introduce in stages over time	5/28	17.9%
No response	15/28	54.1%
Not sure	8/28	28.0%

Table 16
Who should be involved?

Item choices	Response	Percentage
Teachers	8/28	28.0%
Students	1/28	3.6%
Parents	1/28	3.6%
Principals	6/28	21.0%
Community/business leaders	2/28	7.2%
Ministry of Education	10/28	36.6%

Analysis: Based on the response on Tables 15 and 16, it can be concluded that teachers responded positively to the item.

7

FINDINGS AND ANALYSIS

Research Question 3: What are the benefits of using computers as a teaching-learning tool?

(a) How will students benefit

(b) How will teachers/principals benefit?

Table 11
Students' Benefit

Response Theme	Rate	Percentage
Allow students to think critically and link concepts across subjects	9/28	32.2%
Motivates students to learn on their own	5/28	19.5%
Helps students to be better prepared for the world of work	4/28	14.4%
Makes learning more enjoyable	5/28	19.5%
Encourages team building	4/28	14.4%

Analysis: Based on the responses on Table 11, it can be concluded that teachers responded positively to part (a) of Question 3

Table 12
Benefits of teachers/principals through the use of computers

Response Theme	Rate	Percentage
They will keep up-to-date with the latest trends in education and computers	9/28	32.1%
Can be used for professional development	8/28	28.5%
Can be used for recording grades	8/28	28.0%
Help teachers to be more creative in preparing lessons, visual aids.	4/28	14.3%

Analysis: Based on the responses in Table 12, it can be concluded that most teachers have responded positively to part (b) of question 3.

Table 13

Benefits for principals/schools when computer is used as a teaching-learning tool.

Response Theme	Rate	Percentage
Improved CXC results	7/28	25.0%
Teacher can be held more accountable	2/28	7.1%
No response	19/28	67.9%

Analysis: Based on the response on Table 13, it can be concluded that teachers have responded negatively to part (c) of question 3.

7

SUMMARY OF FINDINGS

Through the administration of this study, the researcher has found out the following:

- (1) Despite the fact that most schools have computer technology, teachers are not utilizing this resource to its fullest capacity.
- (2) Even though most teachers have basic computer knowledge, they are still afraid to integrate computer technology into the classroom.
- (3) Principals at the secondary level rarely encourage their teachers to integrate computer technology into their classrooms.
- (4) Even though teachers support the idea of integrating computer technology into the classroom, most are still not doing anything to equip themselves to use it as an instructional and learning tool.
- (5) Integrating computer technology as a teaching-learning tool can be beneficial to students and teachers.

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to summarize*

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CONCLUSION

According to the National Policy of Education in Belize, education is seen as the lifelong acquisition of knowledge, skills and attitudes required for full personal development and active participation in society. If teachers use this policy as their teaching foundation, then they will at all times use the most effective teaching and learning strategies that will yield any expected learning outcomes.

The survival of one today is highly dependent on one's ability to cope with the rapid changes in technology and compete globally. Therefore, computer technology literacy is vital for the Belizean student. Most secondary school teachers believe that computers should be used as a teaching and learning tool in the classroom. Yet the majority are sitting idly by doing nothing about it.

The results of this study show that the effective integration of computer technology in all subject areas will require that teachers and principals work closely together. Firstly, teachers need to acquire new skills on a regular basis in order to keep up with the latest development in technology and education. This is necessary since teachers are responsible for disseminating information to students. Once this is done the potential benefits for all are great.

Research has shown that students who are exposed to computer technology in the classrooms are better able to function positively within society. For example, through computer integration team effort, cooperation and critical thinking are emphasized.

Likewise, teachers who use computer technology are up-to-date with the latest

trends and development in technology and they become more proactive and creative when writing their lesson plans. In the end, schools and principal will benefit by seeing the performance of their students increase.

However, all of this will not be possible without the necessary assistance required by teachers to develop the skills necessary to effectively incorporate computer technology into their classrooms.

Based on the results of the study, it is evidenced through the literature review and the data collected has shown that the researcher's hypothesis: "Students, teachers, and principals of secondary schools in Belize can benefit greatly by using computers as a teaching-learning tool" was supported.

The two research questions were answered through the study.

Research Question 1: What are the benefits for using computer technology as a teaching-learning tool?

How will the students benefit?

How will teachers/principals benefit?

Based on the response to Question 5 of the questionnaire (see Table 11), it can be concluded that teachers, students and principals will benefit if computer technology is used as a teaching-learning tool.

*Why are you concluding
state 90% to support this?*

Research Question 1: What are the necessary skills teachers need to effectively use computer-technology as a teaching-learning tool?

Based on the response provided in Table 5, it can be stated that teachers require the minimum of basic computer skills. However additional training in this area is highly encouraged to enhance teachers' ability to effectively use computer technology as a teaching-learning tool in the classroom

LIMITATIONS

While conducting this study, the researcher had some limitations. The following are the limitations encountered by the researcher:

1. Time: Due to the fact that the researcher had other commitments, it was difficult at times to focus on one project. A lot of time was spent preparing for tests, dealing with other term papers, etc.
2. Meeting of deadline to collect the completed questionnaires: This was the most challenging. When it was time to pick up the completed questionnaires, I had to make repeated attempts. To be more exact, I had to make about seven visits and numerous phone calls.
3. Resources: Due to the limited budget of the researcher, she was confined to study only those schools since they were in proximity to the University campus.

RECOMMENDATIONS

As an educator and researcher, I, the researcher, believe in the philosophy that students should be exposed to a learning environment that will address both the needs of the students and the teachers. After conducting this research, the conclusion can be made that our secondary school teachers are not using the new educational tool – computer technology – to prepare our students for the new world.

Therefore, to assist our students and teachers, I recommend the following: *ehy*

- (1) That schools get or use programs that are in line with their goals and philosophy.
- (2) That schools put in place strict policies and procedures regarding the use of certain computer programs. *why*
- (3) That teachers get specialized training in the use of computers as teaching-learning tools.
- (4) That administrators/Government ensure the availability of computer specialists to help teachers and to upgrade and maintain the tools.
- (5) That Administrators/Government allocate a budget for teacher training in computer technology and to meet the cost of utilities and maintenance.
- (6) That a more in-depth study be conducted on the present teaching attitudes in regards to teaching through computer technology, e.g. online in Belize
- (7) That a follow-up study on this study be done.

8. Further research.

BIBLIOGRAPHY

- Flake, J. C. (1996). The World Wide Web and Education. *Computers in Schools*, 12 (112, 89-100.
- Goddard, Mark (2002). Technology in Education. *Journal of Research* vol. 35, 19-26.
- Hazzan, O., Goldenberg, E. P. (1997). An expression of the idea of successive refinement in dynamic geometry environment: *Psychology of Mathematics education*, 3, 49-56.
- Hul, Julie (2002). Teaching with technology: Presentations: Minneapolis; 28-36.
- Jones, Cathy (2001). Principal Leadership: *National Association of Secondary School Principals*. Reston, VA., 35-39.
- Petroski, H. (1992). The evolution of useful things. New York: Random House.
- Rogers, E. M. (1995). Diffusion of innovations (4th ed.). New York: Free Press.
- Schloss, Patrick J. & Smith, Maureen: (1996). Conducting Research. New York Press.
- Schneiderman, B. (1992). Designing the user interface; Strategies for effective human-computer interaction (2nd ed.).
- Stephenson, N. (1995). The diamond age. New York. Bantam Doubleday Dell.

*You need to
label these
as appendix
You also
need to
refer to
these
within
your
study*

Table 3

Do you use computer technology when teaching your subject area?

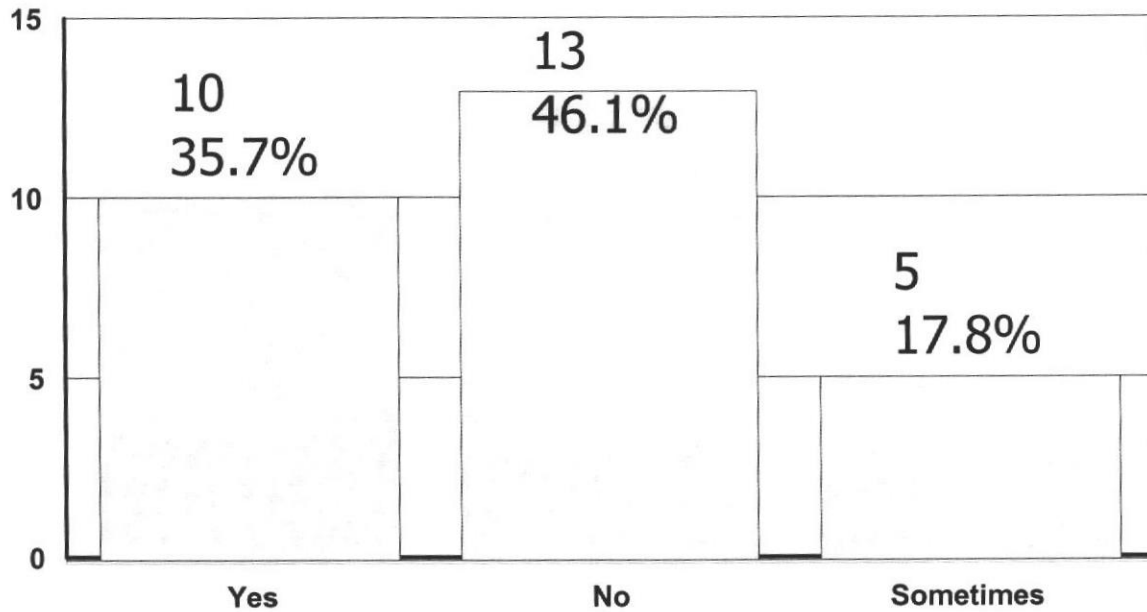


Table 4

What types of programs do you use?

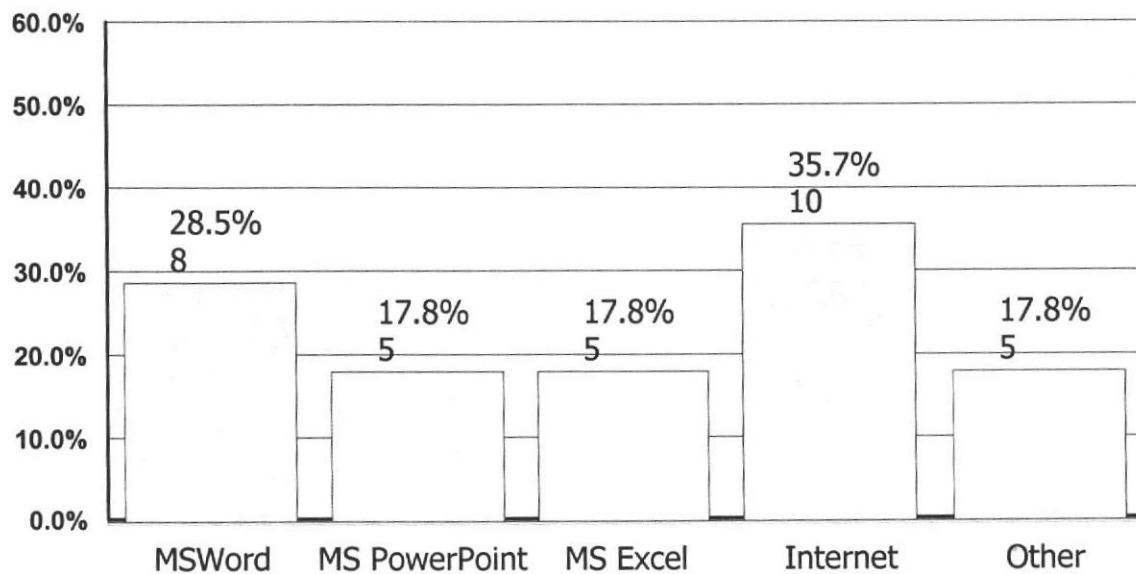


Table 5

What kind of computer training skills do you possess?

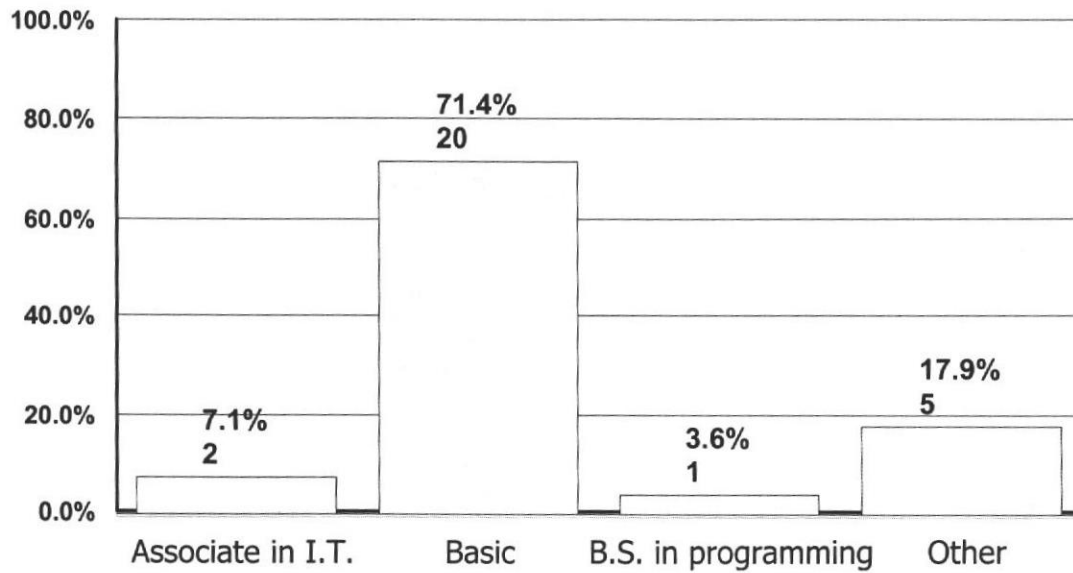


Table 6

How did teachers receive training?

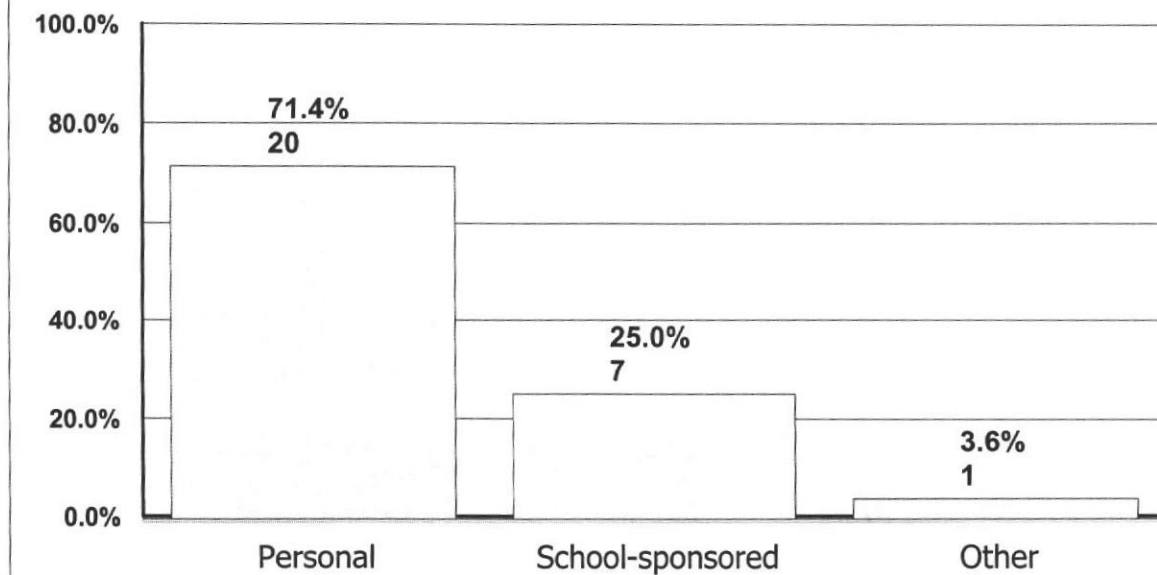


Table 7

Why don't you use computers?

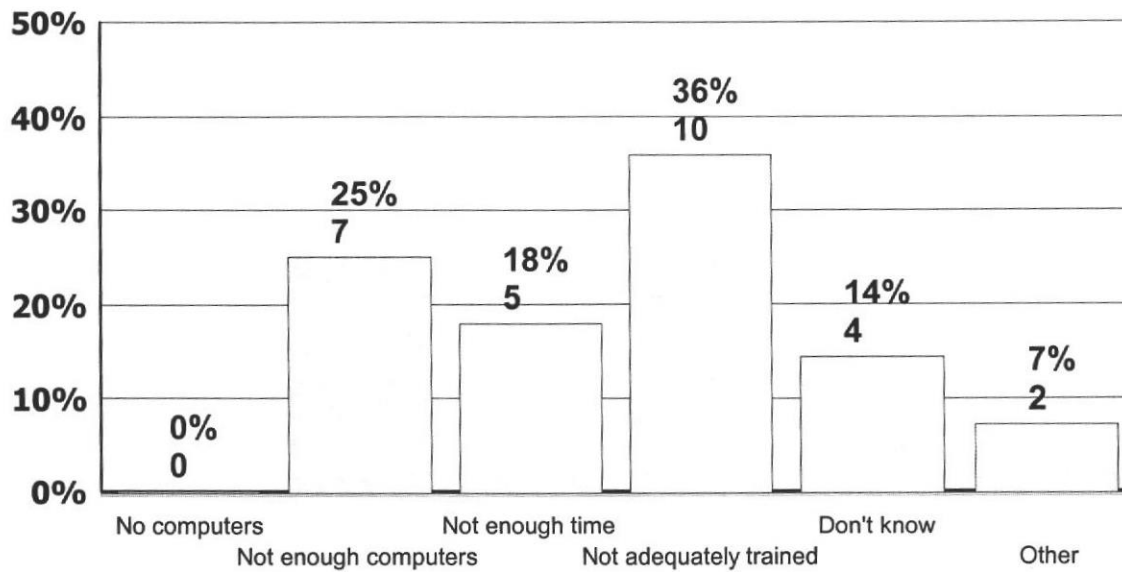


Table 8

Should principals support computer use in the classroom?

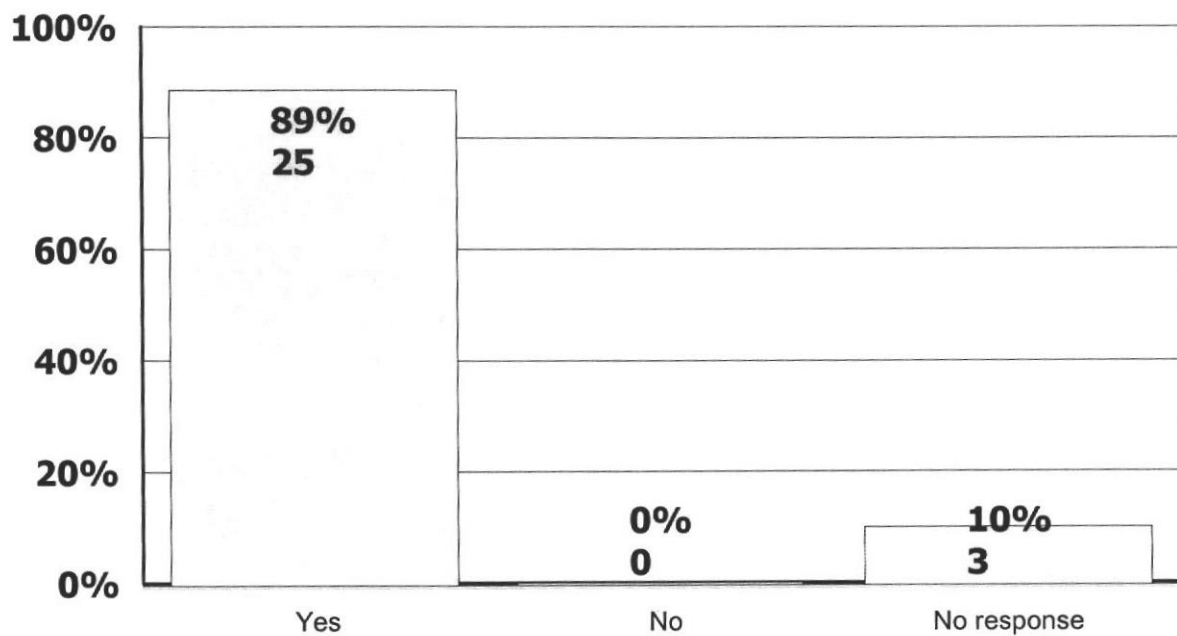


Table 9
Reasons for principals' support.

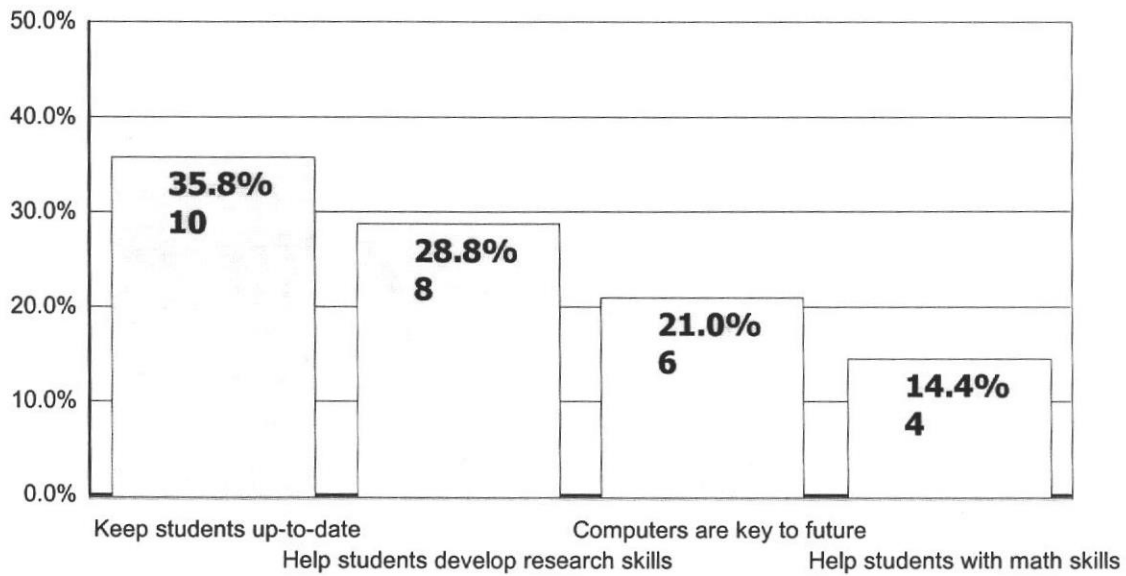


Table 10
What can principals do?

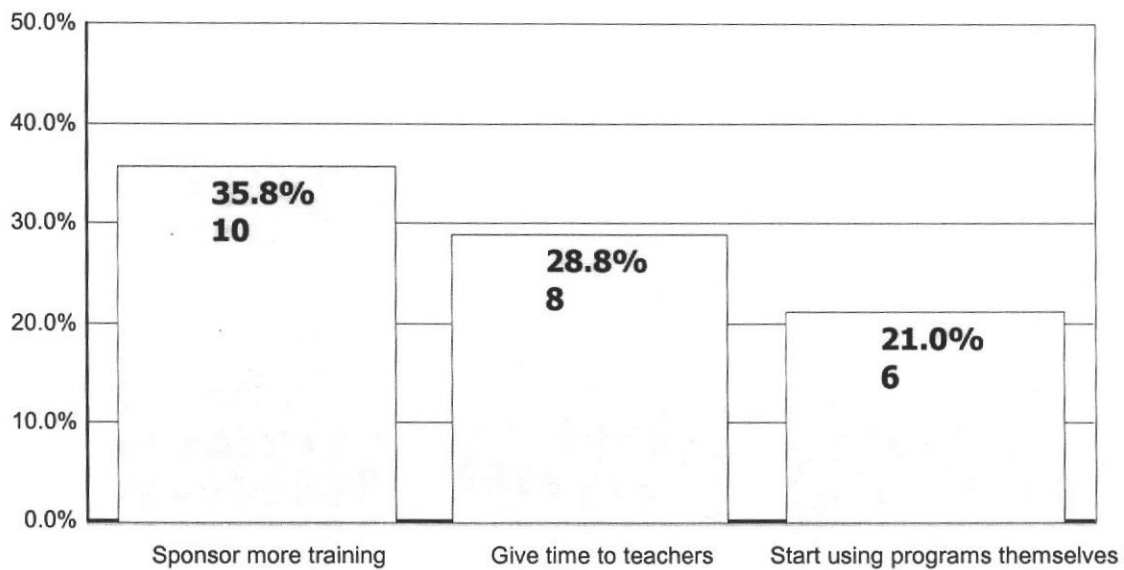


Table 11
How will students benefit?

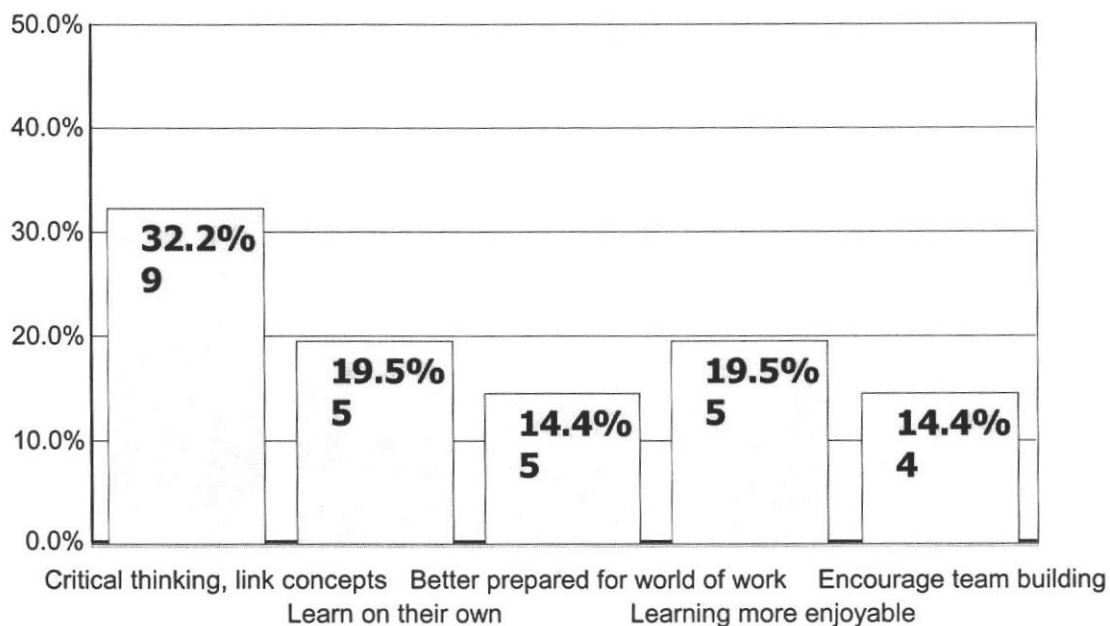


Table 12
How will teachers benefit?

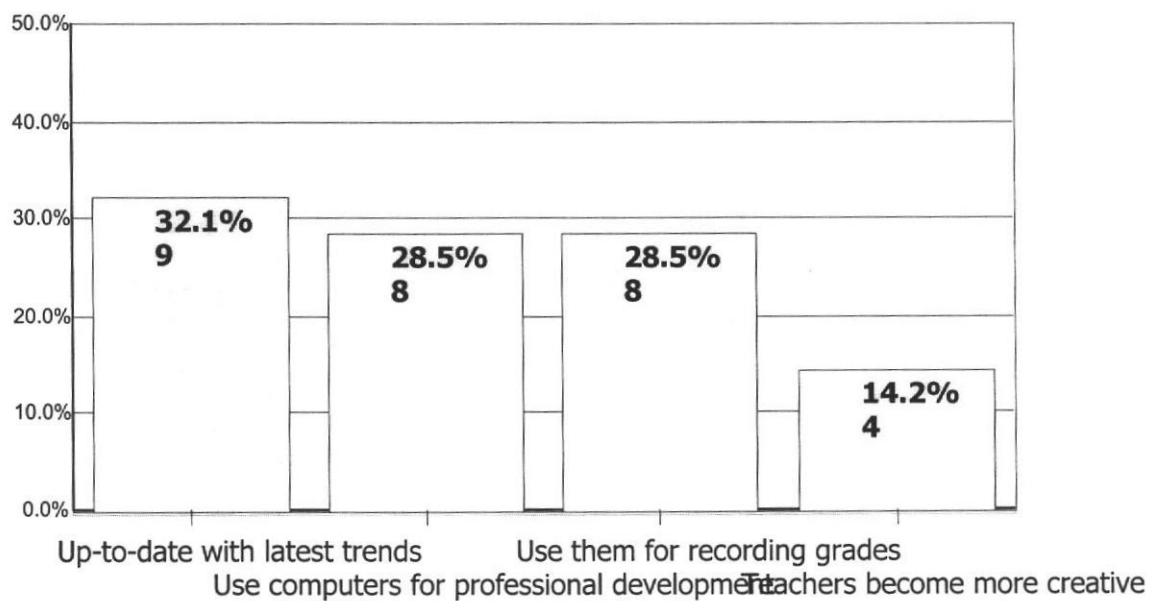


Table 13
How will principals and schools benefit?

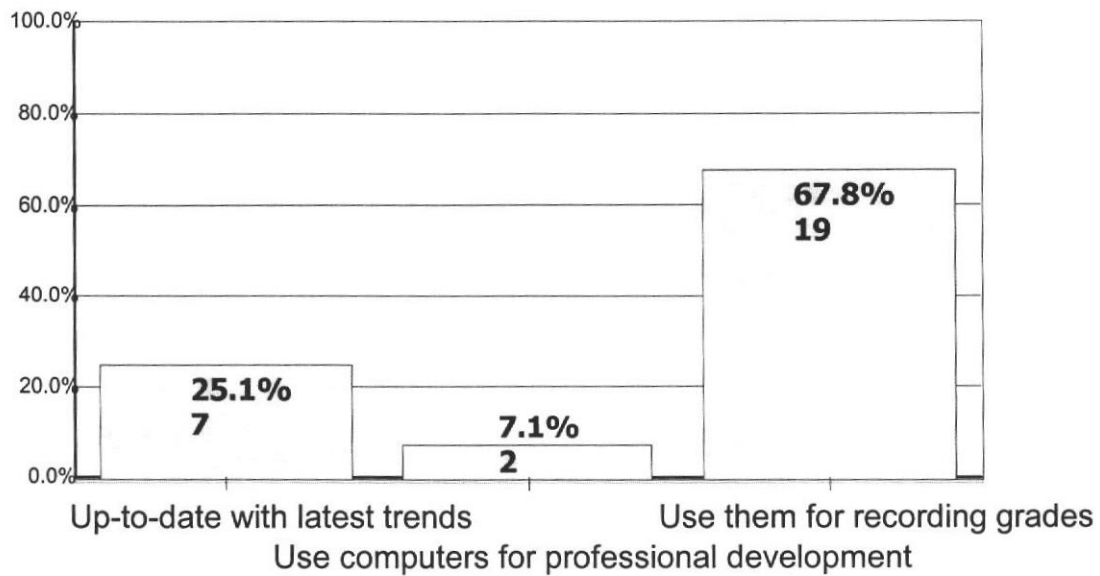


Table 14
Should computer technology be integrated in curriculum?

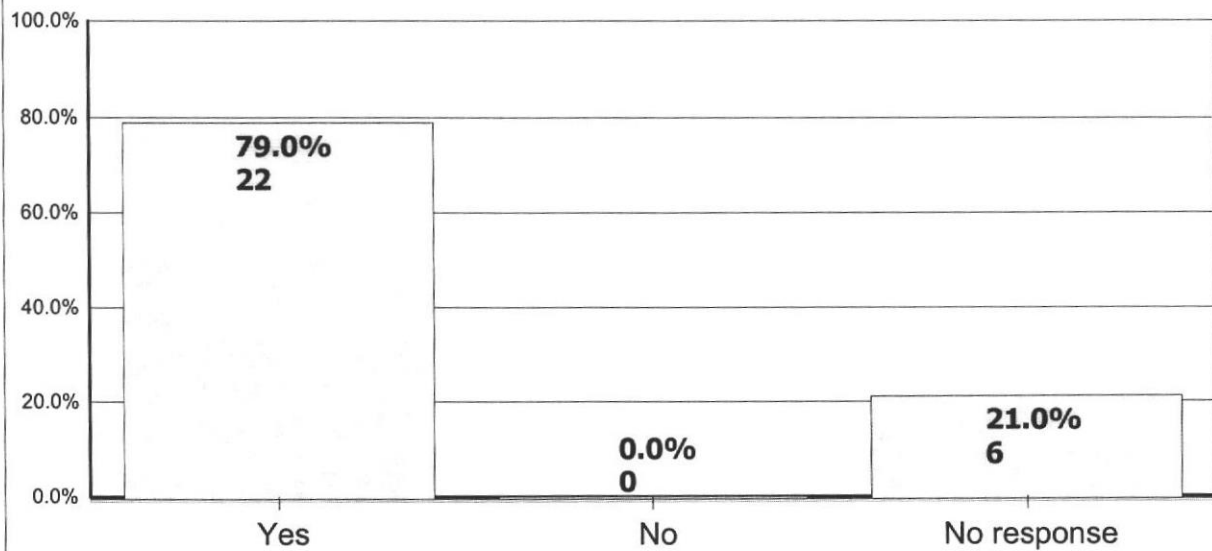
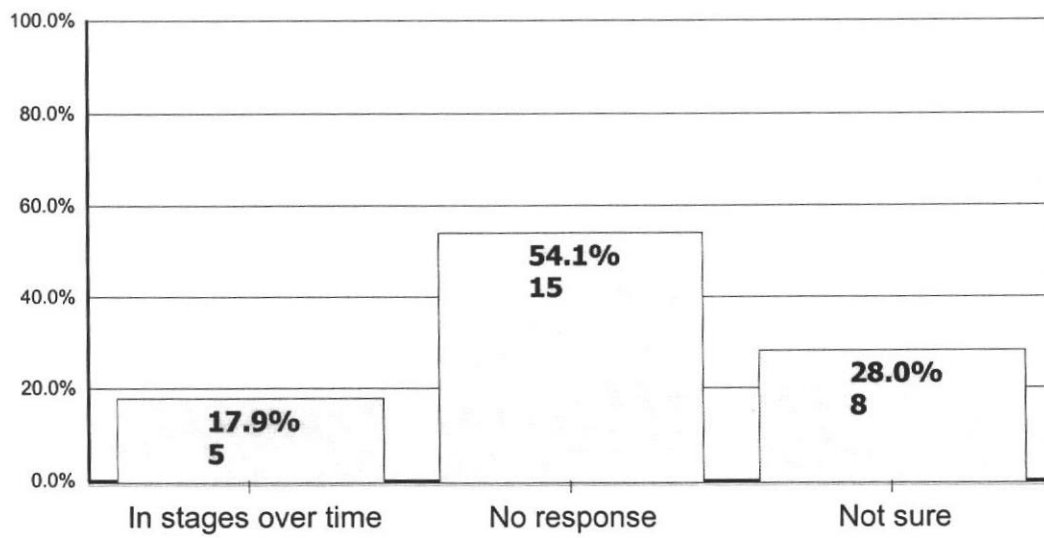


Table 15
How should the integration be done?



April 2003

Dear Colleague,

As part of my graduation requirements from the University of Belize, I am conducting a study to gather relevant data on the benefits of using computer technology as a teaching-learning tool at the secondary level.

In order to make this study a success, I am hereby requesting your permission to participate in this study.

All information that you will provide will be kept strictly confidential. Your participation in this study is voluntary. You are free to withdraw and end your participation at any time.

Sincerely

Delthia Perez

Teacher Questionnaire

Purpose: The purpose of this questionnaire is to gather data on the use of computer technology as a teaching – learning tool in secondary schools and how the integration of computer technology into the curriculum might be of use to teachers, students and the development of Belize.

Instructions:

Read each item carefully. Think about your subject area in relation to the use of computer technology. Then, based on your current/ future needs, tick the choice that you think most closely corresponds to your position in regards to the use of computer technology as a teaching-learning tool in your subject area.

1. Demographic Data

Age: Under 20 yrs ☐ 20 – 25 yrs ☐ 26 – 29 yrs ☐
 30 – 35 yrs ☐ 36 – 39 yrs ☐ 40 yrs and over ☐

Sex: Male ☐ Female ☐

Education: Primary ☐ Secondary ☐
 Tertiary ☐ Higher ☐

2. Teaching Experience:

1 – 3 yrs ☐ 4 – 6 yrs ☐
 7 – 10 yrs ☐ over 10 yrs ☐

3. Current Form(s) Teaching:

First ☐ Second ☐ Third ☐
 Fourth ☐ Other ☐

4. Subject Area(s) Currently Teaching:

Mathematics ☐	Physics ☐	English Language ☐
Geography ☐	Spanish ☐	General Science ☐
Biology ☐	Chemistry ☐	Agriculture ☐
Social Studies ☐		English Literature ☐
Information Technology ☐		Other ☐

5. Do you integrate (use) computer technology when teaching you subject area(s)?

Yes ☐ No ☐ Sometimes ☐

(a) If yes, what type(s) of programs or resources do you use?

MS Word ☐ Power Point ☐ Excel ☐
 Internet ☐ Other ☐

If no skip to item 5 (d)

(b) What kind of computer training skills do you possess?

(c) Through what means did you receive your computer technology training?
Personal _____ School Sponsored _____ Other _____

(d) If no, why not?

- _____ School does not have computer technology yet
- _____ Not enough computers for teachers to use
- _____ Enough computers but not enough time
- _____ Not adequately trained to use computer technology in the classroom
- _____ Don't know why?
- _____ Other _____

6. Do you think that principals should support/encourage the use of computer technology in the classroom?

Yes _____ No _____

- (a) If yes, Why? _____
- (b) What can principals do? _____
- (c) If no, why not _____

7. What do you believe are the benefits for integrating computer technology into the classroom for:

- (a) Students: _____
- (b) Teachers: _____
- (c) Principal/school: _____

8. Do you believe that computer technology should be integrated as a teaching-learning tool into the school curriculum?

If yes state your reasons (In your answer state how it should be done and who should be involved.) _____

If no, why not _____

Comments: If you have comments or questions about this questionnaire, please feel free to write them in the space provided.

Thank you for taking the time from your busy schedule to help me with this project.