ice
is Room

Open University Malaysia
MASTER STUDIES DIVISION
KINGDOM OF BAHRAIN

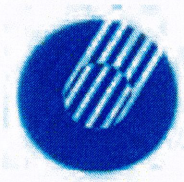
THE IMPACT OF THE INTERNET ON PRIMARY SCHOOLS IN BAHRAIN

BY:
LAYLA HABIB AHMED NASSER
ID#: 51100254

SUPERVISOR
Dr. ALI AL SOFI

PROJECT PAPER SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION

OPEN UNIVERSITY MALAYSIA
2012



KINGDOM OF BAHRAIN
OPEN UNIVERSITY OF MALAYSIA
MASTER STUDIES DIVISION

THE IMPACT OF THE INTERNET ON PRIMARY SCHOOLS IN BAHRAIN

BY

Layla Habib Ahmed Nasser

Project Paper Submitted in Partial Fulfillment
of the Requirement for the Degree of Master of Business Administration



Supervised By

Dr. Ali Al Sofi

ABSTRACT

This research study looks into the impact of the internet on primary schools within Bahrain. The research was a hybrid mix of qualitative and quantitative features as it included questionnaires sent via email and a couple of further interviews with the respondents.

The study is significant as the internet is such a huge part of the lives of people today; its influence goes far beyond the classroom. Therefore addressing the extent of its impact in the learning of our children is of great importance.

Research contained here is an analysis of the perceptions of the respondents; it involved no observation within the classroom. All findings were backed up and compared to the literature.

Key findings included the fact that science teachers were using the internet in lessons twice as much as non-science colleagues, however this could be because of significantly better ICT provision within the science department.

It was also found that male staff used the internet almost twice as much as female staff for personal use and the most regular users were the 20-40 age group.

Finally it was found that the greatest obstacle staff perceived to internet use was connectivity and accessibility.

Although perhaps originally there were concerns the computer was being used for drill purposes only, this is not reflected in the use of the internet within lessons.

ACKNOWLEDGEMENT

This job was the result of lots of hard work that was not possible without the help and guidance of so many individuals.

After God, thanks to my Parents who have provided me with lots of love, care, and support. I would like to thank everyone who has participated in helping me to conduct this research.

Thanks to my supervisors for their valuable guidance, especially Dr. Ali Al Sofi for his useful guidance and advice throughout this research. Without their instructions, the final result would not have been what has resulted.

Finally, thanks to all the people work for AL-Busiteen Primary Schools who have made some time to complete the questionnaires that were administrated to them.

Thus, thank you to all of you for your support.

St. 51100254

DECLARATION

Name:

ID Number: 51100254

I herby, declare that this project paper is the result of my own work, except for quotations and summaries which have been duly acknowledged.

Signature: _____ Date: _____

Supervisor Name: Dr. Ali Al Sofi

Signature: _____ Date: _____

APPLICATION TO CONDUCT RESEARCH PAPER

PART A: STUDENT PARTICULAR

Student's Name: Layla Habib Ahmed Nasser

Student's Number: 51100254

PART B: PARTICULAR ABOUT THE PROJECT

1. ***Title of the project:*** The Impact of The Internet on Primary Schools in Bahrain.
2. ***Research Objective***: The main objective of this research is to investigate:
   - What is the extent of Internet usage of Primary Schools administrators?
   - What level and kind of Internet technology incorporation into the pedagogical strategies of teachers has occurred within Primary Schools?
   - Which personal factors influence Internet usage of teachers at Primary Schools (i.e, gender, age, ethnicity, professional involvement, department leadership, level of education, year's of teaching, subject area instruction)?

3. ***Proposed Research Method:*** Descriptive survey research / Questionnaire.

PART C: FACULTY'S INPUTS

1. Topic chosen: Accepted / Not Accepted
2. Suggested supervisor for the student: Dr. Ali Al Sofi

RESEARCH PROPOSAL SUBMISSION FORM

Project Paper Title: The Impact of the Internet on Primary Schools in Bahrain

Director: Open University of Malaysia (OUM) – Bahrain Branch

Dear Sir,

Attached are the following documents for evaluation and approval:

- **Chapter1:** Introduction
- **Chapter2:** Literature Review
- **Chapter3:** Research Methodology
- **Chapter4:** Data Analysis
- **Chapter 5:** Discussion
- **Chapter 6:** Summary & Conclusion, Recommendation
- **References**
- **Appendix**

I have thoroughly checked my work and I am confident that this is free from grammatical errors, weaknesses in sentence construction, spelling mistakes, referencing mistakes and others, I have checked guidelines for writing project paper and I am satisfied that the project paper proposal satisfied its requirements.

Thank you,

Student Signature: _____ Date: _____

I have read the student research proposal and I am satisfied that it is in line with the OUM MBA program guidelines for writing project proposal. It is also free from major grammatical errors, sentence construction weaknesses, citation and others.

Supervisor's Signature: _____ Date: _____

TABLE OF CONTACT

CHAPTER ONE: INTRODUCTION 1

1.1 Backgound of the Study 1

1.2 Research Problem(s) 2

1.3 Significance of the Research 3

1.4 Definition of terms 4

1.6 Limitations of the study 5

CHAPTER TWO: LITERATURE REVIEW 6

2.1 Internet and Pupils 7

2.2 Internet and Teachers 8

2.3 Internet and Schools Administration 11

CHAPTER III RESEARCH MYTHOLOGY 13

3.1 Background of Applying the Internet in Bahrain Primary School 13

3.2 Description of the Sample Studied: 13

3.3 Procedures for Data Collection 14

3.4 Data Analysis 15

3.4 Constructivism Theory 15

CHAPTER FOUR: FINDINGS AND RESULTS 17

4.1 Sample Studied 17

4.2 Data Analysis 18

4.3 Responses to Structured Interviews of Busiteen Primary School Teachers 41

4.4 Surnmcuy of Key Findings of Research 44

4.5 Significant Differences: Personal Factors and Internet Usage 46

4.6 Personal Profile of Infrequent Internet User 50

CHAPTER FIVE: DISCUSSION OF RESULTS 57

5.1 Discussion of Administrator Interviews 57

5.2 Summary of Key Findings of Research Questions 57

CHAPTER 6 CONCLUSION AND RECOMMENDATION 64

6.1 Conclusions 64

6.2 Technological Policy Recommendations 66

6.3 Recommendations for Future Research 68

REFERENCES 70

APPENDIX A: SURVEY QUESTIONS SCHOOL TEACHERS 72

APPENDIX B: STRUCTURED INTERVIEW 83

LIST OF TABLES

Table No.	Description	Page
Table 3.1	Demographic Profiles of Respondents to Survey	17
Table 3.2	Depicts the research question asked and its corresponding method of analysis:	18
Table 3.3	Theoretical Base for Data Analysis	19
Table 4.1	Demographic Profiles of Busiteen Primary School Teachers and Administrators who responded to survey	21
Table 4.2	Mode of Response to Survey Questions	22
Table 4.3	Administrator Survey, Part 5 Question 14: What do you see as the major obstacle (s) to your Internet usage?	23
Table 4.4	Administrator Survey, Part 5Question 15: What would motivate you to use the Internet more often?	23
Table 4.5	Busiteen Primary School Administrators Views on the Internet	24
Table 4.6	Survey, Part 4: "Internet Classroom Activities"	
Table 4.7	Teacher Survey Part 5: Internet and Pedagogy: Survey Question 2: The Internet has positively changed the way I view education.	27
Table 4.8	Teacher Survey Part 5: Internet and Pedagogy:Question 7: I am committed to developing new and meaningful Internet classroom activities for my students	29
Table 4.9	Teacher Survey Part 5: Internet and Pedagogy:Question 8: Expertise on the Internet should be a competency required by the state education department	31
Table 4.10	Teacher Survey Part 5: Internet and Pedagogy:Question 10: I have seen time-on-task improvements from students using the Internet	33
Table 4.11	Teacher Survey Part 5: Internet and Pedagogy:Question 11: Time spent with the Internet takes away from direct needed instruction	35
Table 4.12	Teacher Survey Part 5: Internet and Pedagogy:Question 17: The Internet never move much beyond drill-and-skill.	36
Table 4.13	Teacher Survey Part 5: Internet and Pedagogy:Question 18: I have seen students' creativity increase with the addition of the Internet.	37
Table 4.14	Constructivism Term and Related Survey Statement: Significant Differences between Frequent versus Occasional Users	50
Table 4.15	Constructivism Term and Related Survey Statement: Patterns of Agreement between frequent versus occasional users	50
Table 5.1	Constructivism Term and Related Survey Statement: Significant Differences between Frequent versus Occasional Users	59
Table 5.2	Constructivism Term and Related Survey Statement: Patterns of Agreement between frequent versus occasional users	60

LIST OF FIGURE

Table No.	Description	Page
Figure 4.1	Teacher Survey Part 5: Internet and Pedagogy: Survey Question 2: The Internet has positively changed the way I view education.	23
Figure 4.2	Teacher Survey Part 5: Internet and Pedagogy: Question 7: I am committed to developing new and meaningful Internet classroom activities for my students.	25
Figure 4.3	Teacher Survey Part 5: Internet and Pedagogy: Question 8: Expertise on the Internet should be a competency required by the state education department.	27
Figure 4.4	Teacher Survey Part 5: Internet and Pedagogy: Question 10: I have seen time-on-task improvements from students using the Internet.	29
Figure 4.5	Teacher Survey Part 5: Internet and Pedagogy: Question 11: Time spent with the Internet takes away from direct needed instruction.	30
Figure 4.6	Teacher Survey Part 5: Internet and Pedagogy: Question 17: The Internet wil never move much beyond drill-and-skill.	32
Figure 4.7	Teacher Survey Part 5: Internet and Pedagogy: Question 18: I have seen students' creativity increase with the addition of the Internet.	33
Figure 4.8	Teacher Survey Part 5: Internet and Pedagogy: Question 1: The Internet has positively changed my views on the role of educational technology in the classroom.	34
Figure 4.9	Teacher Survey Part 5: Internet and Pedagogy: Question 4: Students should be encouraged to explore other Internet writers viewpoints or perspectives.	35
Figure 4.10	Teacher Survey Part 5: Internet and Pedagogy Question 5: Students should be encouraged to develop their own perceptions or understanding of new information derived from the Internet.	36
Figure 4.11	Teacher Survey Part 5: Internet and Pedagogy: Question 6: Students should be encouraged to inquire about individual Internet writers viewpoints rather than immediately rejecting or discarding it.	37
Figure 4.12	Teacher Survey Part 5: Internet and Pedagogy: Question 12: The Internet in education is just another fad.	38
Figure 4.13	Teacher Survey Part 5: Internet and Pedagogy: Question 13: Students proficiency with the Internet decreases the authority of the teacher.	39
Figure 4.14	Teacher Survey Part 5: Internet and Pedagogy: Question 14: Funds currently spent on the library should be used for the Internet.	40
Figure 4.15	Teacher Survey Part 5: Internet and Pedagogy: Question 19: Teachers should have more skills-based Internet-related training.	41
Figure 4.16	Internet Usage: Busiteen Primary School Science Teachers versus Non-Science Teachers	47
Figure 4.17	ListServ, Discussion Group Usage: Busiteen Primary School Science versus Non-Science teachers	48
Figure 4.18	Student Internet Activities: Busiteen Primary School Science versus Non-Science teachers	49
Figure 4.19	Internet Personal Use: Busiteen Primary School Male versus Female Teachers	50
Figure 4.20	Gender and Internet usage amongst frequent versus infrequent users of the Internet	51

CHAPTER I: INTRODUCTION

1.1 Background to the study

The world is living in an electronic age, where increasingly aspects of life are becoming digital; the influence of technology entering every home across the globe. Due to this change, a consequence of development is the integration of technology within education. Thus E-learning has become a worldwide phenomenon; many, such as ex-Prime Minister Gordon Brown (Gould, 2008, citing Brown), believe that it is the way forward in education.There has been in every sense an educational revolution, for someone qualifying as a primary teacher in 1990 the world of teaching will have changed beyond all recognition. They probably had no IT training and would enter a classroom that would have had no computer in at all, never mind the internet. They would have written on a blackboard using chalk and information was gleaned only from books, with the text book being a central requirement. How much has changed.

Along with the ICT revolution that enabled all children to gain access to a computer in their classroom came a massive investment in ICT in schools in recent years, with the introduction of the internet being one principle element. Supposedly this introduction enables children to gain skills that they will use in later life in the work place & also allows learning to open up with a vast array of online resources; it connects learning into the world the children are familiar with outside of school

The Internet is increasingly in our classrooms every day and in all respects is now an integral part of our lives both in and out of school, we use it to find out everything from the nearest Indian take away to the fastest routes for journal articles for a dissertation.The internet is on our phones and our televisions, it is an essential part of modern life. We have a duty to aid children to be web literate and actively involved in judging how, why and when they choose to use this tool. For staff and pupils alike it is important to question practice and look toward constantly reinvigorating classroom usage. Riordan (1993) said that one of the principal functions of ICT was to 'ensure that students develop the understanding and abilities they need in order to respond to and shape the world in which they live. (Riordan, 1993, p.2) Children are the leaders of tomorrow and for Bahrain to remain at the forefront of new technologies, it is therefore essential that children are skilled in the use of the internet as a learning tool.

Education in Bahrain:

At the beginning of the 20th century, Quranic schools (Kuttab) were the only form of education in Bahrain. They were traditional schools aimed at teaching children and youth the reading of the Qur'an. After World War I, Bahrain became open to western influences, and a demand for modern educational institutions appeared. 1919 marked the beginning of a modern public school system when Al-Hidaya Al-Khalifia School for boys was opened in Muharraq. In 1926, the Education Committee opened the second public school for boys in Manama, and in 1928 the first public school for girls was opened in Muharraq. In 2004 King Hamad ibn Isa Al Khalifa introduced a project that uses Information Communication Technology (ICT) to support K–12 education. This project is named '*King Hamad Schools of Future.*' The objective of this project is to connect and link all schools within the kingdom with the internet.

1.2 Research Problem

Key questions:

1. What is the extent of Internet usage by Primary Schools administrators?
2. What level and kind of Internet technology incorporation into the pedagogical strategies of teachers has occurred at Primary Schools?
3. Which personal factors influence Internet usage of teachers at Primary Schools (i.e, gender, age, ethnicity, professional involvement, department leadership, level of education, years of teaching, subject area instruction)?

In order to develop the background for these questions, and gain a greater perception of the issues, a literature review will be undertaken to show the historical perspective and how other researchers have viewed the same question. The last question connects into a perception held by some that the internet is itself an inherently dangerous tool that should not be present in the classroom. Sullivan and Samarawickrema (2008) note the distinctive challenges the internet raises, one challenge being that 'we are living in an age of information overload with the expectation that students will learn high-level skills such as how to access, evaluate, analyze, and synthesize vast quantities of information.' Yet the tests then undertaken by the pupils, and the manner in which the tests are undertaken attach no values to these very skills. (Valdez, 2005)

It is a fact that the resources available to the teacher have changed and are changing. The teacher who qualified in 1990 has moved from the blackboard and piece of chalk to an interactive whiteboard and may use the internet as an integral part of his/her lesson, pulling information, film clips and pictures from an internet resource. Writing about America, Fox says 'Seventy-seven percent of public schools had a majority of teachers who used the Internet for instruction during the 2003–04 school year, up from 54 percent in 1998-99... (Fox, 2005, p. 42) But has it improved learning? Has the introduction of the internet in this way really impacted into learning, this is the background of the first key question referred to in this research.

1.3 Objectives of the Study

The objective is to investigate the three key questions identified and connect into whether the introduction of the internet has been beneficial to both teachers and learners in the Bahrain Primary classroom. Research will be through Bahrain Primary Schools and backed up with wider reading from an international perspective.

The identified impact of the internet will then be used to back up the explorative literature review and to access the degree of the impact of the internet on the primary education system. At least one writer, Oppenhimer, in his 2003 book '*The Flickering Mind: The False Promise of Technology in the Classroom,*' considered that the introduction of the computer into the classroom was "entirely wasteful." The objective of this study will be to test if there is any validation in such a comment and certainly there is a lot of research evidence on the other side, for example Fulton (1998) that shows the complete opposite, that children are highly motivated when using ICT and that the internet can open up a huge range of otherwise untapped resources. Are the teachers within Bahrain Primary schools using the internet to support learning, to lead learning or perhaps only as a 'reward' through games? This research looks to open up some perceptions within this important resource.

1.4 Significance of the Study

The study will add further to the research being undertaken on the presence of the internet in the primary classroom. Given the fast changing technological landscape children now inhabit it is very significant to consider whether increasing reliance upon the internet in their lives is beneficial educationally as well.

1.5 Definition of Terms

Abbreviation	Meaning
chi-square test	A test that uses the chi-square statistic to test the fit between a theoretical frequency distribution and a frequency distribution of observed data for which each observation may fall into one of several classes
ESCWA	(United Nations) Economic and Social Commission for Western Asia.
Guttman scale	A method of quantifying the strength of a person's opinion on a topic of interest. The idea is that a series of k related yes/no questions in a questionnaire may be ordered in the sense that when the questions have been arranged in the appropriate order, an individual who answers 'Yes' to question j (<k) will probably answer 'Yes' to questions j+1, j+2,..., k.
IT	Information Technology.
ITG	Integrated Technology Group
Learning Gateways	Learning Gateways (sometimes called Learning Platforms) are built on Microsoft SharePoint and are now increasingly common in schools. They, in theory, allow a secure online learning environment where teachers and children can interact and parents can access material at home.
Primary Education:	Within Bahrain the primary phase of education referred to her regards children aged 6-12 years, a period of education falling into two cycles: phase one from 6-9 years where the class teacher system is applied; after the age of nine specialist teachers will be in place for all subjects including ICT, although the internet as a tool may be used by all teachers as appropriate within their lessons.
SPSS	SPSS (Statistical Package for the Social Sciences) is a data management and analysis product produced by SPSS, Inc. In Chicago, Illinois. Among its features are modules for statistical data analysis, including descriptive statistics such as plots, frequencies, charts, and lists, as well as sophisticated inferential and multivariate statistical procedures like analysis of variance (ANOVA), factor analysis, cluster analysis, and categorical data analysis. SPSS is particularly well-suited to survey research, though by no means is it limited to just this topic of exploration.
T-Test	A statistical examination of two population means. A two-sample t-test examines whether two samples are different and is commonly used when the variances of two normal distributions are unknown and when an experiment uses a small sample size. For example, a t-test could be used to compare the average floor routine score of the U.S. women's Olympic gymnastic team to the average floor routine score of China's women's team

CHAPTER II: LITERATURE REVIEW

Efficiency of ICT development goes hand in hand with the inclusion of the internet, that vast 'learning tool' that can bring the learners around the world closer. Kathleen Fulton (1998, p.1) noted that the impact of any technology can be largely dependent upon those who administer it. She associates the question of effectiveness with the question as to whether a text book is effective or not, it can be but it depends how it is used. Likewise the internet, it is useful but only if correctly taught, and the material the children have access to is appropriate. Fulton says 'the technology keeps changing; as hardware and software evolve, new educational opportunities appear.' (Fulton, 1998, p.1) This can also apply to the internet where websites come and go and material is 'posted' up each week. The quality of this material can be very varied and often cultural concerns may make the internet of concern for parents and teachers alike. In some countries within the region, such as Saudi Arabia, the internet is heavily censored for this reason, along with a concern to monitor the material presented to children in case it contrasted with the Wahabi Islam the Kingdom presents as central to their curriculum.

In the research study by Valcke et al (2007), 1700 primary school children of 78 schools in Flanders, Belgium, and their Head teachers were questioned about internet usage and their perceptions of 'safe' usage of the internet. Clear evidence emerged from the study of 'unsafe' use, although there was no clear connection between schools based intervention and unsafe internet use. School is a more 'protected' environment where internet screening banning sites such as '*You Tube*' and '*Facebook*' is much more in place and recommended sites only should be used.

Octega and Bravo (2000) found that the internet is an effective communication tool, alongside being used as an information source. There is a perception that 'Google' is a repository of all knowledge and Valcke (2007) focuses upon this perception often exhibited by our children, how they are attracted to new technology and the way this alters their behavior regarding learning.

Within the classroom there are naturally two different groups who need to gain value and support from the internet. One group comprises of the children as learners and the other group comprises the teachers as educators, looking toward the internet to support their teaching.

2.1 Internet and Pupils

The internet has been described as a vast sea of information (Ureigho et al, 2007, p.607) and the Internet as a 'live' constantly 'moving', theoretically borderless, potentially infinite space for the production and circulation of information.' (Ureigho et al, 2007, p.607) The internet can be used within the classroom not only as a resource for finding out information but it can be utilized as a radio, to watch television segments or whole programmes, to communicate with others through video or speech. It can connect schools around the world so a teacher in the UK could talk directly to a class in Bahrain. The possibilities are boundless, but the possibility is that pupils mostly use it to quickly gain access to homework questions then 'cut and paste' the answers so barely connecting with the information they present.

Bahrain as a kingdom has been committed to its students being a part of this new dimension in learning. The 2007 ESCWA Report on the Profile of the Information Society in the kingdom of Bahrain noted the desire since 1998/99 to eradicate administrator and teachers' computer illiteracy (ESCWA, 2007, p.9) and that within the 114 Primary schools in Bahrain they were now all equipped with a 56 Kbps Modem complete with user name/password authentication. The Bahrain government has therefore been committed to the use of the internet and the training of staff to deliver the curriculum using it since the late 1990's, the government of Bahrain seeks to make their nation a leader in this regard within the region and through investment will look for return in classroom progress from the children.

Research by Steve Higgins for Newcastle University in the UK makes the point that having the facility of ICT and the internet in the classroom, even letting the children having regular access to it, does not in itself create better learning. (Higgins, 2001, p.16) It would appear that it is *how* it is used that makes the material difference. This fact is strongly reiterated in a large research project of 160 primary schools in the UK by the Department for Education and Skills which found that 'there is no consistent relationship between the average amount of ICT use reported for any subject at a given key stage and its apparent effectiveness in raising standards.'(DES, 2002, p.4) Higgins notes that there is very little actual evidence regarding the impact on pupil attainment and in part this is backed up by Mumtaz & Hammond (2002) who show that ICT as a whole is used in classrooms largely for dull practice and reinforcement, which is why its impact is hard to quantify. Where published research has been undertaken and published specifically on the use of the internet, the results are less encouraging than may be hoped. One report indicated that whereas the introduction of web pages to support literacy does help with the motivation of pupils, especially of reluctant readers, the approach was actually

less effective than 'traditional instruction' when it came to improving reading and comprehension skills, or helping pupil learning strategies within literacy. (Kramorski & Feldman, 2000, pp.149-155)

A common feature within the literature is to identify how the internet is used, not the presence of the internet itself. This statement is itself somewhat simplistic, if not then backed up with an answer as to how it should be used to be effective. One answer comes from the book '*Practical Tips and Activities for the Elementary Classroom*,' (1996) a fairly early defense for the use of the internet in primary schools that made a strong case for its introduction on the grounds that it provided audio, visual and kinaesthetic experiences and opened up to the children an opportunity to develop increasingly sophisticated search and retrieval techniques and begin to differentiate the material they find. The book also praises the possibilities for group co-operative work on the internet and the way the net can connect schools around the world with shared resources. (Offutt & Offutt, 1996, pp.4-6) This is not the first reference in this study to the possible use of the net in connecting schools globally, but how frequently this is actually done is far more debatable. The aspect of sharing resources is however clearly seen by a number of schools who collate materials together for any other school to link into. Woodlands Primary School, or Ambleside Primary School, in the UK for example have large online resource banks available for all with appropriate games activities and learning tools for anyone to access with their children, whether at home or through school.

Ultimately the children in our classrooms look toward their teachers to deliver a curriculum and teaching experience that leads to their learning. Therefore it is the teachers who need to be trained to deliver the best learning experience through the net.

2.2 Internet and Teachers

Stephens and Crawley (1994) say that 'whenever IT is mentioned in the educational sphere, it's always spoken about as a resource for teaching...one area that's never mentioned is the use of IT for your own personal productivity.' (Stephens & Crawley, 1994, p.82)

This raises the point that the internet is a huge tool for a teacher to join in with other teachers worldwide and share resources and ideas.

The Microsoft Learning Gateway is essentially there as a tool for all teachers; a web based collaborative for communications that serves education. The Learning Gateway creates integrated e-learning for schools of all age groups; learning portals can be developed enabling

children to pick up teachers notes at home, submit homework and connect into lessons they have missed when ill. It is a huge opportunity for teachers to put up work for students and see when the pupils have picked it up. Looking at one such site, the SIMS learning gateway (http://www.capita-sims.co.uk/our-products/sims-learning-gateway-primary-schools) it promotes the internet as allowing parents to participate more fully with their children's education, as they can look ahead to work being studied in the coming weeks. It also can allow quicker access to the teacher and the parent can leave messages for staff.

The second key question for this research is: Does the internet reduce teacher work load by making resources available online that encourage child development and learning? Using a system such as the Learning Gateway does indeed allow the teacher to do more work at home. Two key features of the internet advertised for staff are:

- Enable parents to report their child's absence and check homework online. Keep parents up-to-date with school events and activities without the need to send letters home.
- Provide teachers with the tools they need and more flexibility in how and where they work. They can view their pupils' attendance records, learning targets and assessment grades from any computer with web access(SIMS, Capita http://www.capita-sims.co.uk/our-products/sims-learning-gateway-primary-schools).

If the Internet is enabling the teacher to work more flexibly, linking into resources on a global scale, then that is clearly beneficial to the students in their class. But there is a responsibility for teachers, more so perhaps than for any other generation within the profession, to make sure that their training is up to date and they are aware of new initiatives. Shelly et al say it is essential for the teacher today to be 'computer literate, information literate and most importantly integration literate.' (Shelly et al, 2007, p.503) To provide pupils with the information they require in a digital age will require regular updating of skills and new teachnology means decisions have to be made over whether to incorporate the new resource or not. One example would be the EReader (*The Kindle*) increasingly used by adults to store large numbers of books they can download and read, the reading equivalent of downloading music. But do Literature teachers use it to have the children read their set books on? Or do they remain with the traditional reading book with the torn pages and worn spines, because they are 'proper books'?

Many young students enter schools with great abilities to function on a computer, being used to games at home. The correct use of the internet can provide a teaching tool that opens up a range of resources for the teacher supporting their learning, such as: interactive books, maths tasks

and competitions where you can play against other children worldwide and maths and spelling games such as '*Countdown*'. It is important that a teacher knows the correct time to use these activities, to fully utilize the possibilities for the children.

What the literature tells us is to be able to truly facilitate effective learning for this generation of children we must be aware that they are 'profoundly different from previous generations.' (Shelly et al, 2007, p.15) This is a generation who are used to having a digital world at their fingertips and primary aged children have access to the internet at home through mobile phones, ipads, television and the computer. The National School Boards Association in the USA showed that 96% of US teens and tweens (ages 8-12) who have internet access use social networking to connect to peers. (Shelly et al, 2007 citing NSBA, p.15) Shelly et al (p.15) note that *Apple* have identified this age of digital students as the digital generation of hyper communicators who are multi-taskers and use multi tools to communicate with a wide range of 'friends' on the information highway.

To truly educate this digital generation effectively there is an apparent need for an adaption of teaching methods. In some circumstances technology, including the internet, comes into the classroom but is only truly used as a support mechanism. The wonderful interactive white board, linked to the net, may lie mostly unused if the teacher is unfamiliar with it and is uncertain how to get the most from it. The children are not from the listening generation that went before, but come from this digital generation of quick information and sound bites; their music is downloaded and they channel switch much more when watching television, as they have hundreds of channels to choose from. Many, even at primary age, see the internet as a social networking tool and will look for opportunities to get onto chat sites or social networking zones. This is the challenge for the teacher and many schools constantly battle to block older students from accessing social networking sites whilst in school.

Alan Pritchard (2007) shows how education can meet the challenge of the internet and use it effectively for language teaching. He uses the example of language teaching where through video conferencing children in primary schools can gain access to a specialist secondary school teacher who can lead the lesson. Not only is this possible, but through video conferencing the children can gain access to native speakers of the language and link up with children in the native country of the language they are learning. It opens up doors to learning and makes the learning of the language more relevant. Pritchard shows that learning does take place in this setting and that video conferencing increases child motivation and gets teachers planning and working together across educational sectors. (Pritchard, 2007, pp.92-94)

The best internet use therefore encourages constructivist learning whereby the children are involved in the social process of learning. Andrew Pollard (2005) notes that constructivist learning is by nature more child centered and links to the ideas of Piaget. But at heart it allows a negotiation between teacher and child whereby there is an area of activity and work negotiated, leading to experience and a process of making sense before evaluation. It 'casts the learner in a very active and independent role, leaving much of the selection, pacing and evaluation of the activity for the child to negotiate...there is considerable emphasis on pupil interests.' (Pollard, 2005, p.147) This close encounter with the learner means the teacher will provide a stimulating learning environment linked to the child's experiences, and the internet is now such a huge part of that experience that building it into the curriculum can only be advantageous.

2.3 Internet and Schools Administration

Schools administrators can benefit from Internet as it can keep a database of all students' performances and attendance, including the attendance of teachers, and eases the sometimes problematic situation of bringing in replacement teachers (Bahrain Ministry of Education Website accessed March 2005).

The Internet may help one day replace textbooks with digitized e-books which can be updated and edited with ease, this is already happening as some schools download the free *Kindle* on in class laptops. Schools in the future will not worry about the high costs of buying printed books and not have to replace battered and written on text books. But on the other hand, computer technologies as Kent and McNargney (1999) quote: "Change seemingly overnight, and today's hottest technologies seem to cool all too rapidly". Thus, the costs of maintenance and updating hardware and software can with time become high.

Communication plays a big role in school administration similar to the way of teachers, where they can send e-mails and post discussion topics through forums to their teaching staff and other school administrations and the ministry of education (ITG Solutions).

2.4 Internet in the Bahrain schools and King Hamad of the Future School Project initiative and achievements

Bahrain has been connected to the internet since 1995, making it readily available to its citizens. As a percentage of population, Freedom House estimates that in 2011 there is an approximately 54% of Bahrainian citizens currently online, with internet access being widely available around the state, particularly in the regions of schools, universities, and coffee shops (Freedom House, 2011). However despite the countries increasing internet usage, the quality of services, such as broadband connections cannot adequately support modern Internet applications, such as video and file sharing (Broadband Quality Score: A Global Study of Broadband Quality, 2009).

King Hamad of the Future School Project is considered a substantial turning point in the field of education. It reassess the traditional learning system that have been employing for many years, and turns it into an IT based system that prepares future generations to establish an advanced information society and build a knowledge-based economy.

Due to this transformation, many sources of information will be accessed. This will enable students to widen the scope of their knowledge and the process of individual learning, as well as the ability to benefit from the information revolution the world is experiencing. It will also enable teachers to interact with students, as well as oversee and asses them individually. Parents will be able to keep continual contact with their offspring's schools. In addition, traditional textbooks will be turned into ebooks accessible with audio and video characteristics on selected items.

Strategic Outlook of the King Hamd Future School

- Continuing economical and social development.
- Investment in knowledge - technical competition.
- Developing a knowledge society.
- Educational system based on employing educational information and communication technology.

The Goals of the Project

- Developing the educational system in the Kingdom andelevating its products.
- Accelerating the pace of human development.
- Establishing an Information Society.

- Building a Knowledge-Based Economy. (Which will ultimately lead to Achieving Economic Development and Societal Elevation)

Towards an e-Learning Environment

Program Execution

- Starting with 11 schools spread over the 5 governates.
- Providing schools with the necessary equipment, projection screens, and linking them via a network.
- Cooperating with Batelco to develop a network so as to Link the schools with the educational portal.
- Establish a centralized educational portal to provide e-Learning services.
- Transforming textbooks into interactive e-books.
- Systematically developing textbooks and edifying elearning contents.
- Training teachers to use e-learning systems.

A Glimpse of the Project

- It is a fundamental turning point from the traditional teaching-learning process to a future process based on technological employment.
- It provides a learning environment for the students, teachers, administrative staff, and society, which allows interaction at any given point. It is an ideal solution to the demands of e-learning which covers a large number of users at once.
- It is an educational model which contains teaching and learning tools, as well as tools of assessment.
- It completely changes the limited resources of the traditional class environment to an open interactive motivated environment which improves the learning process, and helps benefit from various information resources:
  - ✓ Allows every student to learn according to their ability, at the same time taking into consideration the different learning abilities of the students.
  - ✓ Allows teachers to interact with students, and continually asses them individually.
  - ✓ It helps students to benefit various positive skills and values illustrated by:
    - Embodying cooperative learning
    - Developing assessmentand building skills.
    - Developing artistic thinking
    - Reinforcing criticism and assessment skills
    - Reinforcing conversationskills

- Developing students' personality and enabling them to generate knowledge, and not just be a recipient of it. It also enables students to be active members of an information society based on economic knowledge.

Project Characteristics

The Project entails a complete educational organization that includes an educational portal that allows students, teachers, administrative staff, and parents to each access it according to their needs and restriction level.

1. The School Administration

- Provides the school administration with a complete system that contains information about the following:
  - Staff
  - Teachers
  - Students
  - Parents
  - Educational Subjects
  - Schedules
- Administrative Systems

2. The Teacher

Provides teachers with a program where any given subject, after its transformation into an e-book, can be taught at a click of a button, and where teachers can convey any piece of knowledge they see fit via this program. It also enables teachers to give live lectures to all schools within the network, and will also enable teacher's access to educational sites so that they can obtain the most benefit.

3. The Student

The educational organization allows students to:

- Interact with other students and teachers.
- Ask questions.
- Give opinions.
- Exchange opinions, information, and ponderings with others in their school, other schools, and schools all over the world.
- Individual learning.

4. The Parent

The Parent interacts with the organization to access:

- Offspring's academic performance.
- Behavior.
- Attendance.
- Aids them to oversee their offspring and keep the School-Home tie active.

5. Curricula

This organization enables curricula specialists to prepare electronic education material, and keep in contact with students and instructors.

2.5 Background of Applying the Internet in Al Busiteen Primary Schools

Al Busaiteen Primary Girls School is one of the Muharraq Governorate schools. The age range in the school is from 6 to 12 years, and there are 886 students. Most students come from limited-income families. Students are distributed across 28 classes: five classes for most levels and four classes for the primary fourth and fifth grades. The school categorises 268 of its students as talented and creative, 243 as outstanding, 24 as having learning difficulties and 11 students are in the merged class. The Principal is in her fourth year at the school. There are 12 administrative staff and 55 teaching staff. The school is part of King Hamad's Schools of the Future project.

Busaiteen Primary Boys School is one of Muharraq Governorate's schools and was established in 1963. There are 908 students, aged between 6 and 12 years old. Most students come from limited-income families. Students are distributed across 29 classes: 13 classes for the first cycle and 16 for the second. The school categorises 334 of its students as outstanding, 9 as talented and some 40 as students with special educational needs. The Principal is in his fourth year at the school. There are 65 teachers and 11 administrative staff.

Each of the schools mentioned above have one Electronic Classroom on their premi is a large classroom furnished, with thirty (30) computer workstations, a SMARTBoard, laptop computer(s) for the teachersand one printer connected to the SMARTBoard

All AL-Busiteen Primary Schools students apply for an account in order to use the network and the worldwide Internet. Student Applications must be renewed each academic year. The student a sponsoring teacher/staff member and the child's parent or guardian must sign the application, students must agree to abide by the Ministry of Education telecommunications policy or they

may lose network access and related privileges and may receive school disciplinary action. The sponsoring teacher/staff member agrees to sponsor and supervise the students use of the network. The parent/guardian agrees to monitor the child's use of the network, agrees to be legally and financially responsible for any misuse of the Internet by the child; and will not hold the school responsible for controversial materials acquired while on-line.

All teachers and administrators at school may apply for an Internet account . For those teacher and administrators who have applied for an account, access is free and unlimited. Again, connectivity and accessibility should not preclude Internet usage.

2.6 Conclusion

The internet as a resource allows speed, communication, access to a huge range of resources and people and is part of children's daily lives. There are also inherent dangers on the net and we owe a duty to children to show them that behind many sites and social networking faces there may be peril. It is increasingly a duty of staff and parents who are allowing children access to the net to teach them how to use it safely, it is a fact that 'preditors' do exist who seek to trap young children as they access social chat sites.

The National Grid for Learning (UK) used to provide a network of checked out educational sites and evaluated each one for educational purposes. Now the responsibility lies more on individual schools and teachers to check out the internet as they would any other resource; making sure that age appropriate material only is there. Children also need taught how to use the internet, as any other resource and making the internet a part of the IT curriculum rather than just a bolted on classroom support tool would appear appropriate.

The literature review has shown the vast potential of the internet, as well as showing up that traditional teaching methods must run alongside it for many aspects of literacy, science, history and the wider curriculum. But the net opens learning up worldwide, placing learning in line with the learning style of the digital generation.

CHAPTER III RESEARCH METHODOLOGY

Chapter Three is divided into three parts:

- Description of the sample studied.
- Procedures for data collection (electronic and regular mail survey, visitations to school site to observe Internet connectivity and accessibility, and interview of various teachers and administrators at AL-Busiteen Primary girls and boys school).
- Procedures for data analysis

3.1 Description of the Sample Studied:

The schools which are selected to be the sample for this study are two primary schools, one for girls and the other for boys, namely: AL-Busiteen Primary girls and boys school. Table 3.1, denotes the demographic profiles of the AL-Busiteen Primary girls and boys school teachers and administrators who responded to the survey.

Table 3.1: Demographic Profiles of Respondents to Survey

Demographic Profiles	Teachers (n=84)	Administrators (0=8)
Gender	Male: 35 Female: 49	Male: 7 Female: 1
Age	22-30 yrs.: 9 31-45 yrs.: 35 46-60 yrs.: 40	45-50 yrs.: 8
Degree Status	Bachelors: 6 Masters: 10 Masters +: 68	Masters & 30: 7 Doctorate: 1
Years in Education	1-15 yrs.: 30 16-30 yrs.: 33 3 1 yrs. +: 21	1-15 yrs.: 4 16-30 yrs.: 4

3.2 Procedures for Data Collection

The following were the sequence of decisive measures taken in order to answer the questions of research:

1. In order to pilot test the survey and interview questions, the survey was administered and scrutinized by a doctoral class of 20 at Bahrain University on December 1st March 2012. The purpose of this was to refine the data collection instrument.
2. This researcher then visited the schools in order to denote the locations and numbers of computers with Internet access. It was observed that there were 18 classrooms, 9 subject area offices, and 1 labs with Internet connectivity.

3. Out of the 157 teachers and administrators, 105 had completed applications and returned to this researcher.
5. After analysis of the surveys, 15 teachers, and 2 administrators, who frequently and rarely (or never) use the Internet were interviewed. Infrequent users were interviewed in order to assess obstacles to Internet usage.

3.3 Data Analysis

The surveys were statistically analyzed utilizing the program SPSS. The interviewing segment of the data collection was qualitatively examined. The data collection instruments can be found in Appendix A.

Table 3.2 depicts the research question asked and its corresponding method of analysis:

1. How does the Internet teacher usage at North Rockland High School compare to the national statistics of teacher usage?	To statistically measure the significant differences between these groups, a chi-square was used.
2. What is the amount and type of Internet usage amongst the North Rockland High School administrators?	Due to the relatively few administrators, qualitative analysis, through the use of surveys and structured interviews was employed.
3. What level and kind of Internet technology incorporation into the pedagogical strategies of teachers has occurred at North Rockland High School?	Measurement of the statistically significant differences between frequent and infrequent Internet users was completed through the use of t-tests for independent samples.
4. Which personal factors influence Internet usage of teachers at North Rockland High	School (i.e.gender, age, ethnicity, professional involvement, department leadership, level of education, yrs. of teaching, subject
5. Which structural factors influence Internet usage of teachers at North Rockland High School (i.e: accessibility, connectivity at home,	technical issues, telecommunications

Constructivism theory provided the basis for the analysis of the respondents answers to the survey and interview questions:

3.4 Constructivism Theory

The Ministry of Education in the Kingdom of Bahrain is spending a large portion of its budget on technology and the Internet. Many of the schools districts are now beginning to question the impact that technology has on the students it serves. Is technology instruction composed of "skill-and-drill" type activities or does it promote constructivist type learning?

In order to assess the type of Internet activities (constructivism or skill-and-drill) as well as its effect on pedagogy, many of the survey questions were based on constructivism theory, (as expressed by Lebow (1995). Table 3.3 denotes the fourteen constructivism terms (Lebow, 1995) and related survey questions. These constructivism terms provided the theoretical base for this researchers data analysis.

Table 3.3: Theoretical Base for Data Analysis

Contructivist Term	Survey Question(s) Asked
Active Engagement	When using the Internet with my students, they appear to battentive, interested or absorbed in these activities.
Authenticity	My classroom Internet activities are based on my students personal experiences and interests.
Collaboration/Community	Students work in cooperative groups when using the Internet in my classroom.
Complexity	My classroom Internet activities are transdisciplinary (they encompass at least two different curricular areas).
Generativity	I assist my students in understanding new information that they have learned from the Internet.
Multiple Perspectives	Students should be encouraged to explore and inquire about Internet writers viewpoints or perspectives.
Ownership	I am committed to developing new and meaningful Internet classroom activities for my students.
Personal Autonomy	During Internet activities in my classroom, my role is to act as facilitator, as opposed to a direct provider of information.
Personal Relevance	Students should be encouraged to develop their own perceptions or understanding of new information from the Internet Pluralism Students should be encouraged to inquire about individual Internet writers viewpoints rather than immediately rejecting or discarding it.
Reflectivity	I encourage my students to reflect either verbally or in writing about their Internet classroom activities or experiences.
Self Regulation	I encourage my students to self-monitor their progress on Internet classroom activities.
Transformation	• The Internet has positively changed my views on the role of educational technology in the classroom. • The Internet has positively changed my views on education. • The Internet has made me a better teacher. • I have seen time-on-task improvements from students using the Internet • I have seen students increase their creativity with the addition of the Internet.

CHAPTER FOUR: FINDINGS AND RESULTS

The findings of the following research questions have been analyzed in this section:

1. What is the Internet usage of Busiteen Primary School administrators?
2. What level and kind of Internet technology incorporation into the pedagogical strategies of teachers has occurred at Busiteen Primary School?
3. Which personal factors influence Internet usage of teachers at Busiteen Primary School (i.e, gender, age, professional involvement, department leadership, level of education, years of teaching, subject area instruction)?

4.1 Sample Studied

Table 4.1 provides a demographic profile of the respondents to the teacher and administrator survey:

Demographic Profiles	Teachers (n=84)	Administrators (n=8)
Gender	Male: 35 Female: 49	Male: 7 Female: 1
Age	22-30 yrs.: 9 31-45 yrs.: 35 46-60 yrs.: 40	45-50 yrs.: 8
Degree Status	Bachelors: 6 Masters: 10 Masters +: 68	Masters & 30: 7 Doctorate: 1
Years in Education	1-15 yrs.: 30 16-30 yrs.: 33 31 yrs. +: 21	1-15 yrs.: 4 16-30 yrs.: 4

Table 4.1: Demographic Profiles of Busiteen Primary School Teachers and Administrators who responded to survey

The survey instruments will be found in Appendix A, Table 4.1 depicts the of responses to the survey questions. As showns in table 4.2, 11.4% of the surveys were returned through electronic mail. Due to the findings of Sproull, (1986), (see pg. 68), this researcher was expecting to receive a greater amount of surveys returned electronically the retun was serendipitous.

Table 4.2: Mode of Response to Survey Questions

Type of Correspondance Number Returned	Percentage Returned
E-Mail 12/105	11.4%
Regular Mail 80/145	55%
Total Returned 92/157	58.59%

4.2Data Analysis

In order to analyze the results and answers of the research questions, survey responses were tabulated into the program SPSS. This data was then analyzed descriptively or quantitatively through the use of chi-square or t-tests. A Chi-square or T-Tests is non-parametric test, it is a rough estimate of confidence. It has been used because it accepts small data as input than parametric tests. Nonetheless, its limitations are also its strengths; because chi square is more 'forgiving' in the data it will accept, it can be used in a wide variety of research contexts.
As a result of the survey, various teachers and administrators who often, rarely and never use the Internet were then interviewed. The results of these interviews were examined qualitatively, thus making the analysis interpretative by nature. This qualitative and quantitative data analysis was conducted in order to answer the five research questions

Research question one asks: ***"What is the Internet usage of the Busiteen Primary School administrators"?***
Even though all the Busiteen Primary School administrators chose to respond to the survey, their numbers are relatively few, being eight in total. Therefore, after analysis of the respondents results to the administrator survey, this researcher has chosen to qualitatively analyze their Internet usage, types and amounts.

The demographic profiles of the Busiteen school administrators has been described above (see table 4.1) In summary, they are a group , who have been in the field of education for many years and are all highly educated (7 out of 8 hold degree of Masters +30 credits). This group belongs to many professional organizations.

In terms of their Internet usage, four administrators, claim to use the Internet at Busiteen Primary School once or more per month. Four administrators, state that they use it less than once per month. Eight administrators, or 100% state that they can access the Internet from Busiteen Primary School. Additionally 4 of these administrators state that they have Internet connectivity at home. Seven administrators or 87.5% state that they have a good understanding of how to use the Internet.

Clearly there was no uniform usage of the internet by the administrators.Observing their stated obstacles and motivators to Internet usage may provide us with a better understanding of their infrequent Internet usage. As shown in tables 4.3 and 4.4, Busiteen Primary School administrators overwhelmingly stated that their greatest obstacle to Internet usage is accessibility/connectivity:

Table 4.3: Administrator Survey, Part 5

Question 14: What do you see as the major obstacle (s) to your Internet usage?	
Internet Accessibility/Connectivity	7 of 8: 87.5%
Time	6 of 8: 75%

Table 4.4: Administrator Survey, Part 5

Question 15: What would motivate you to use the Internet more often?	
Internet Accessibility/Connectivity	7 of 8: 87.5%
Time	6 of 8: 75%

After these surveys were analyzed two administrators were interviewed. They were both asked the following question amongst other pertinent issues that will be addressed later: ***What would motivate you to use the Internet more often?***

Both administrators responded "office accessibility" would motivate me to use the Internet more often. These administrators do not appear to use the Internet to any large extent, many do have viewpoints on the role of the Internet within an educational setting. As table 4.5 denotes, the majority of the administrators believe that the addition of the Internet has had a positive impact on education at Busiteen Primary School:

Table 4.5: Busiteen Primary School Administrators Views on the Internet

	Agree		Disagree	
	No	%	No	%
Internet. positively changed my view of education	5 of 8	62.5%	3 of 8	37.5%
Internet makes teachers better at teaching	5 of 8	62.5%	3 of 8	37.5%
Encourage students to inquire, Internet writings	6 of 8	75%	2 of 8	25%
Internet experience, teacher requirement by SED	3 of 8	37.5%	5 of 8	62.5%
Student time-on-task improves with Internet	6 of 8	75%	2 of 8	25%
Internet is a fad	3 of 8	37.5%	5 of 8	62.5%
Internet: should be low priority	3 of 8	37.5%	5 of 8	62.5%
Internet: increases creativity	6 of 8	75%	2 of 8	25%
Teachers need skill based Internet training	5 of 8	62.5%	3 of 8	37.5%
Administrators need skill Internet based training	8 of 8	100%		

After analysis of the survey questions this researcher interviewed two administrators, the first who accesses the Internet on a daily basis and the second who accesses it at least once per month.

Discussion of Administrator Interviews

The first question asked by this researcher was: **"Can you describe your professional use of the Internet"?**

The administrator who uses the Internet on a daily basis describes his/her professional use as an informational instructional tool. The administrator who accesses the Internet less frequently describes his /her professional Internet usage as predominantly for research.

Another question asked by this researcher was: **"There's a lot of talk about integrating the Internet into the curriculum. What does that mean to you"?**

The daily user stated that it's a tool to develop the curriculum further. The administrator who uses the Internet less frequently described how it can be embedded into the curriculum through activities such as research projects and simulating real life situations.

A final question asked of the respondents was**: "What is your personal feeling about spending all this money on Internet connectivity"?**

Both administrators responded similarly to the above question. They both felt that there is a problem with competing priorities. "Do you put your limited moneys into Internet connectivity or building more classrooms." they both stated .

Summary of Key Findings of Research Questions

Research question one asks, **"What is the Internet usage of Busiteen Primary School administrators"?** Since there was a relatively small sample size of these administrators, (8 in total), this researcher has chosen to qualitatively analyze their responses to the survey. As a result, it can be stated that 50%, or 4 Busiteen Primary School administrators claim to use the Internet at school on a frequent basis. Fifty percent, or 4 administrators state that they access the Internet from home. Similarly, 62.5%, or 5 administrators believe that the addition of the Internet is a positive addition to education at Busiteen Primary School and additional connectivity should be explored.

Research question two asks*: "What level and kind of Internet technology incorporation into the pedagogical strategies of teachers has occurred at Busiteen Primary School"?*

Significant Differences: Busiteen Primary School Teacher Internet Usage and Pedagogy. In order to establish significant differences between Internet usage rates and its impact on pedagogy, a t-test was completed.

To answer the two research question, ***"What level and kind of Internet technology incorporation into the pedagogical strategies has occurred at Busiteen Primary School"?,*** Parts 4 and 5 of the teacher surveys were analyzed utilizing t tests for independent samples.

Part 4 of the Teacher Survey entitled ***"Internet Classroom Activities"*** was only completed by those teachers who use the Internet at Busiteen Primary School once or more per month. Of the 84 teachers who completed the survey, 24-25 of these educators responded to this section of the survey.

Table 4.6, describes the range of teacher respondents who use the Internet once or more per month. Moreover table 4.6, illustrates that there were two survey statements which established a significant difference between response choices. These survey statements were as follows: ***"During Internet activities, my role is to be a facilitator as opposed to a direct provider of information" and "I assist my students in understanding new information that they learned from the Internet."***

Upon examining table 4.6, it must be noted that the number and percentages of responses represent a combined total to choices of "always and "*frequently*" or "*sometimes*" and "*never.*"

Table 4.6 denotes that for the survey statement, ***"During Internet activities in my classroom, my role is to be a facilitator as opposed to a direct provider of information,"*** 91.66% of the respondents reported their responses as: "always" or "frequently." The response of "always" and "frequently" to this statement is significantly greater than the 8.34% summation of reported responses to the choices of "sometimes," and "never."

In response to the statement, "I assist my students in understanding new information they have learned from the Internet," 75% of the teachers responded "*always*" or "*frequently*" to this statement. Again, this response is significantly greater than the 25% summation of responses to the choices of "*sometimes*" and "never."

Table 4.6: Survey, Part 4: "Internet Classroom Activities"

	Always/Frequently		Sometimes/Never	
	No.	*%*	*No.*	*%*
*Internet is an integral pan of my curriculum	8	32%	17	68%
*Classroom Internet activities based on students experiences	25	20%	2	80%
Cooperative groups, Internet activities	10	41.66%	14	58.34%
Students attentive, Internet activities	13	54.16%	11	45.84%
Internet activities are transdisciplinary	8	33.33%	16.66	67%
**My role is facilitator, during Internet activities	22	91.66%	2	8.34%
**1 assist students with new information learned from Internet they learned from Internet	18	75%	6	25%
I encourage student reflection about Internet experiences	10	41.66%	14	58.34%
I encourage students to self-monitor progress, Internet activities	12	50%	12	50%
*25 teachers responded to these two questions. 24 teachers responded to the other seven questions.				
**The response of "always" and "frequently" to these two statements is significantly greater than choices of "sometimes" and "never" combined.				

Part 5 of the survey questions entitled, ***"Internet and Pedagogy"*** was completed by all teachers who responded to the survey. The following results showed a significant difference between Busiteen Primary school teachers who use the Internet less than once per month versus those who use it once or more per month.

For the survey statement, ***"The Internet has positively changed the way I view education***," there is a significant difference, where $p<.05$ between the teachers who use the Internet less than once per month versus those who use the Internet more than once per month. Levene's test for equality of variances has a probability of .589 and the 2 tail significance of the equal variance has a score of .008. Hence, table 4.7 illustrates that the respondents who use the Internet more than once per month stated that the Internet has positively changed their view of education. Also as Guttman predictive scalling which one answer (Yes) allows to predict how the next answer will go, we can predictable that for those who use the internet they will feel the intent has change their views.

Table 4.7: Teacher Survey Part 5: Internet and Pedagogy: Survey Question 2: The Internet has positively changed the way I view education.

Variable	# of cases	Mean	SD	SD of Mean
Internet Use <Ix per month	29	-.2414	1.091	.203
Internet Use >Ix per month	43	.4651	1.077	.260

Levene's Test for Equality of Variances: F= .294 P=.589

Variances	t-value	df	2-Tail Sig	SEofMean
Equal	-2.72	70	.008	SE ofDiff

SD=standard deviation, SE=standard error. df=degrees of freedom

Figure 4.1, supplements table 4.7 by clearly denoting that 67.44% of the more frequent users reported that they strongly agree or agree with the statement, ***"The Internet has positively changed the way I view education,"*** as compared to 37.93% of the teachers that use the infrequent.

Figure 4.1: Teacher Survey Part 5: Internet and Pedagogy: Survey Question 2: The Internet has positively changed the way I view education.

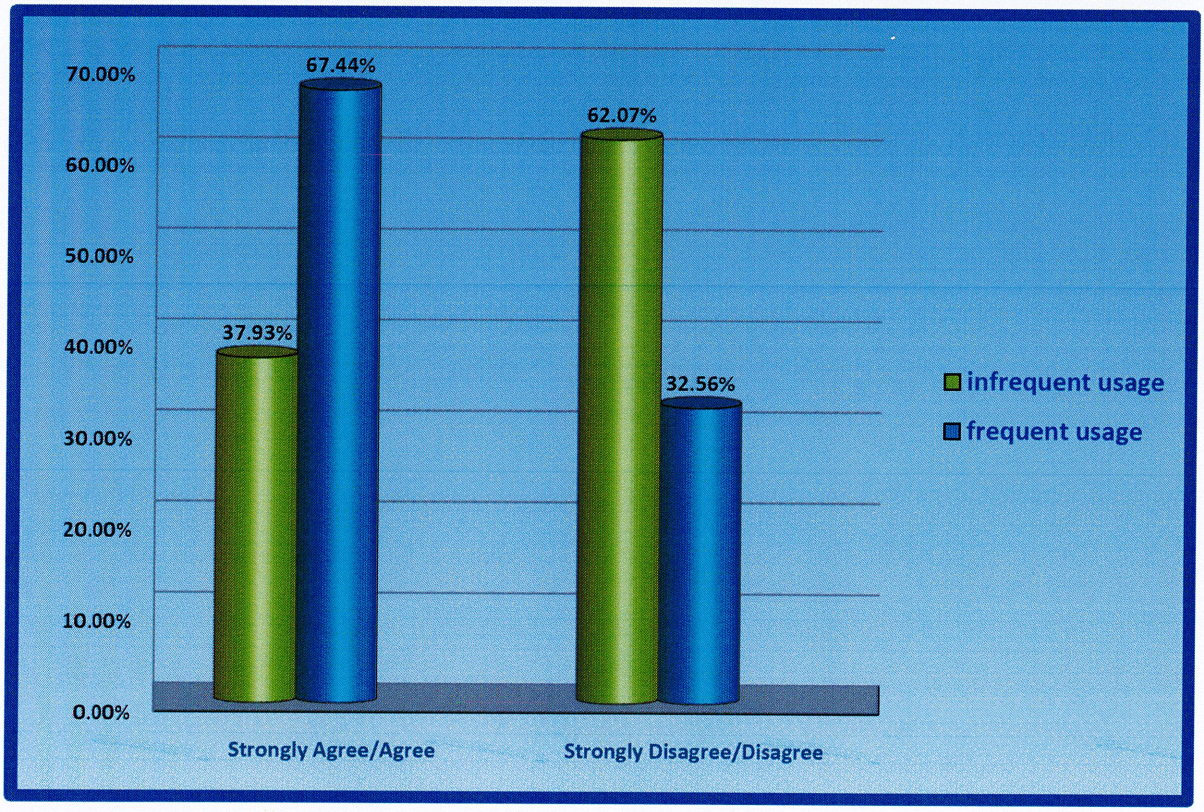


Table 4.8: demonstrates that for the statement, ***"I am committed to developing new and meaningful Intemet classroom activities for my students,"*** there is a significant difference where, p<.05 between the educators who use the Internet less than once per month versus those who use the Internet more than once per month. Levene's test for equality of variances has a probability of .899 and the 2 tail significance of the equal variance has a value of .006. The respondents who use the Internet more than once per month reported that they feel ***"committed to developing new and meaningful Internet activities for their students."***

Table 4.8: Teacher Survey Part V: Internet and Pedagogy: Question 7: I am committed to developing new and meaningful Internet classroom activities for my students.

Variable	# of cases	Mean	SD	SE of Mean
Internet Use <Ix per month	29	-.3448	1.289	.239 .21
Internet Use> lx per month	42	.5714	1.364	

Levene's Test for Equality of Variances: F=.016 p= .899

Variances	t-value	df	2-Tail Sig	SE of DifT
Equal	-2.84	69	.006	.322

SD=standard deviation, SE=standard error, df=degrees of freedom

Figure 4.2, supplements table 4.8 by denoting that 69.05% of the teachers who use the Internet more than once per month reported that they strongly agree or agree to the statement, "I am committed to developing new and meaningful Internet activities for my students," as compared to 41.38% of the less frequent users.

Figure 4.2: Teacher Survey Part V: Internet and Pedagogy: Question 7: I am committed to developing new and meaningful Internet classroom activities for my students.

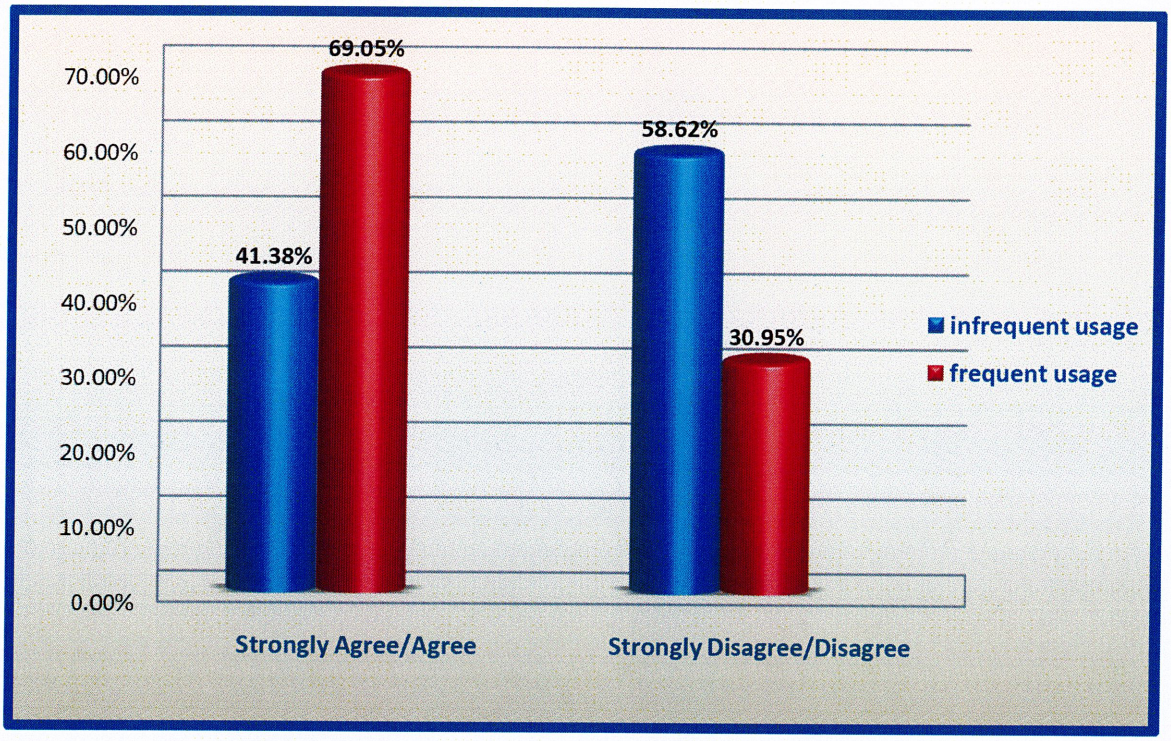


Table 4.9: shows that for the statement, ***"Expertise on the Internet should be a competency required by the state education depanment,"*** there is a significant difference where, p<.05 between the educators who use the Internet less than once per month versus those who use the Internet more than once per month. Levene's test for equality of variances has a probability of .688 and the 2 tail significance of the equal variance has a value of .016. The respondents who use the Internet more than once per month stated that expertise on the Internet should be a competency required by the state education department, as some of teachers in pramiary school they don't have a skill to use computer program

Table 4.9: Teacher Survey Part V: Internet and Pedagogy: Question 8: Expertise on the Internet should be a competency required by the state education department

Variable	# of cases	Mean	SD	SE of Mean
Internet Use <Ix per month	30	-.4333	1.251	.228
Internet Use> Ix per month	42	.3095	1.259	.19

Levene's Test for Equality of Variances: F= .163 p= .688

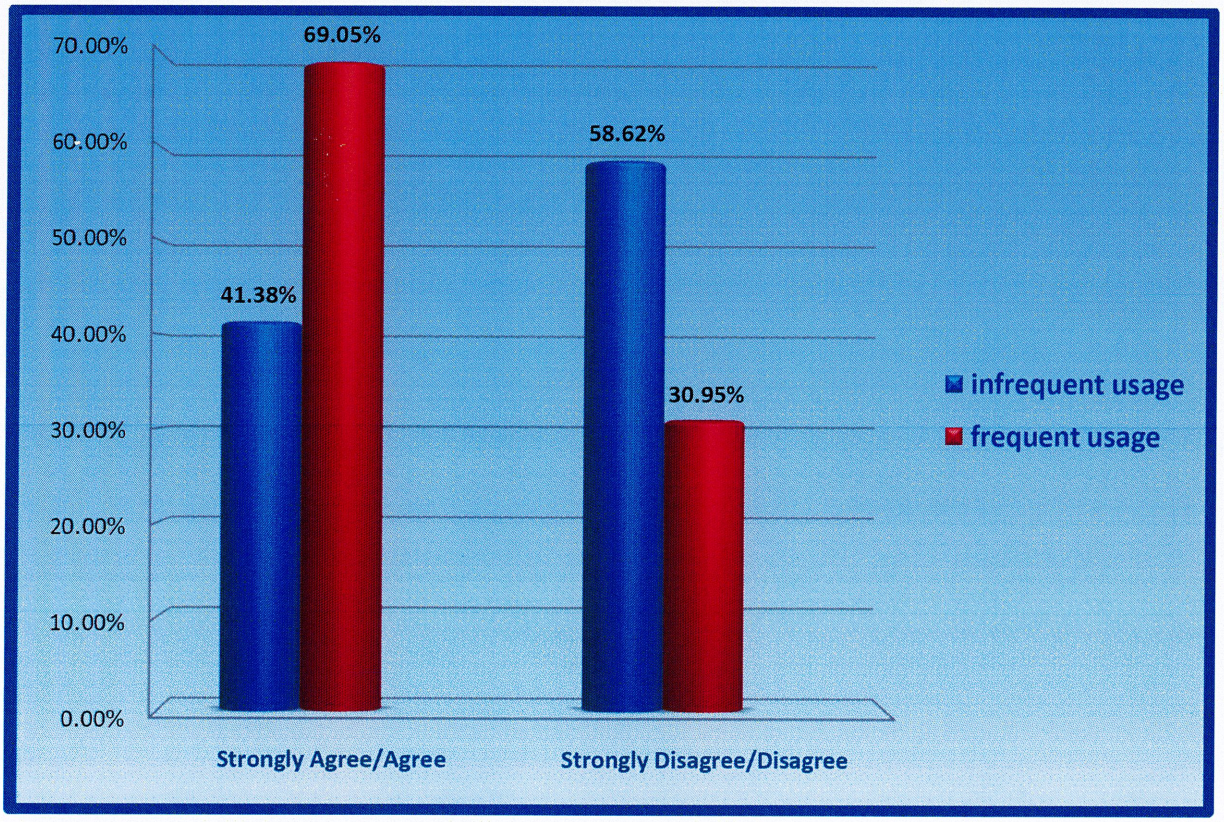
Variances	t-value	df	2-Tail Sig
Equal	-2.48	70	.016

SD=standard deviation, SE=standard error, df=degrees of freedom

Mann (1997) completed a technology study of over 4,000 teachers who are employed in the schools of the Mohawk, New York region. In this study, teachers were asked to agree or disagree with the statement: "Computer literacy should be a part of teacher certification." Teachers agreed at a response rate of 3.92, on a Liken scale of 1 through 5 (Mann, 1997). Clearly, the findings of this study are congruent with the Mann findings. However, it must be noted that the Mann study encompassed over 4,000 teachers who instruct many levels of education (elementary through high school).

Figure 4.3, supplements table 4.9 by illustrating that 69.05 % of the frequent users agreed with the statement, ***"Expertise on the Internet should be a competency required by the state education department"*** as compared to 41.38% of the intermittent users.

Figure 4.3: Teacher Survey Part 5: Internet and Pedagogy: Question 8: Expertise on the Internet should be a competency required by the state education department.



Upon statistically analyzing the survey statement, ***"I have seen time-on-task improvements from students using the Internet",*** table 4.10 proves that there is a significant difference, where $p<.05$ between the educators who use the Internet less than those who use the Internet more than once per month. The above mentioned survey statement pertains to students increasing ability to attend to tasks due to the addition of the Internet Levene's test for equality

of variances which has a probability of .003 and the 2 tail significance of the unequal variance which has a value of .016. The respondents who use the Internet more than once per month claimed that they have seen time-on-task improvements from students using the Internet.

Table 4.10: Teacher Survey Part V: Internet and Pedagogy: Question 10: I have seen time-on-task improvements from students using the Internet

Variable	# of cases	Mean	SD	SE of Mean
Internet Use <Ix per month	24	-.7500	.989	.202
Internet Use> Ix per month	34	-.0294	1.218	.209

Levene's Test for Equality of Variances: F= 9.671 p= .003

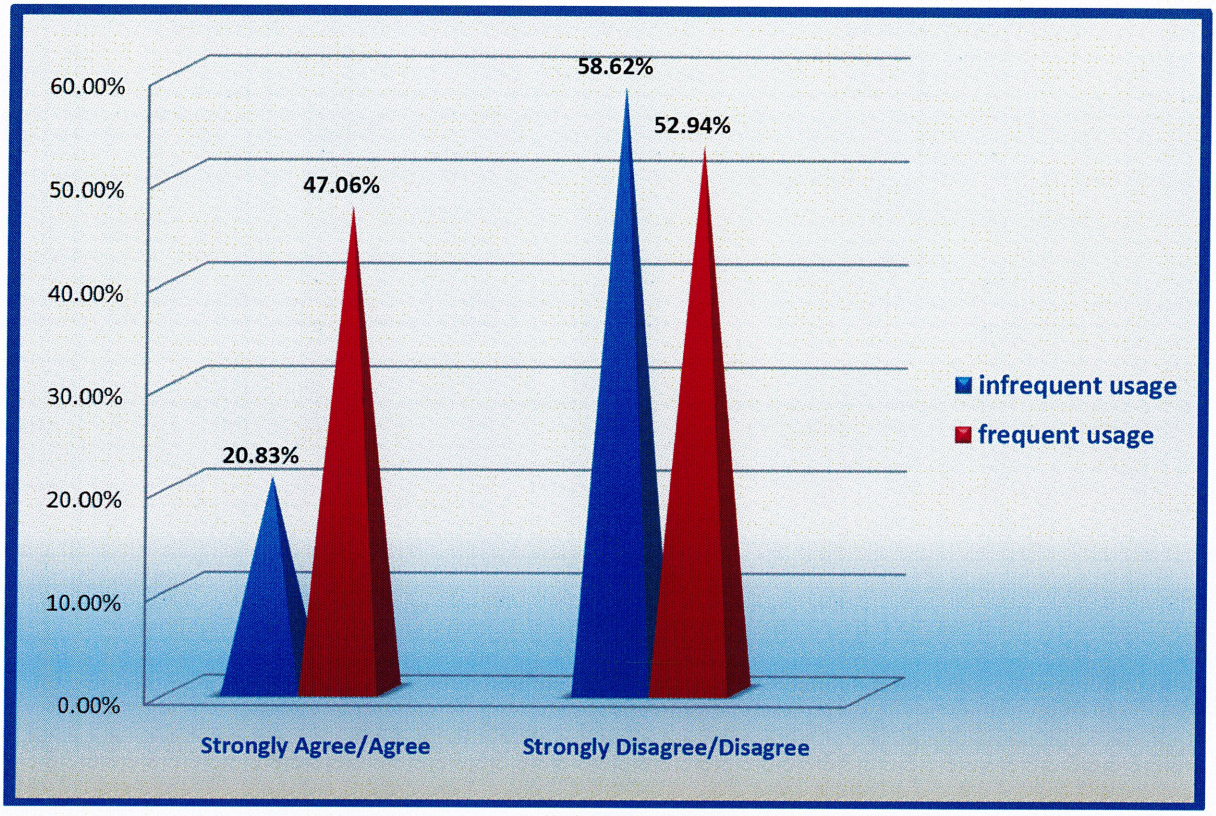
Variances	t-value	df	2-Tail Sig	SE of DifT
Unequal	-2.48	54.82	.016	.291

SD=standard deviation, SE=standard error, df=degrees of freedom

Mann (1997), in his technology study of the Mohawk region schools, asked teachers to respond to the following statement, I have seen time-on-task improvements from students using computers." On a Likert scale of I through 5, teachers agreed with the above statement, at a level of 3.22 (Mann, 1997). Though Dr. Mann's study assessed computer versus Internet impact, the positive results attained are similar to the responses received from the current study.

Figure 4.4, which supplements table 4.11 shows that 47.06% of the frequent Internet users at Busiteen Primary School as compared to 20.83% of the infrequent users reported that they either strongly agree or agree with the statement, "I have seen time-on-task improvements from students using the Internet .

Figure 4.4: Teacher Survey Part 5: Internet and Pedagogy: Question 10: I have seen time-on-task improvements from students using the Internet.



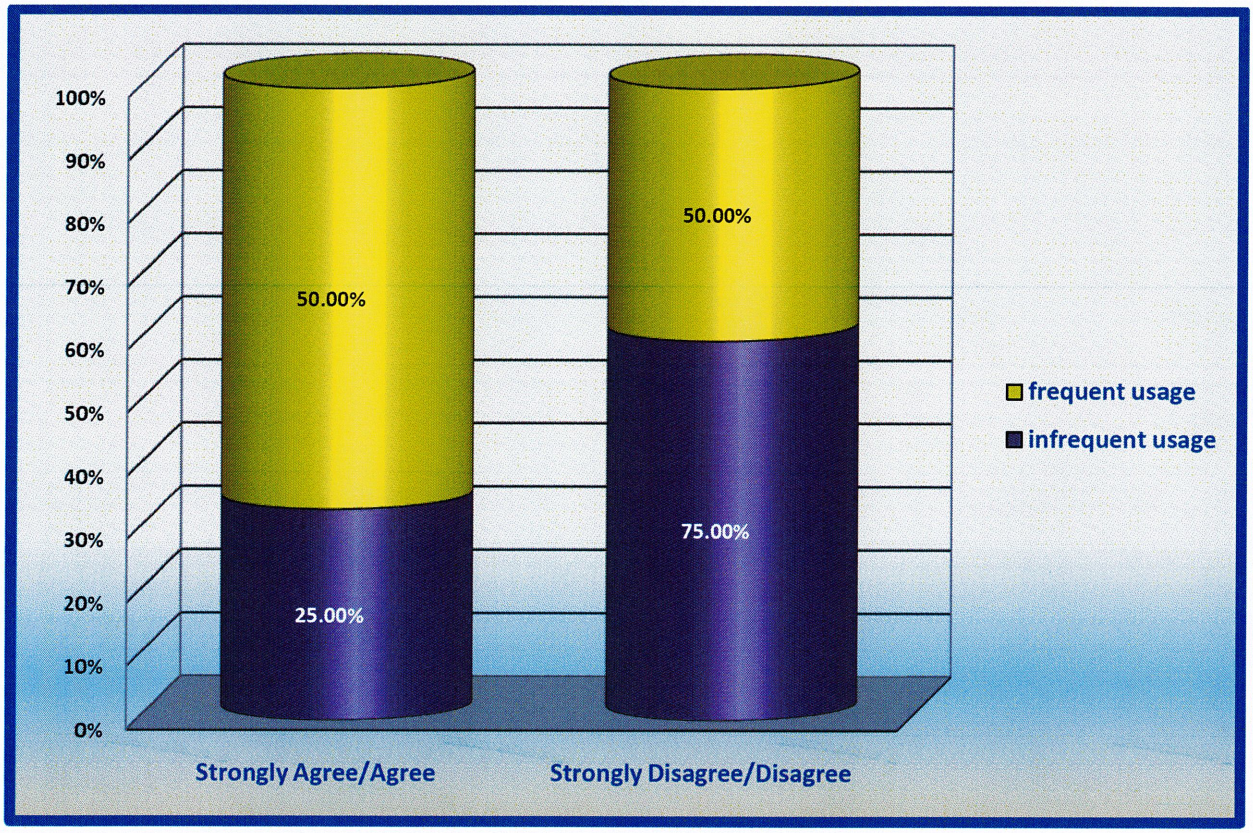
After statistically analyzing the statement, ***"Time spent with the Internet takes away from needed direct instruction",*** table 4.11: shows that there is a significant difference, where $p<.05$ between the educators who use the Internet less than those who use the Internet more than once per month in regard to this item. Levene's Test for equality of variances has a probability of .013 and the 2 tail significance of the unequal variance has a value of .043. Most of the respondents who use the Internet less than once per month, don't feel that time spent with the Internet takes away from direct needed instruction.

. Table 4.11: Teacher Survey Part V: Internet and Pedagogy: Question 11: Time spent with the Internet takes away from direct needed instruction

Variable	# of cases	Mean	SD	SE of Mean
Internet Use <Ix per month	28	-.5357	1.036	.196
Internet Use> Ix per month	40	.0250	1.187	.188
Levene's Test for Equality of Variances: F= 9.671			p= .003	
Variances	**t-value**	**df**	**2-Tail Sig**	**SE of DifT**
Unequal	-2.07	62.76	.043	.271
SD=standard deviation, SE=standard error, df=degrees of freedom				

Figure 4.5, which supplements table 4.12, denotes that 75% of the infrequent users strongly disagree or disagree with the statement, ***"Time on the Internet has taken away from direct needed instruction,"*** as compared to 50% of the continual users.

Figure 4.5: Teacher Survey Part 5: Internet and Pedagogy: Question 11: Time spent with the Internet takes away from direct needed instruction.



Upon statistically analyzing the statement, ***"Internet connectivity should be a low priority at Busiteen Primary School",*** table 4.12 establishes that there is a significant difference, where p<.05 between the educators who use the Internet less than once per month versus those who use the Internet more than once per month in regard to this item.

Levene's test for equality of variances has a probability of .032 and the 2 tail significance of the unequal variance has a value of .009. The majority of the respondents who use the Internet less than once per month feel that Internet connectivity should be a low priority.

Table 4.12: Teacher Survey Part 5: Internet and Pedagogy: Question 17: The Internet never move much beyond drill-and-skill.

Variable	# of cases	Mean	SD	SE of Mean
Internet Use <Ix per month	29	-.6897	1.039	.193
Internet Use> Ix per month	43	-1.2558	.581	.089

Levene's Test for Equality of Variances: F= 6.607 p= .012

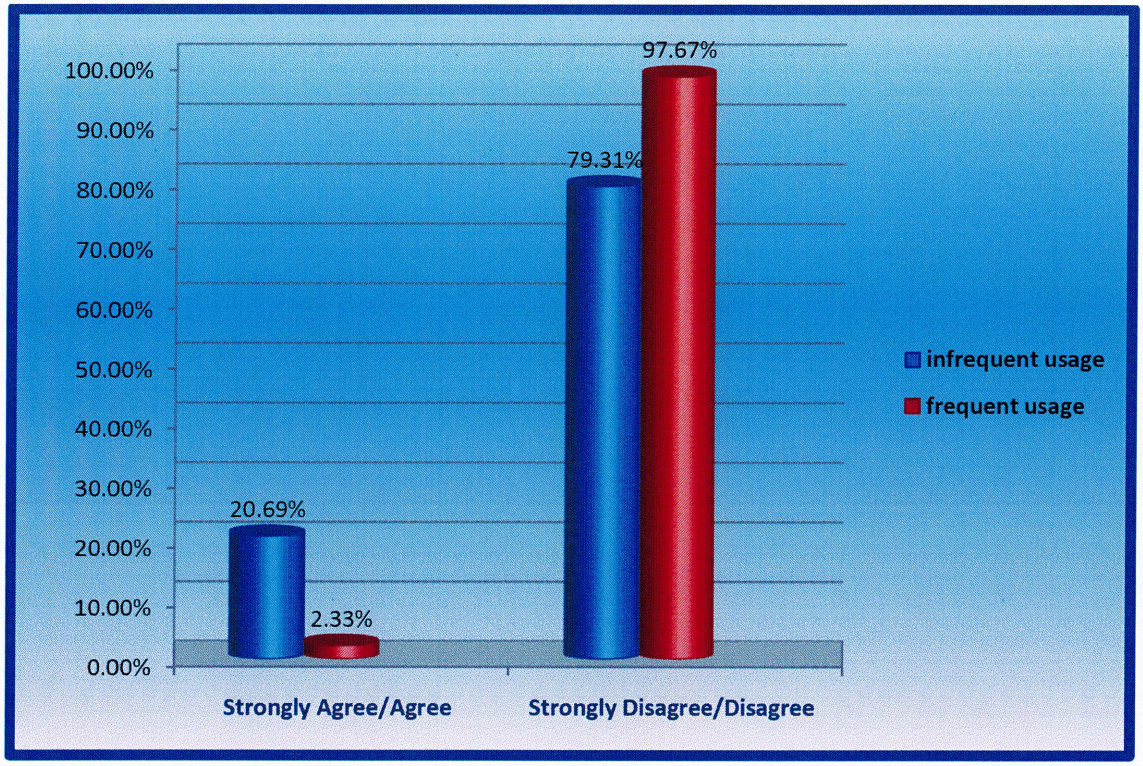
Variances	t-value	df	2-Tail Sig	SE of DifT
Unequal	2.67	39.89	.011	.212

SD=standard deviation, SE=standard error, df=degrees of freedom

Mann (1997) asked teachers to respond to the following statement, ***"Computers will never move beyond drill-and-skill",*** On a Likert scale of 1 through 5, teachers strongly disagreed at a rate of 1.66, where 1.0 establishes strong disagreement (Mann, 1997). The negative response to the above mentioned statement appear to be strikingly similar to the results achieved by the current study. There is a possibility that the development of computers post 1997 at the time of the Mann study has led to teachers seeing an opening up of possibilities beyond what was available in the classroom of the late 1990's.

Figure 4.6, which supplements table 4.14, demonstrates that 2.33% of the continual Internet users strongly agree or agree with the statement, ***"The Internet will never move much beyond skill-and-drill"*** as compared to 20.69% of the less frequent users. Yet, frequent and intermittent users either strongly disagreed or disagreed with the above statement, at a rate of 97.6% and 79.31 % respectively.

Figure 4.6: Teacher Survey Part V: Internet and Pedagogy:Question 17: The Internet wil never move much beyond drill-and-skill.



For the statement, ***"I have seen students creativity increase with the addition of the Internet"***, table 4.13: establishes that there is a significant difference, where p<.05 between the educators who use the Internet less than versus those who use the Internet more than once per month. Levene's Test for equality of variances has a probability of .670 and the 2 tail significance of the equal variance has a value of .000. The respondents who use the Internet more than once per-month responded that they have seen students' creativity increase with the addition of the Internet.

Table 4.13:Teacher Survey Part V: Internet and Pedagogy: Question 18: I have seen students' creativity increase with the addition of the Internet.

Variable	# of cases	Mean	SD	SE of Mean
Internet Use <Ix per month	26	-.5385	1.104	.216
Internet Use> Ix per month	38	.5789	1.081	.175

Levene's Test for Equality of Variances: F= .184 p= .670

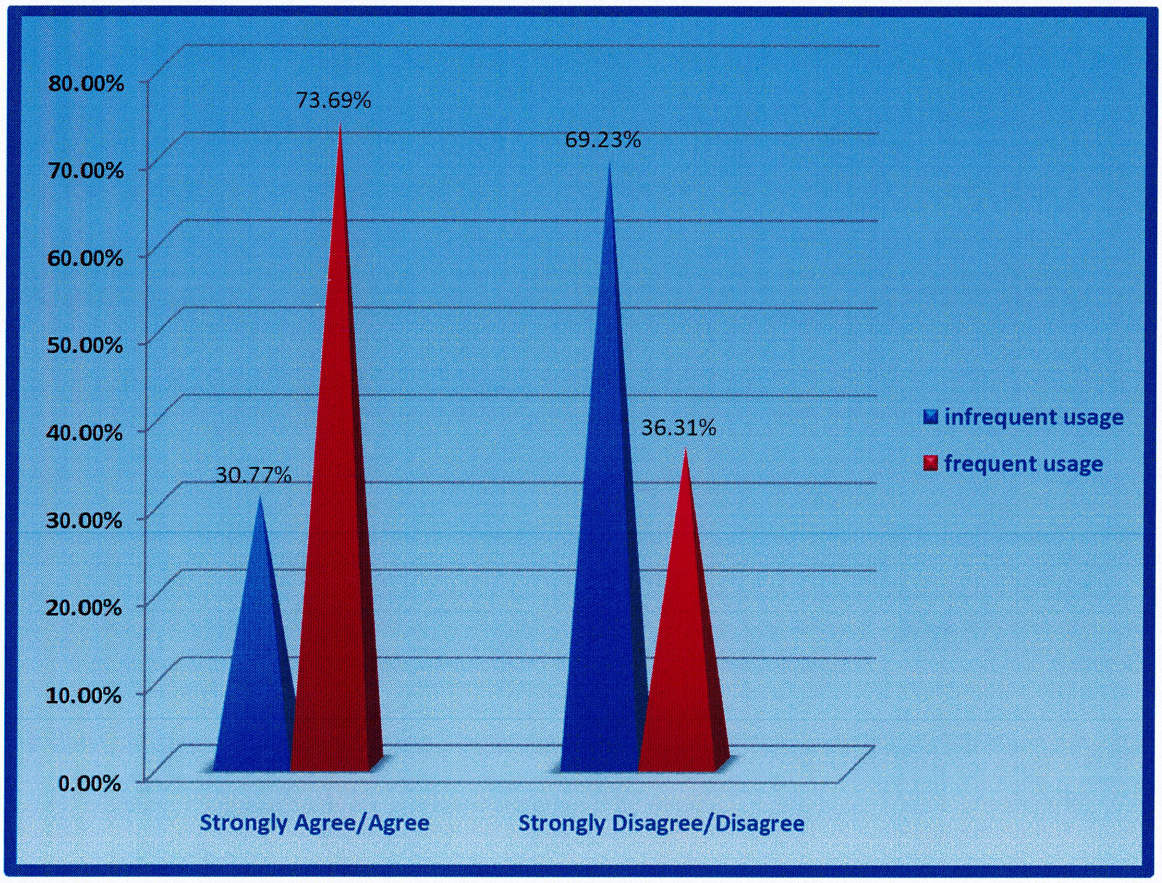
Variances	t-value	df	2-Tail Sig	SE of DifT
Unequal	-4.03	62	.000	.278

SD=standard deviation, SE=standard error, df=degrees of freedom

Mann's (1997) study asked teachers of the Mohawk Valley region to respond to the statement ***"I have seen students' creativity increase with the addition of computers",*** Using a Liken scale of 1 through 5, teachers agreed at a response rate of 3.31 to the above mentioned statement (Mann, 1997). The responses received to the previously mentioned statement are similar to the current study.

Figure 4.7, which supplements table 4.15, illustrates that 73.69% of the continual users responded that they strongly agree or agree with the statement, ***"I have seen students' creativity increase with the addition of the Internet,"*** as compared to 30.77% of the intermittent users.

Figure 4.7: Teacher Survey Part 5: Internet and Pedagogy: Question 18: I have seen students' creativity increase with the addition of the Internet.



Patterns of Agreement: Frequent versus Infrequent Internet Users

Figure: 4.8 shows that 78.57% of the continual users strongly agree or agree with the statement, "***The Internet has positively changed my views on the role of educational technology in the classroom***", as compared to 51.73% of the infrequent users. A statistically significant difference was not established between the two types of users, yet, more than 50% of both groups concurred with the preceding statement.

Figure 4.8: Teacher Survey Part 5: Internet and Pedagogy: Question 1: The Internet has positively changed my views on the role of educational technology in the classroom.

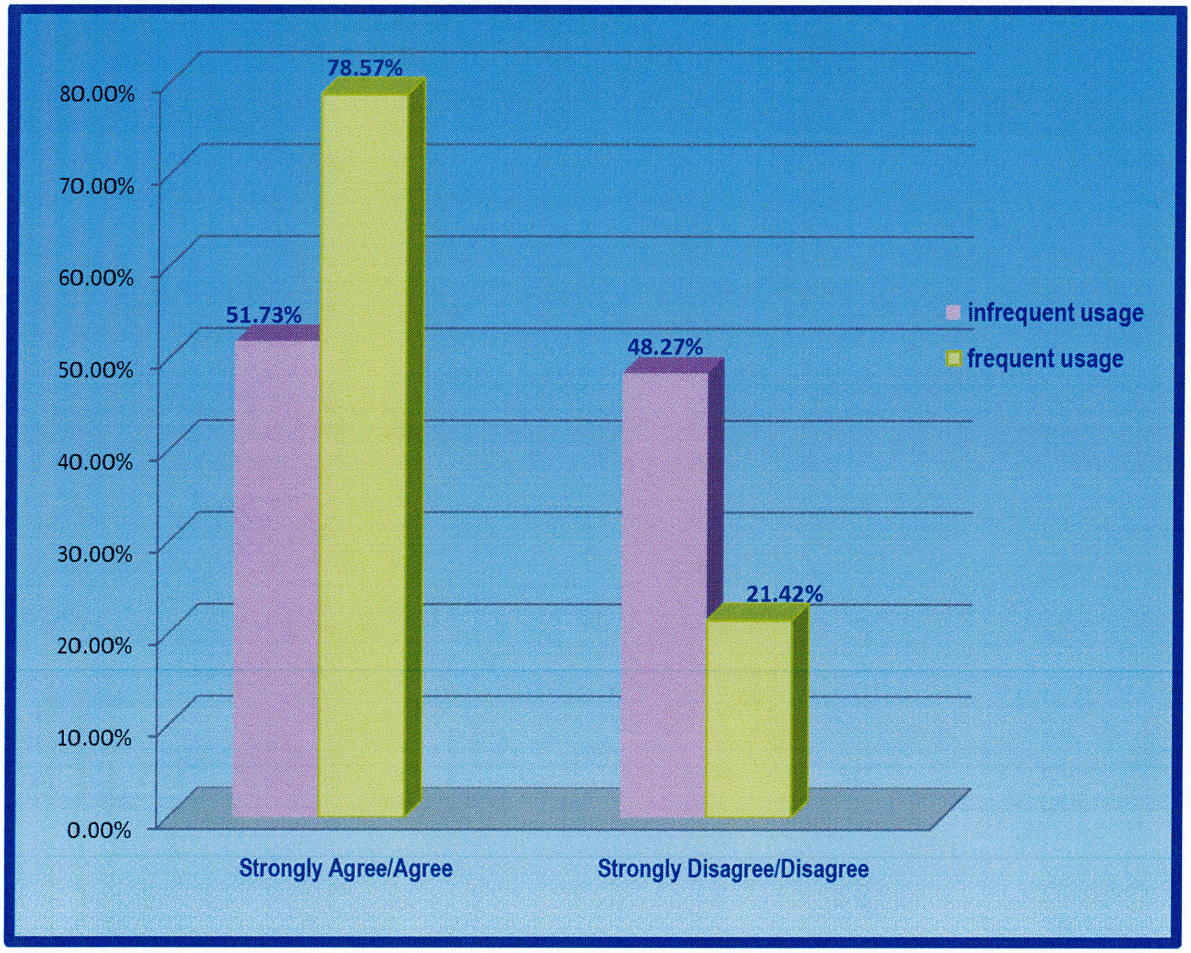


Figure: 4.9 establishes that 90.7% of the continual Internet users strongly agree or agree with the statement. ***"Students should be encouraged to explore other Internet writers viewpoints or perspectives"***,as compared to 93% of the intermittent users. A significant difference was not confirmed for these two groups. Yet their patterns of agreement with the above mentioned statement is clearly evident

Figure 4.9: Teacher Survey Part V: Internet and Pedagogy: Question 4: Students should be encouraged to explore other Internet writers viewpoints or perspectives.

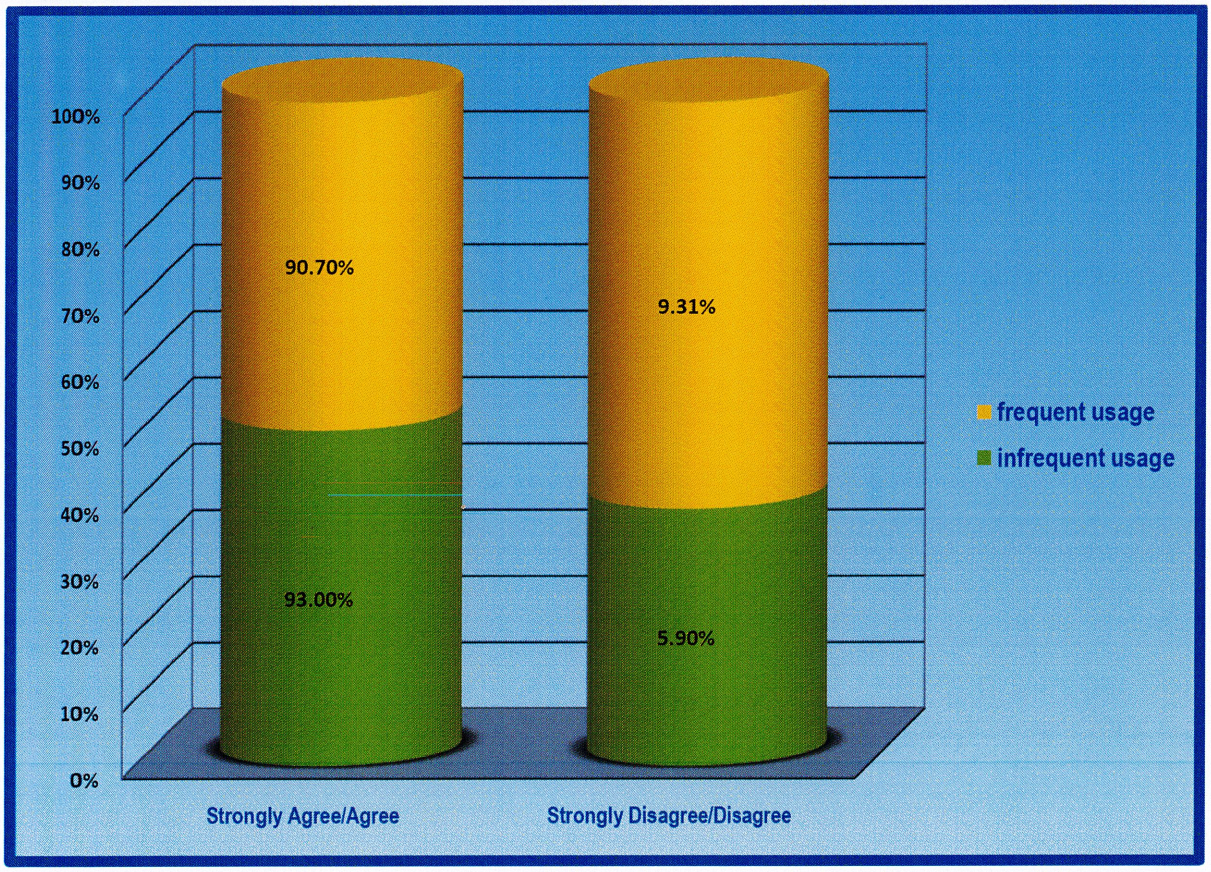


Figure: 4.10 establishes that 96.67% of the frequent users and 85.35% of the infrequent users strongly agree or agree with the statement, ***"Students should be encouraged to develop their own perceptions or understanding of new information derived from the Internet"***, A statistically significant difference was not established between the two groups; yet, their agreement concerning the above mentioned statement is apparent.

Figure 4.10: Teacher Survey Part 5: Internet and Pedagogy Question 5: Students should be encouraged to develop their own perceptions or understanding of new information derived from the Internet.

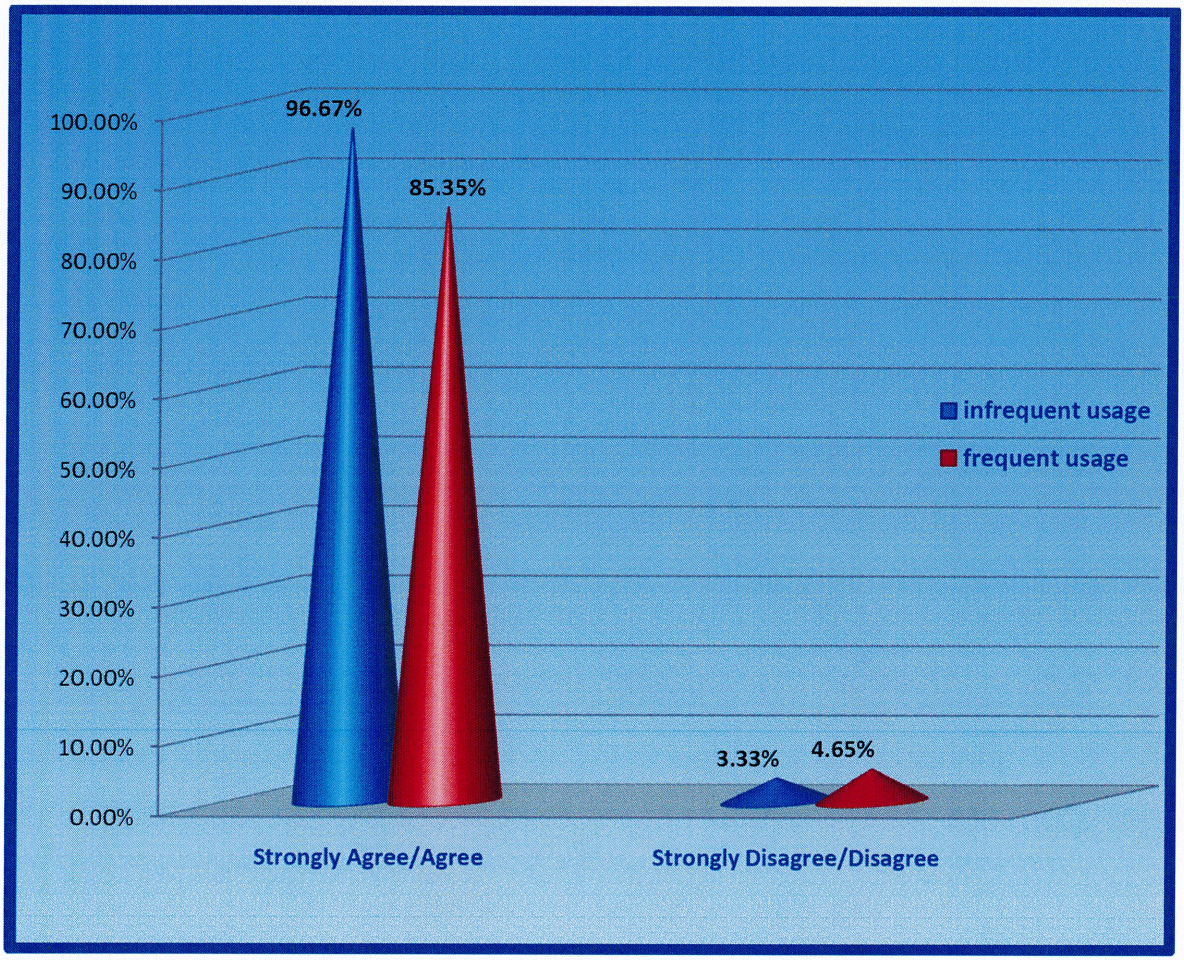


Figure 4.11: illustrates that 90.69% of the continual users and 96.55% of the infrequent users strongly agree or agree with the statement, "***Students should be encouraged to inquire about individual Internet writers viewpoints rather than immediately rejecting or discarding it".*** A statistically significant difference between the two groups has not been established, yet their accordance with the above statement is evident.

Figure 4.11: Teacher Survey Part 5: Internet and Pedagogy: Question 6: Students should be encouraged to inquire about individual Internet writers viewpoints rather than immediately rejecting or discarding it.

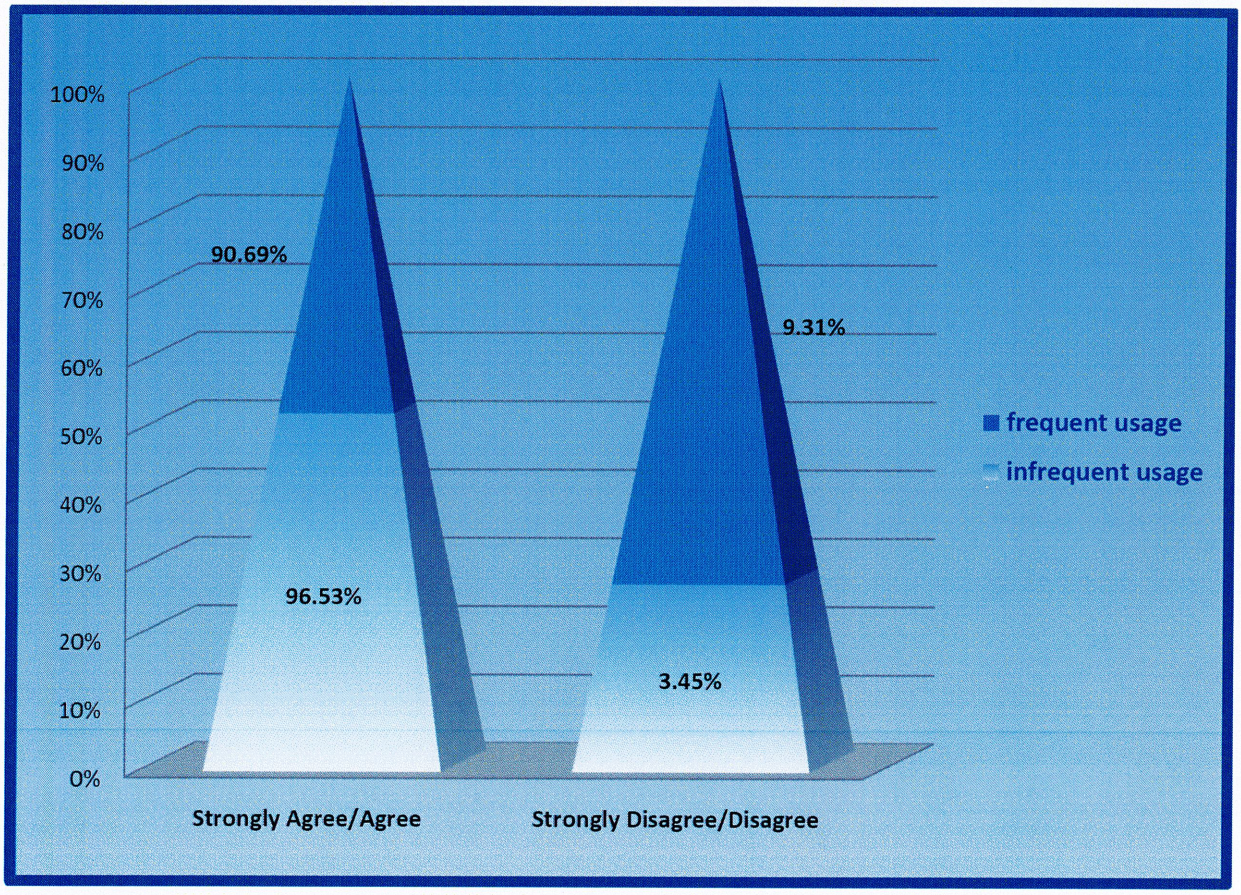
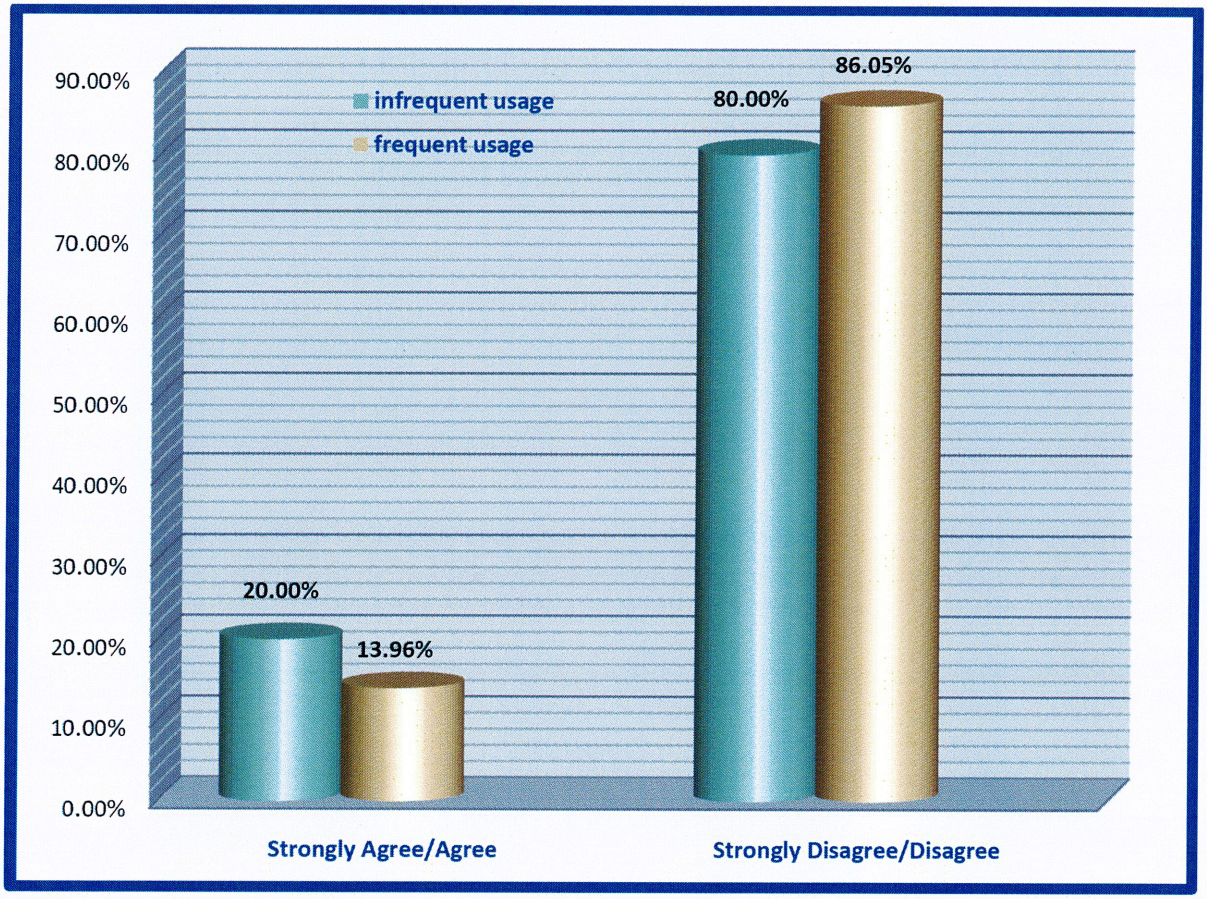


Figure 4.12 shows that 86.05% of the frequent users and 80% of the infrequent users strongly disagree or disagree with the statement, ***"The Internet in education is a fad".*** A statistically significant difference between the two groups was not established, yet, there was a consensus of disagreement to the above statement.

Figure 4.12:Teacher Survey Part 5: Internet and Pedagogy: Question 12: The Internet in education is just another fad.



Mann (1997), asked over 4.000 teachers in the Mohawk Valley region to respond to the statement ***"Students computer proficiency decreases the authority of the teacher".*** On a Likert scale of I through 5, teachers responded at a rate of 1.75, where 1.0 represents strong disagreement (Mann, 1997). Though Mann addresses computer versus Internet impact, the responses to that study are remarkably similar to the current study.

Figure 4.13 illustrates that 93.02% of the continual users and 100% of the infrequent users strongly disagree or disagree with the statement, ***"Students proficiency with the Internet decreases the authority of the teacher".*** A statistically significant difference was not established between the two groups, yet, a consensus of disagreement was established for the above statement.

Figure 4.13: Teacher Survey Part 5: Internet and Pedagogy: Question 13: Students proficiency with the Internet decreases the authority of the teacher.

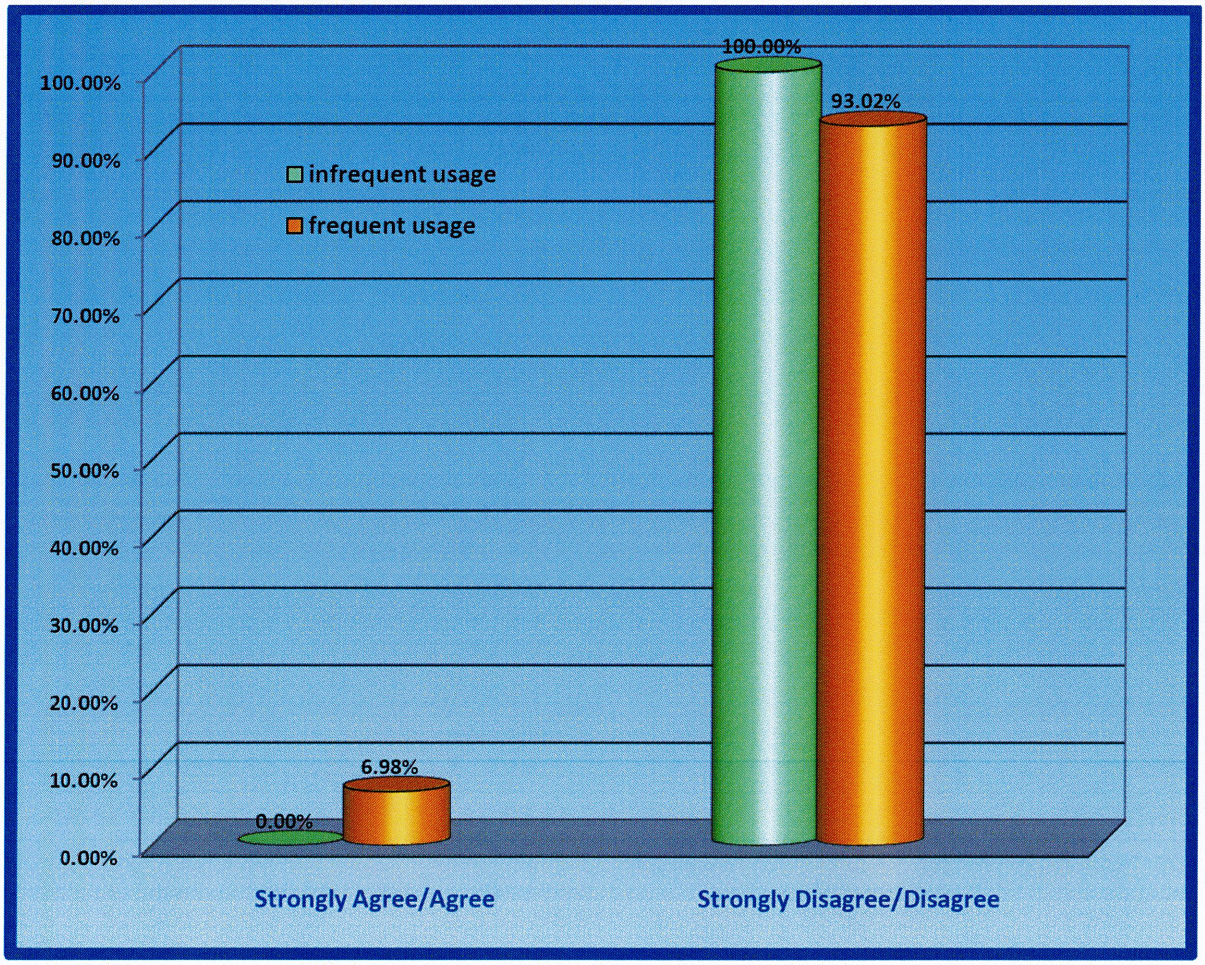
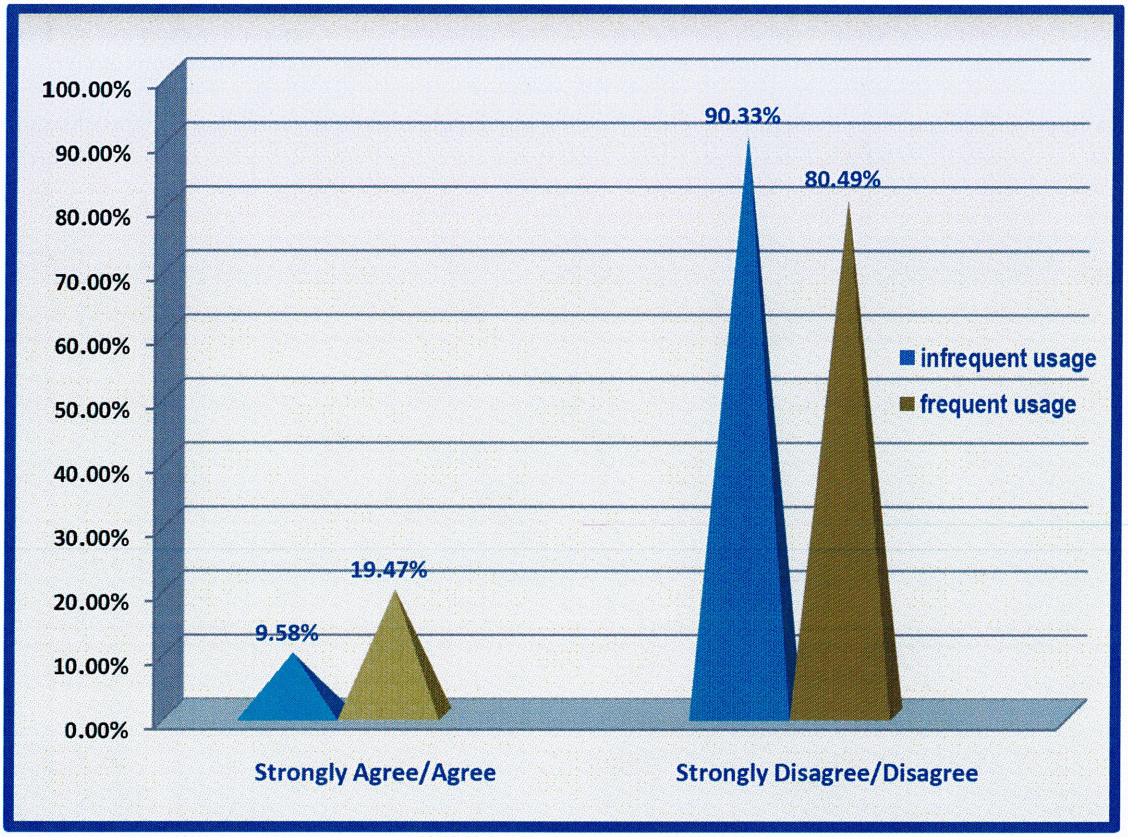


Figure 4.14 shows that 80.49% of the continual Internet users and 90.33% of the intermittent users strongly disagreed or disagreed with the statement, ***"Funds currently spent on the library should be used for the Internet".*** A statistically significant difference was not established between the two groups in response to this statement. However, in response to this statement, there was a consensus of disagreement between the teachers that use the Internet less than once per month and those that access it more than once per month. However, some curriculum areas such as Literature may well see themselves as 'defenders' of the library and books, other departments may be more amenable to moving budget away from traditional books.

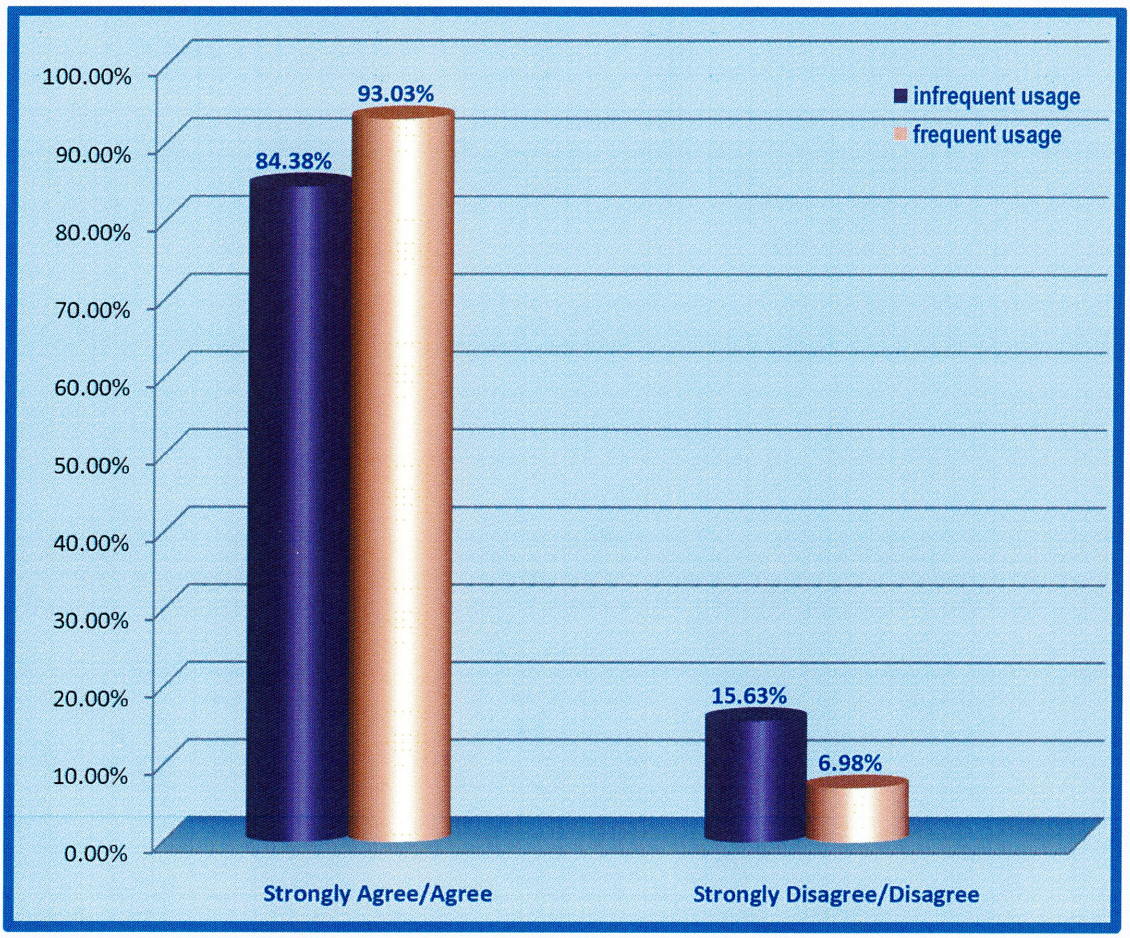
Figure 4.14: Teacher Survey Part 5: Internet and Pedagogy: Question 14: Funds currently spent on the library should be used for the Internet.



Mann (1997), asked teachers to respond to the following statement, ***"Teachers need more computer related training".*** On a Likert scale of 1 through 5, teachers agreed at a rate of 3.92 (Mann, 1997). Mann studied the impact of technology on educators and this researcher studied the impact of the Internet on teachers, there is a similarity of findings that is notable.

Figure 4.15 illustrates that 93.03% of the frequent users and 84.38% of the infrequent users strongly agree or agree with the statement, "***Teachers should have more skills-based Internet training***". This survey statement has not yielded a statistically significant difference between the two types of users, yet, there appears to be positive unison in regard to the above statement.

Figure 4.15: Teacher Survey Part 5: Internet and Pedagogy: Question 19: Teachers should have more skills-based Internet-related training.



12 Busiteen Primary School teachers, a group comprised of those who often rarely and never use the Internet were interviewed. The following are the results of those interviews:

4.3 Responses to Structured Interviews of Busiteen Primary School Teachers

"Typical" Internet Activity used with Students: The Busiteen Primary School teachers who state that they use the Internet on a daily basis predominantly describe cooperatively designed teacher facilitated lessons. They described their students as being ***"actively engaged"*** in Internet activities that they use with their students. Furthermore, they described lessons that are transdisciplinary (they encompass more than one subject area). One teacher described downloading current weather maps and tracking storms. Another teacher spoke of a semester long Internet kaleidoscope project; A third teacher described an Internet "Black Sea Quest" which was undertaken in order to trace scientists in the field. A fourth teacher spoke about assisting students in creating the Busiteen Primary School World Wide Web home page.

Integrating the Internet into the Curriculum: Teachers were asked, ***"what does the statement integrating the Internet into the curriculum mean to you?".*** In response to this question, there was a distinctive difference between frequent users and teachers who have never used the Internet.

The frequent users described the Internet as being part of the curriculum or even embedded into it. Teachers who use the Internet frequently stated responses such as: ***"The Internet is another research tool,"***

- "It drives the curriculum"
- "It improves upon the curriculum"
- "It means connecting kids to other kids"

It was not apparent to the teachers who never use the Internet how the Internet could be a part of the curriculum. They stated responses such as:

- "The Internet will never be integrated into the curriculum"
- "It has a place in the curriculum, but I'm not sure what that is"
- "That statement has no meaning to me"

How has the presence of the Internet affected your teaching?

In response to the above mentioned question, again there was a distinct difference in responses between the frequent versus the occasional user of the Internet.

It appears that the frequent users felt that the presence of the Internet has positively affected their teaching. Teachers who often use the Internet commented in the following manner:

- "I view the Internet as another tool for research,
- "I lecture less, I concentrate on the big picture because of the Internet"
- "It is a saving grace,"
- "It has enhanced my teaching"
- "It has opened up a new vista."

Mann (1997) asked teachers at one high technology school, "How has the presence of computers affected your teaching"? The current study is concerned with the impact of the Internet versus computers on teachers. Yet, responses received by Dr. Mann were remarkably similar to those received from the continual users of the Internet at Busiteen Primary School. During Mann's interviews, teachers responded with statements such as:

- "Computers are merely a tool"
- "Computers level the academic playing field"
- "With computers, teachers can be a guide on the side" (Mann, 1997).

For the Busiteen schoolteachers who never use the Internet, the presence of the Internet has not affected their teaching. They responded to the above mentioned questions with comments such as:

- "The Internet has not affected my teaching"
- "Having it or not has not affected me"
- "It has not affected me, but I see its potential"

How has the presence of the Internet affected how you view education?:

In answering this question, the responses of the Busiteen Primary School teachers who use the Internet daily, less frequently and the non-users were remarkably similar. Most of the teachers that were interviewed feel that the Internet has, or will have, a positive impact on education.

The daily Internet users view the Internet as:

- "Positive, it helps kids learn on their own"
- "It provides instant access to current research"
- "Lets you do real things"
- "It's a tool, it doesn't replace the teacher, though."

The less frequent and non-users responded with statements such as:

- "Every kid should have access"
- "It hasn't affected how I view education now, but it will in the future"
- "It provides kids with more resources."

Do you feel that using a percentage of the school budget on internet is justified when there are other demands for money within the school? Are there other things you think kids need even more than exposure to technology, if so, what?

In responding to this question, the responses of the Busiteen schoolteachers who use the Internet daily, less frequently and the non-users were very similar. Most of the teachers interviewed thought that money spent on connectivity can be justified considering the Internet's sweeping impact on society.

Most of the respondents did not mind spending a large percentage of school budget on the Internet," but many were concerned (as were the administrators interviewed) about competing priorities. Teachers stated comments such as:

- "We also need texts, but we have to ensure equitable Internet access"
- "Other things are being overlooked"
- "There has to be a balance"
- "Other things are being overlooked, like values training."

Teachers who were not concerned with **"competing priorities"** stated comments such as:

- "1 am in favor of spending money on the Internet
- "Spend it, get a lot advantage issue"
- "We have to spend it to ensure access for all kids"
- "It's the way to go"
- "The Internet can supplant the physical textbook."

4.4Summary of Key Findings of Research

Research question 2 asks, ***"What level and kind of Internet technology incorporation into the pedagogical strategies of teachers has occurred at Busiteen Primary School?".*** This question can be related to the survey questions regarding constructivism theory. For many of these questions, there proved to be a significant difference or agreement of responses between the Busiteen Primary School teachers who use the Internet frequently as compared to those that use it less than once per month.

Table 4.14 depicts constructivism terms and their related survey statements. Table 4.14 further illustrates the survey statements which sustained a significant difference between the Busiteen Primary School teachers who use the Internet frequently versus those who use it occasionally.

Table 4.14: Constructivism Term and Related Survey Statement: Significant Differences between Frequent versus Occasional Users

Constructivism Term	Survey Statement
Generativity	• I assist my students in understanding new information they have learned from the Internet.
Ownership	• I am committed to developing new and meaningful Internet classroom activities for my students.
Personal Autonomy	• During Internet activities in my classroom, my role is to act as facilitator, as opposed to a direct provider of information.
Transformation	• The Internet has positively changed my views on education. • I have seen time-on-task improvement from students using the Internet • I have seen students increase their creativity with the addition of the Internet.

Table 4.15: displays survey statements, related to specific constructivism terms in which there were patterns of agreement between continual and infrequent users of the Internet.

Table 4.15: Constructivism Term and Related Survey Statement: Patterns of Agreement between frequent versus occasional users

Constructivism Term	Survey Statement
Multiple Perspectives	• Students should be encouraged to explore and inquire about Internet writers viewpoints or perspectives.
Personal Relevance	• Students should be encouraged to develop their own perceptions or understanding of new information from the Internet
Pluralism	• Students should be encouraged to inquire about individual Internet writers viewpoints rather than immediately rejecting or discarding it
Transformation	• The Internet has positively changed my views on the role of educational technology in the classroom.

The qualitative data analysis which was composed of the interview, also supported many of the constructivism terms. The frequent users who were interviewed spoke of Internet activities that encompassed many of the terms associated with constructivism theory, namely, active engagement, collaboration, authenticity, complexity, generativity, ownership, personal autonomy and transformation. This was evidenced when teachers declared statements such as: "The Internet is a saving grace," "It has opened a new vista for me," etc.

Research question 3 asks: ***Which Personal Factors influence Internet usage of teachers at Busiteen Primary School*** (i.e. gender, age, professional involvement, department leadership, level of education, years of teaching, subject area instruction) ?

To establish statistically significant differences between personal factors and Internet usage, the respondents answers were analyzed through the use of a chi-square for categorical variables (i.e.: gender) or a t-test for continuous variables (i.e: years of teaching).

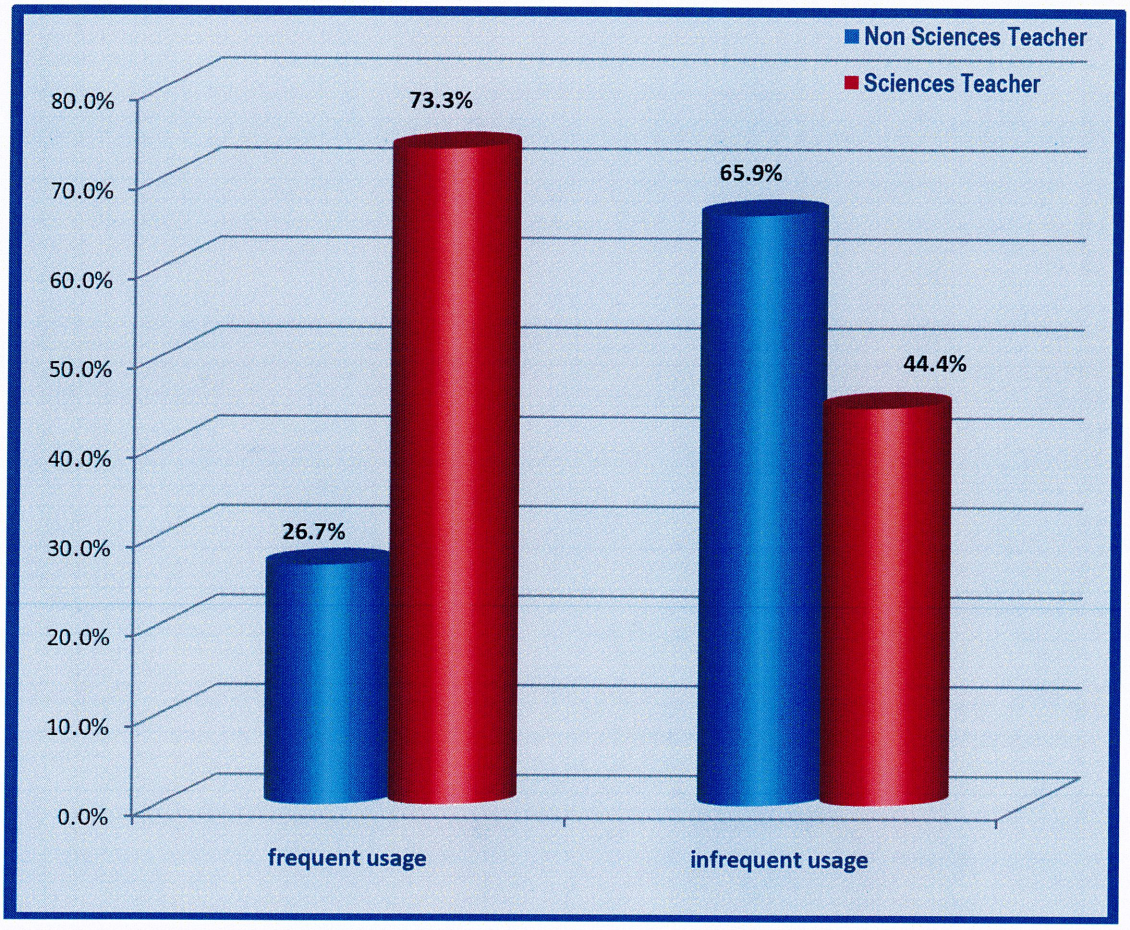
4.5Significant Differences: Personal Factors and Internet Usage

Subject area instruction, one of the personal factors mentioned above, proved to have a significant difference in three areas of Internet usage. Subject area instruction was divided into teachers of the sciences versus non-science. Teachers of the sciences included the subject areas of mathematics, science, naval science, business and technology.

In examination of the likelihood ratio on the chi-square test, a significant difference of .00965 where, $p < .05$, was denoted on the personal factor of accessing the Internet at school and subject area instruction.

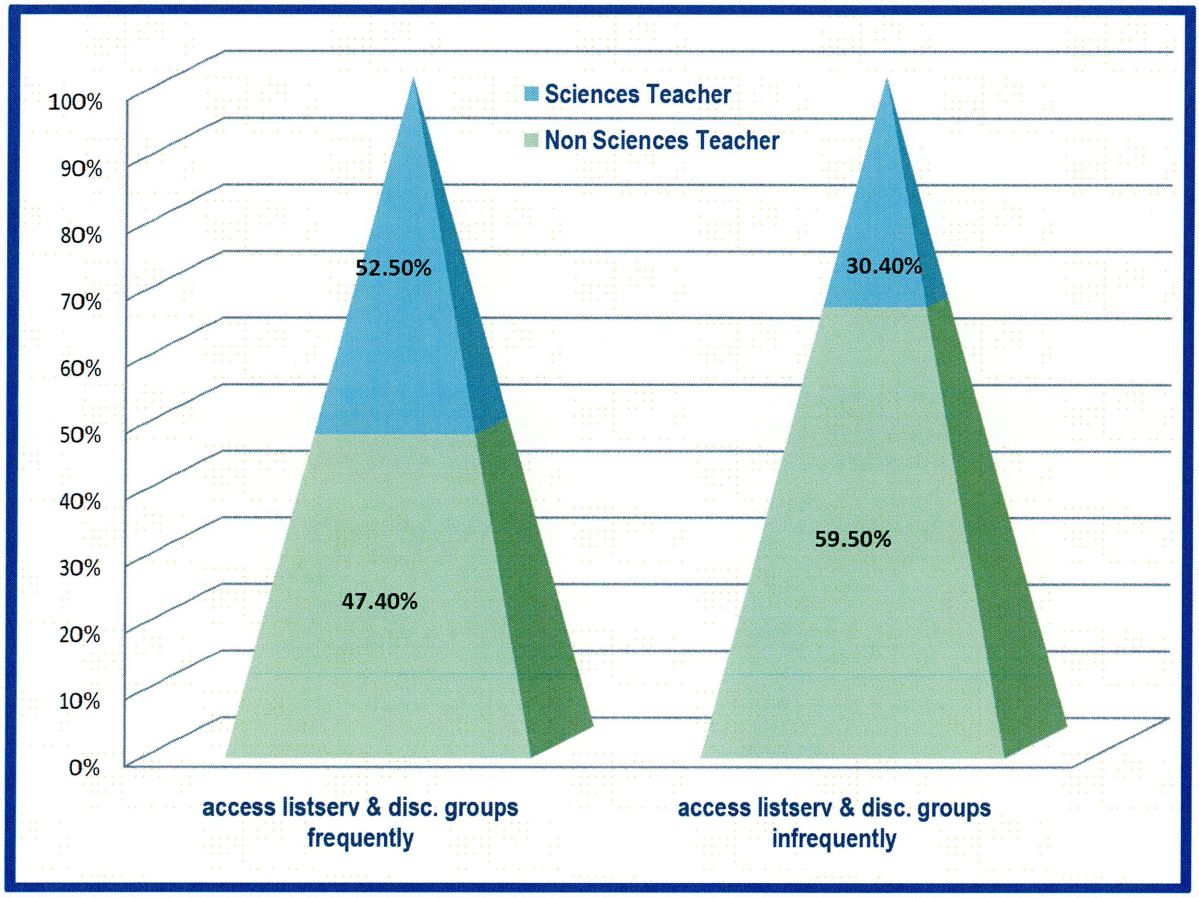
As shown in figure 4.16, of the respondents, 73.3% of the science teachers at Busiteen Primary School reported that they use the Internet more than once per month as compared to 44.4% of the non-science teachers.

Figure 4.16: Internet Usage: Busiteen Primary School Science Teachers versus Non-Science Teachers



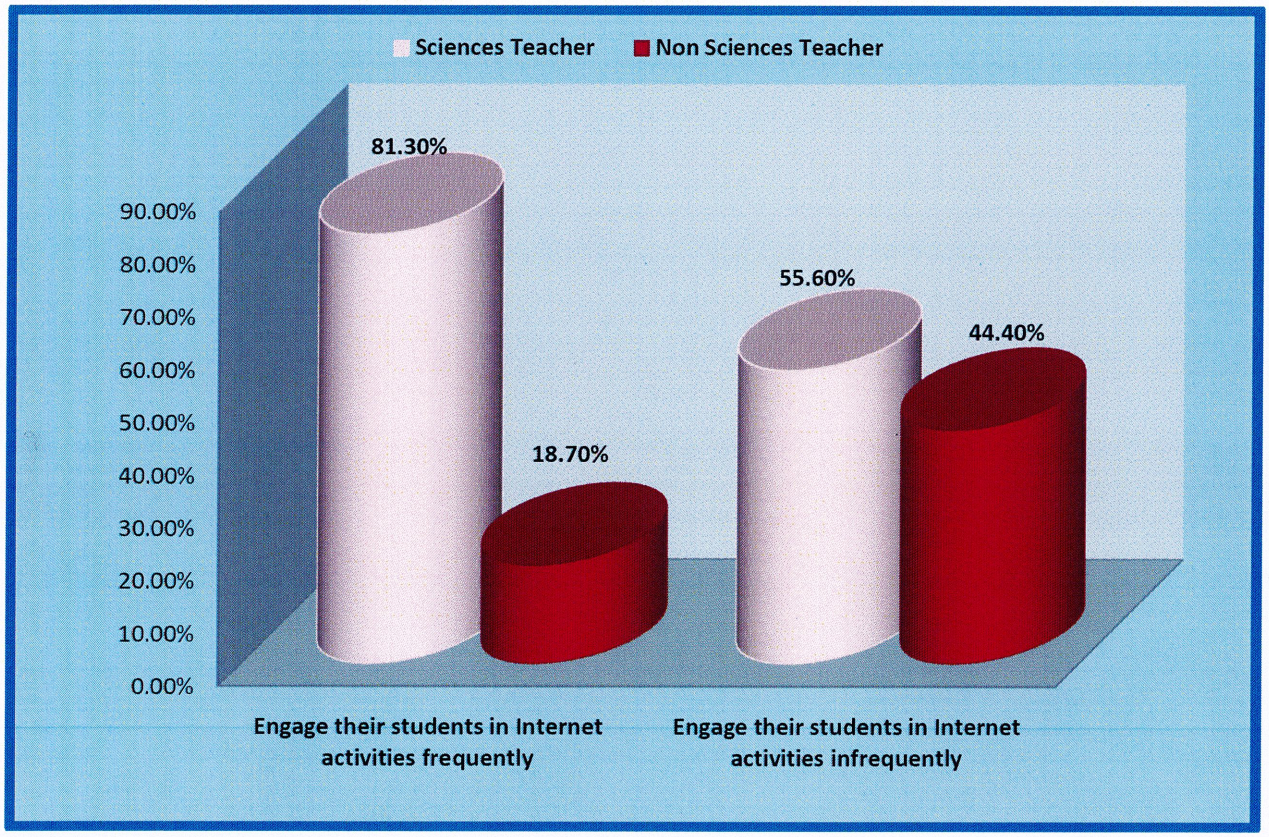
On examination of the likelihood ratio on the chi-square test, a significant difference of .0038 where $p < .05$, was denoted on the personal factor of communicating with people on list servs and discussion groups at school and subject area instruction. As shown in figure 4.17, 52.6% of the Busiteen Primary School science teachers surveyed claimed that they use the Internet to access listserv and discussion groups more than once per month as compared to 30.4% of the non-science teachers.

Figure 4.17: ListServ, Discussion Group Usage: Busiteen Primary School Science versus Non-Science teachers



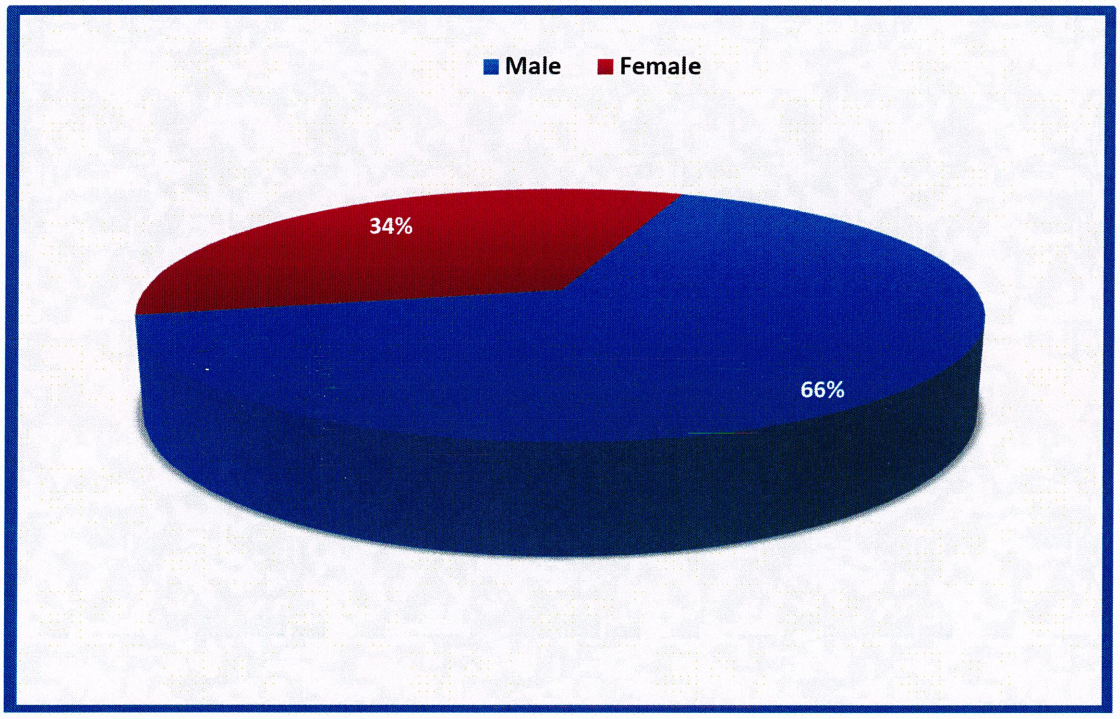
On examination of the likelihood ratio on the chi-square test, a significant difference of .03798 where $p < .05$ was denoted on the Personal Factor of engaging students in Internet activities and subject area instruction. As shown in figure 4.18: 81.3% of the science teachers at Busiteen Primary school reported that they engage their students in Internet activities more than once per month, as compared to 55.6% of the non-science teachers.

Figure 4.18: Student Internet Activities: Busiteen Primary School Science versus NonScience teachers



On examination of the likelihood ratio on the chi-square test, a significant difference of .00949, where p <.05, was denoted on the personal factor of personal usage of the Internet and gender. This data denotes that males in this sample appear to use the Internet for personal reasons more often than women. As denoted in figure 4.19,66 % of the male teachers at Busiteen Primary School stated that they use the Internet more than once per month for personal reasons as compared to 34 % of the female teachers. The personal reasons were non specific, but may include personal emails, shopping or any number of internet linked pastimes, including online games such as *Warcraft* which have a strong male following.

Figure 4.19: Internet Personal Use: Busiteen Primary School Male versus Female Teachers



4.6 Personal Profile of Infrequent Internet User

Figures 4.16, 4.17 and 4.18 above, illustrated the significant difference of Internet usage rates between the science versus the non-science teachers. The non-science teachers appear to use the Internet significantly less than the science teachers.

Yet, figure 4.19 establishes that there is not a significant difference between the male and female teachers at Busiteen Primary School, who responded to this survey and amount of Internet usage. It appears that there is almost an equal distribution of Internet usage rates amongst the female versus male users of the Internet from the Busiteen School Primary school teachers surveyed. It cannot be qualified whether the "typical" Internet user is male or female.

The one exception to this statement is that males use the Internet for personal reasons more often than females. This has previously been established in figure: 4.19. Perhaps men as previously noted are more connected into online games which may account for some of this disparity.

Figure 4.19: Gender and Internet usage amongst frequent versus infrequent users of the Internet

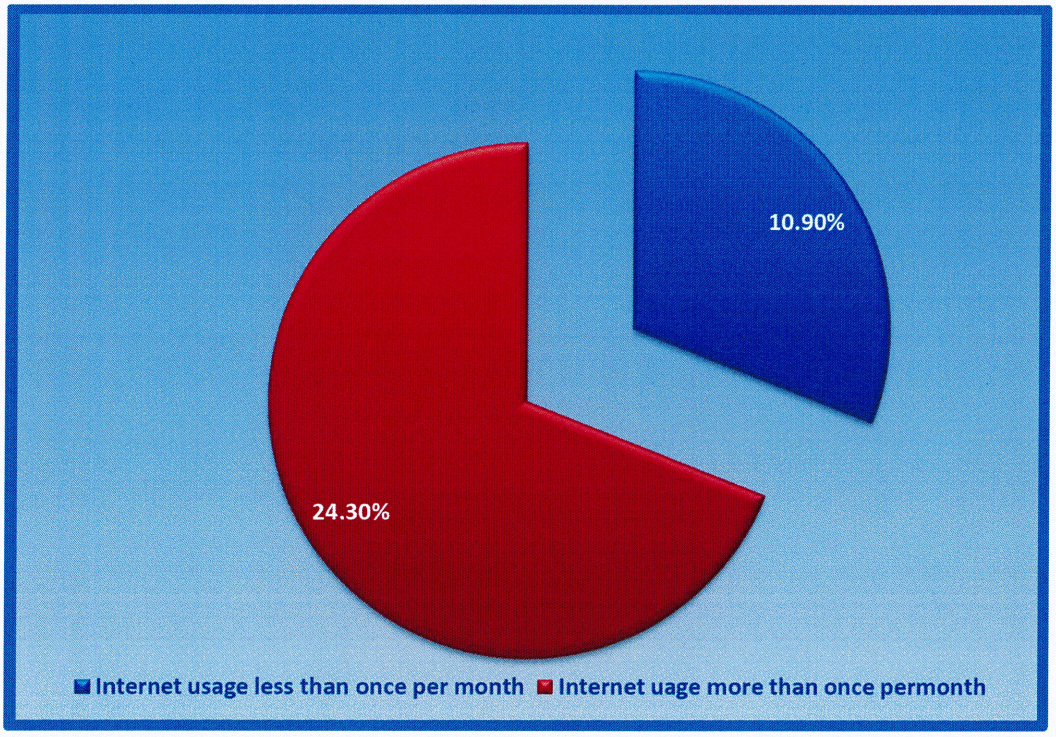


Figure 4.19 denotes that 24.3% of the Busiteen Primary School teachers who are in the age group of 20 through to 40 use the Internet more than once per month. Of the teachers in the same age group, 10.9% use the Internet less than once per month. Therefore, the "younger" teachers at Busiteen Primary School appear to be accessing the Internet more frequently than the occasional user.

Department leadership, years of teaching, as well as level of education also did not sustain a significant difference between both groups of users. The responses to these questions were equally scattered amongst the regular versus the occasional user.

CHAPTER 5 DISCUSSION OF RESULTS

5.1 Discussion of Administrator Interviews

The first question asked by this researcher was: ***"Can you describe your professional use of the Internet"?***

The administrator who uses the Internet on a daily basis describes his/her professional use as an informational instructional tool. The administrator who accesses the Internet less frequently describes his /her professional Internet usage as predominantly for research.

Another question asked by this researcher was: ***"There's a lot of talk about integrating the Internet into the curriculum, What does that mean to you"?***

The daily user stated that it's a tool to develop the curriculum further. The administrator who uses the Internet less frequently described how it can be embedded into the curriculum through activities such as research projects and simulating real life situations.

A final question asked of the respondents was: "***What is your personal feeling about spending all this money on Internet connectivity"?***

Both administrators responded similarly to the above question. They both felt that there is a problem with competing priorities. They both felt that there was a key management issue in whether "you put your limited moneys into Internet connectivity or building more classrooms."

5.2 Summary of Key Findings of Research Questions:

Research question 1 asks, ***"What is the Internet usage of Busiteen Primary School administrators"?*** Since there was a relatively small sample size of these administrators, (8 in total), this researcher chose to qualitatively analyze their responses to the survey. As a result, it can be stated that 50%, or 4 Busiteen Primary School administrators claim to use the Internet at school on a frequent basis. Fifty percent, or 4 administrators state that they access the Internet from home. Similarly, 62.5%, or 5 administrators believe that the addition of the Internet is a positive addition to education at Busiteen Primary School and additional connectivity should be explored, by providing advanced computers to be used by the teaching staff and facilitating their works in all the government schools.

All eight administrators responded to the survey questions asked. Furthermore, this researcher interviewed two of the respondents. Yet, because only eight administrators are employed at Busiteen Primary School, this researcher chose to descriptively analyze their responses.

Four of the administrators claimed to use the Internet at school and home at least once per month. Staff development and office accessibility appear to be factors in their infrequent usage of the Internet. Perhaps if these two issues are resolved, administrators at Busiteen Primary School would use the Internet on a consistent basis.

Even though decisive percentages concerning types of Internet usage could not be drawn from this group of administrators, many do hold strong viewpoints on the role of educational technology in the schools. Five, or 62.5% of the administrators either agreed or strongly agreed with the following statements:

- The Internet has positively changed my view of education.
- I have seen students' time-on-task improve with the addition of the Internet
- The Internet increases student creativity.
- We should encourage students to inquire about other's writings on the Internet.
- The Internet makes teachers better at teaching.

Five or 62.5% of the administrators either disagreed or strongly disagreed with the following statements:

- The Internet is a fad.
- Internet connectivity should be a low priority at Busiteen Primary School.

Strongly held viewpoints such as the statements mentioned above may have significant implications for future Internet connectivity and curriculum incorporation within Busiteen Primary School.

Research question 2 asks, "***What level and kind of Internet technology incorporation into the pedagogical strategies of teachers has occurred at Busiteen Primary School"?*** This question can be related to the survey questions regarding constructivism theory. For many of these questions, there proved to be a significant difference or agreement of responses between the Busiteen Primary School teachers who use the Internet frequently, as compared to those that use it less than once per month.

Table 5.1: depicts constructivism terms and their related survey statements. Table 5.1: further illustrates the survey statements which sustained a significant difference between the Busiteen Primary School teachers who use the Internet frequently, versus those who use it occasionally.

Table 5.1: Constructivism Term and Related Survey Statement: Significant Differences between Frequent versus Occasional Users

Constructivism Term	Survey Statement
Generativity	• I assist my students in understanding new information they have learned from the Internet.
Ownership	• I am committed to developing new and meaningful Internet classroom activities for my students.
Personal Autonomy	• During Internet activities in my classroom, my role is to act as facilitator, as opposed to a direct provider of information.
Transformation	• The Internet has positively changed my views on education. • I have seen time-on-task improvement from students using the Internet • I have seen students increase their creativity with the addition of the Internet.

It is apparent from the statistical analysis of the survey questions, and the interviews undertaken for this research, that the teachers at Busiteen Primary School who frequently use the Internet, are engaging in many types of constructivist activities.

As shown in the chapter four summary, the Busiteen Primary School teachers who use the Internet more than once per month seem to often incorporate constructivist concepts such as: generativity, ownership, personal autonomy and many aspects of transformation into their classroom Internet activities. This can be observed in positive responses to statements such as: ***"I assist my students in understanding new information that they have learned from the Internet." "I am committed to developing new and meaningful Internet classroom activities for my students ".***

The chapter four summary further establishes that there appears to be a pattern of agreement in response to survey questions associated with constructivist concepts such as: multiple perspectives, personal relevance, pluralism and transformation amongst the frequent and infrequent Internet users. This can be demonstrated by both groups positive responses to statements such as: "Students should be encouraged to explore and inquire about Internet

writers viewpoints or perspectives," "Students should be encouraged to develop their own perceptions or understanding of new information from the Internet.".

The interviewing segment of the data analysis also established that most of the frequent Internet users are incorporating constructivist type Internet activities into their lesson planning. When describing Internet tasks, these teachers elaborated on many of the themes regarding constructivism terms such as: active engagement, authenticity, collaboration, complexity, generativity, multiple perspectives, ownership, personal autonomy, reflectivity and transformation. This is evidenced by statements elicited by these frequent users such as, "I lecture less, I concentrate on the big picture because of the Internet," "It has opened up a new vista."

In response to research question three, the teacher who uses the internet frequently at Busiteen Primary School appears to have encompassed a constructivist pedagogy when incorporating the Internet into his/her classroom. Additionally, by observing the patterns of agreement for the infrequent and frequent Internet users, it appears that the infrequent user at Busiteen Primary School is willing to incorporate many of the constructivism concepts into his/her lessons.

Table 5.2: displays survey statements, related to specific constructivism terms in which there were patterns of agreement between continual and infrequent users of the Internet.

Table 5.2 Constructivism Term and Related Survey Statement: Patterns of Agreement between frequent versus occasional users

Constructivism Term	Survey Statement
Multiple Perspectives	• Students should be encouraged to explore and inquire about Internet writers viewpoints or perspectives.
Personal Relevance	• Students should be encouraged to develop their own perceptions or understanding of new information from the Internet
Pluralism	• Students should be encouraged to inquire about individual Internet writers viewpoints rather than immediately rejecting or discarding them
Transformation	• The Internet has positively changed my views on the role of educational technology in the classroom.

The qualitative data analysis comprising of the interview, also supponed many of the constructivism terms. The frequent users who were interviewed spoke of Internet activities that encompassed many of the terms associated with constructivism theory, namely: active engagement, collaboration, authenticity, complexity, generativity, ownership, personal autonomy and transformation. This was evidenced when teachers declared statement such as: "The Internet is a saving grace," or "It has opened a new vista for me"

Research question 3 asks, "***Which personal factors influences the Internet usage of teachers at Busiteen Primary School (i.e: gender, age, professional involvement, professional involvement, department leadership, level of education, years of teaching, subject area instruction)"?***

The personal factor is subject area instruction, namely the subject disciplines of: science, mathematics. business and technology which yielded a significant difference between frequent versus less than once per month usage of the Internet. The statistical analysis of the results showed that the science teachers use the Internet, access listservs, and engage their students in Internet activities almost twice as often as the non-science teachers.

Gender proved to hold a significant difference in the personal use of the Internet. The surveys demonstrated that the male respondents personally use the Internet more than twice as often as the females.

Additionally, it appears that the Busiteen Primary School teachers in the age group of 20 through 40 access the Internet on a more regular basis than the occasional users.

For the personal factor of subject area instruction, data analysis was completed for science versus non-science teachers. Science included the teaching areas of: science, mathematics, business and technology. Non-science included all other subject areas such as: English, social studies, special education, physical education, etc.

Upon analyzing the results, it was observed that the science teachers reported that they use the Internet significantly more often than the non-science teachers in three types of Internet usage, namely: Internet use in general, listserv/discussion groups, and student Internet activities.

In conclusion, the personal factors of subject area instruction, related to general Internet use, listserv/discussion groups and student Internet activities, appear to influence Internet usage amongst the Busiteen Primary School teachers.

The frequent user of the Internet at Busiteen Primary School appears to be some what younger than the intermittent user. The continual user is more likely to be in the age group of 20-40 than the occasional Internet user.

With regard to usefulness of the internet within the classroom, in Chapter One it was indicated that there was a body of opinion that computers were a 'false promise' and actually harmful to the classroom (Oppenhimer, 2003). This is a view supported by the American *Childhood Alliance* on their website and the often quoted line by FORBES editor Stephen Kindel who said "it is the poor who will be chained to the computer; the rich will get teachers." In this research to the question: ***"During Internet activities in my classroom, my role is to be a facilitator as opposed to a direct provider of information,"*** 91.66% of the respondents reported their responses as: "always" or "frequently" showing that the computer does to a large extent negate the position of the teacher as the provider of information, the teacher would appear to 'allow' the computer to take over that role. The teachers' who used the internet a lot spoke in interviews of the internet connecting other kids and driving the curriculum and even though it is clear that internet use was an integral part of their pedagogical practice Oppenhimer (2003) warns that this viewpoint can drain funding away from traditional programs and causes an 'educational drag.' The teachers in the interviews for this research were sometimes unclear of the actual place in the curriculum for the internet and clearly there was a need for training.

Fulton (1998) showed the complete opposite to Oppenhimer, writing that the internet led to highly motivated students at all levels. Kathleen Fulton saw the technology age as one on which the fulcrum of learning would soon turn and looked toward teachers to change their pedagogy in line with the technological change. In my research, for the small number of staff who did not use the internet it naturally did not affect their teaching. However for the frequent user there was an impact into pedagogy with the internet forming a resource that was used especially for research. The staff perception of the internet and the computer as possibly taking away the place of the teacher is notable, but with training keyed into the changing needs of newer technology the window for learning should open up and the teacher should be able to take the leading role delivering that learning.

The great disparity in internet use between science based teachers and non-science based teachers within this research indicates that the technology has had an early impact into the more technologically based subject areas, but the benefits for the internet to support learning in subjects such as history or literature would seem apparent. Software supporting reading, phonics and grammar are all available through the internet, so it is perhaps again a matter of making sure staff have the time to be introduced to new software and begin to incorporate that software/resource into their planning. The internet should not be used as a 'drop in' for 'just look that up' alone, it needs a focus whereby the staff are actively using certain sites and resources to support specific activities, such as those within science and mathematics.

CHAPTER 6 CONCLUSION AND RECOMMENDATION

This study was undertaken in order to answer three research questions. This chapter will present conclusions which are based on the analysis of quantitative and qualitative data. These conclusions will address issues of technological policy recommendations and implications for future research.

6.1 Conclusions

The data collection for this study consisted of surveys and interviews. After analysis of data collected, this is found many significant statistical findings for the research questions that were studied. Research question 2 states: ***"What type of Internet incorporation into the pedagogical strategies has occurred at Busiteen Primary School"?*** This is found that the teachers who use the Internet frequently at Busiteen Primary School appear to encompass constructivist type activities within their classrooms. Since this is did not actually observe educational Internet activities, there may be a discrepancy between what was reported by the teachers at Busiteen Primary School and what is actually occurring in their classrooms. Survey method research can only report what is stated by respondents? It cannot produce a researchers eyewitness account of actual events. Future studies concerning technological impact on educators should include direct observations of classroom Internet activities.

This is has found that constructivism appears to be the reported technological theme within Busiteen Primary School. ***Is the Internet, due to its apparently motivational nature creating an environment that appears to encompass elements of constructivism?*** Or, have the Busiteen Primary School educators embraced a technological constructivist ideology? Again, since this researcher utilized survey method research in order to collect data rather than direct observation, the predominant culture of the school could not be adequately assessed. What was assessed were teacher perceptions of the situation within their own practice. Future research should focus on constructivism as an outgrowth of technological incorporation versus ideology.

Most of the teachers that use the Internet more than once per month at Busiteen Primary School, they engage their students in constructively versus objectively designed Internet activities. These teachers appear to have incorporated a constructivist mindset in their Internet teachings. It appears that the Internet is being used by teachers at Busiteen Primary School for authentic type activities. The frequent Internet users appear to be engaging their students in Internet based lessons that do not resemble "skill-and-drill" type activities. This has vast implications for education at Busiteen Primary School. The initial continuing charges

associated with Internet connectivity at Busiteen Primary School are significant and it is assuring to note that depleting school moneys are being used at Busiteen Primary School for constructive type Internet activities.

Follensbee (1996) studied the effect of Internet access on teachers. Her findings suggest that on-line use changed teachers' perceptions of the role of technology, and their behavior in using it with their students. Teachers with on-line access used computers for more constructivist type purposes. The teachers who had computers without on-line access used them as teaching devices, or for more skill-and-drill type purposes (Follansbee, 1996). Therefore, if teachers are asked to encompass authentic type technological activities in their classrooms, we must ensure that they all have appropriate and equitable Internet access.

Serendipitously, there was a pattern of agreement amongst the Busiteen Primary School teachers who use the Internet less than once per month and those who use it more than once per month for statements such as:

- "I have seen students creativity increase with the addition of the Internet"
- "Students should be encouraged to inquire about Internet writers statements before immediately rejecting or discarding it..."

The infrequent Internet user at Busiteen Primary School concurred with many statements like the ones noted above, that can be associated with constructivist theory. By observing the positive responses to the statements denoted above, it appears that the infrequent Internet user at Busiteen Primary School is willing to incorporate many of the concepts associated with constructivism into his/her teaching. Therefore, we must ensure that access and other obstacles associated with Internet usage are not deterring these teachers from using it. Since the majority of infrequent Internet users at Busiteen Primary School agree that many of the concepts of constructivism should be embedded into Internet teachings, we must ensure equitable access for all teachers.

To ensure financial as well as other types of support for continuing Internet connectivity/accessibility at Busiteen Primary School, the educators and the public of Busiteen Primary School must first determine the effects of the Internet on the students it serves. Has the deliverance of more constructively designed Internet activities impacted on the students at Busiteen Primary School, if so, how? Is there agreement amongst the key players within the Busiteen school Central School District that the incorporation of constructivism in teaching is an important priority? These are important technological policy issues that should be addressed.

6.2 Technological Policy Recommendations

As a result of the findings of the research questions, there are several technological policy recommendations:

1. **Connectivity:** The Busiteen Primary School Internet teacher survey established that this is a group of educators who are using the Internet to a significantly greater extent. At the time of writing, Busiteen Primary School is in the top 92% of Internet connectivity and accessibility. The School has five labs, 18 classrooms and 9 academic offices connected to the Internet At present, it has greater Internet connectivity and accessibility than most high schools in the region. Yet, most of these teachers surprisingly stated that their greatest obstacle to Internet usage is connectivity and accessibility. This has important policy implications for education regarding the incorporation of the Internet into classrooms. Teachers need Internet connectivity and accessibility if they are to incorporate it into their teachings. All teachers should be able to access the Internet from their individual classrooms. Although of course this was research into perceptions from staff, and staff perception may not be bourne out by evidence. The perception remains valid, but one sided.

   According to the Busiteen school Central School District Superintendent and the School Board. the school has incorporated up-to-date learning technology, textbooks and teaching techniques into our curriculum; organized schools to make the best use of time, personnel, community resources and taxpayer funds; put programs in place to encourage all students to attain high academic standards and to help all children learn to the very best of their abilities (Busiteen schoolSchool District Superintendent, and School Board Members, 1996). The teachers and administrators at Busiteen Primary school need classroom Internet connectivity if they are to ensure that "all children learn to the very best of their abilities." The statement cited above by the Busiteen School District Superintendent and School Board Members, implies school board commitment to Internet classroom connectivity. To ensure that all teachers and their students are able to equitably access the Internet from their classrooms at Busiteen Primary School, continuing support for classroom accessibility should be evident.

2. **Administrative Issues:** Busiteen Primary School administrators are not all presently using the Internet. Administrators should serve as role models for teachers in terms of their ability to demonstrate and assist teachers in the productive educational uses of the Internet.

   The school administrator is a key player in assessing student knowledge and ensuring increasing educational standards. He/she is the instructional leader.

Administrators should be able to demonstrate for teachers how the Internet can be integrated into the curriculum for purposes of increasing educational standards. Furthermore, administrators should be able to assist the teacher in assessment of Internet activities employed in the classroom.

Mann (1997) states, "the same logic that recommends training for teachers applies to principals, if principals are to act as master teachers" (Mann, 1997). Most administrators stated that office connectivity was the greatest obstacle to their Internet usage. If administrators at Busiteen Primary School are to serve as master teachers, then it is important to ensure that Internet connectivity and training issues are not deterrents.

3. **Training:** There are policy implications associated with Internet staff development and training at Busiteen Primary School. Most of the respondents stated that they have had Internet staff development training. A majority of these respondents felt that they needed more Internet skill based training. Therefore, before allocating additional moneys to Internet training, teacher needs must be adequately assessed. It would appear that Busiteen Primary School teachers are in need of staff development that addresses curriculum based issues. Yet, before staff development is implemented, teachers should be surveyed to determine their present Internet staff development needs.

4. The science teachers at Busiteen Primary School use the Internet to a greater extent than the other subject area teachers. This information has educational policy implications for Busiteen Primary School. The science classrooms have greater Internet connectivity than the non-science classrooms. As of the present writing, Busiteen Primary School has 13 science classrooms (comprised of science, mathematics, business and technology) and 5 non-science classrooms (all other subject areas combined) with Internet connectivity. Therefore, it appears that there are subject area equity issues at Busiteen Primary School.

5. Telecommunications and computer background were highly correlated with many different types of Internet usage amongst the Busiteen Primary School teachers. This has technological educational implications for educators at Busiteen Primary School. We need to ensure that educators are exposed to different types of telecommunications in order for them to incorporate it into their teachings.

6. The Internet as well as other forms of technology are constantly evolving which has implications for funding as computers need replaced every few years or they become obsolete.

   Educators as well as other individuals struggle to stay abreast of current advancements. Many of the teachers at Busiteen Primary School who frequently use the Internet felt that they have comprehension (understanding), technical and time issues associated with Internet usage. This has educational implications for incorporating future technologies into the school. Even though these problems continued to plague the frequent Internet users, this did not deter these teachers from consistently using the Internet. Yet this researcher wonders if the frequent Internet users at Busiteen Primary School will continue to use the Internet in spite of their comprehension, technical and time related difficulties? We must ensure that technical problems as well as issues of comprehension (understanding) and time are resolved or alleviated for the Busiteen Primary School teachers who use the Internet

6.3 Recommendations for Future Research

Based on the findings of the research questions, there are several recommendations for further research:

7. A current national survey of educators, especially Primary schoolteachers who use the Internet needs to be conducted. The last national survey related to this topic was completed in 1993 by Honey and Henriquez. This survey was only administered to highly technologically advanced educators. Furthermore, there have not been any national surveys conducted of the Primary schoolteacher who uses the Internet.

8. A current national survey of school administrators who use the Internet needs to be conducted. As of this writing, national statistics on Internet usage by administrators does not exist. Hence, this researcher was unable to contrast the Internet usage rates of Busiteen Primary School administrators with national statistics.

9. As the Internet continues to expand into the schools, further research into the types of activities that are being utilized by teachers should be conducted. Constructivist type Internet lessons should be defined and contrasted to objectively developed activities. Additionally, research should be conducted on the assessment of constructively designed Internet activities.

10. This study found that the science teachers use the Internet to a greater extent than the non-science teachers. This is probably due to the greater Internet connectivity in the science versus the non-science classrooms. This researcher is recommending that this finding should be explored further. Even though the Internet can be readily used for nonscience subject areas, will other researchers also conclude that there are possible issues of subject area equity at other schools?

    Sproull (1988) found that the percentages of surveys returned via electronic mail was significantly higher than through regular mail. This is has not found this to be the case. In fact, only 11 % of the surveys were returned by electronic mail. The use of electronic mail for educational surveys should be explored further. Perhaps we will find that in the future, electronic mail will become as automatic for educators as "checking their mailboxes."

11. In the future weeks, months, and years ahead, technology will continue to expand into educational institutions. Future research should focus on the structural factors that may serve as educational obstacles or motivators to these new technological advancements.

REFERENCES

1. Brown, D (2009) The Lost Symbol, Transworld, London.

2. Burgess T. 2001, A General Introduction to The Design of Questionnaires and survey research [Online], http://www.leeds.ac.uk/iss/documentation/top/top2.pdf

3. Cohen, L, Manion, L & Morrison, K (2000) *Research Methods in Education* (5th Edition) London, Routledge Falmer.
4. Davidson, J (1970) Outdoor recreation surveys: The design and use of Questionnaires for Site Surveys. London, Countryside Commission.
5. Department for Education and Skills (2002) *'The Impact of Information and Communication Technologies on Pupil Learning and Attainment'* London, DES.
6. Drever, E (1995) *Using Semi-Structured Interviews in Small Scale Research,* Glasgow, The Scottish Council for Research in Education.
7. ESCWA (2007) *'Profile of the Information Society in the Kingdom of Bahrain,'* Online Report: http://isper.escwa.un.org/Portals/0/National%20Profiles/2007/Bahrain-07-E.pdf for the United Nations. [site access November 2011)
8. Fox, E. (2005). Tracking U.S. trends. *Education Week, 24*(35), 40–42. ,http://www.edweek.org/ew/articles/2005/05/05/35tracking.h24.html [site access November 2011]
9. Fulton, K (1998) *'A Framework for Considering Technology's Effectiveness,'* Centre for Learning and Educational Technology, University of Maryland Research Paper, Retrieved Online: http://www.doe.in.gov/olt/pdf/appresearchkful.pdf [Access November 2011]
10. Gould, M (23rd September 2008) 'Brown Promises Internet access for all children,'Guardian UK, http://www.guardian.co.uk/education/2008/sep/23/elearning.schools [Access July 2012]
11. Higgins, S (2001) 'Does ICT Improve Learning and Teaching in Schools?' Newcastle University Research Project, Retrieved Online: http://www.bera.ac.uk/files/reviews/ict-pur-mb-r-f-p-1aug03.pdf [Access November 2011]
12. Kramorski, B & Feldon, Y (2000) 'Internet in the Classroom: Effects on reading comprehension, motivation and metacognition,' *Educational Media International*, Vol. 37. No.3 pp.149-155
13. Mumtaz, S & Hammond, M (2002) 'The Word Processor re-visited: observations on the use of the word processor to deliver literacy at Key Stage 2,' British Journal of Educational Technology, Vol. 33 No.3 pp.345-347
14. O'Sullivan, M.L. & Samarawickrema, G (2008) Changing learning and teaching relationships in the
Educational technology landscape,'
Internet Source: http://www.ascilite.org.au/conferences/melbourne08/procs/osullivan-poster.pdf [site access November 2011]
15. Offutt, E.R & Offutt, C.R. (1996) *'Practical Tips and Activities for the Elementary Classroom,'* New Jersey, Good Apple Publishing.
16. Oppenhimer, (2003) *'The Flickering Mind: The False Promise of Technology in the Classroom, London, 2003.*

17. Ortega, M & Bravo, J (2000) '*Computers and Education in the 21st Century*,' London, Kluwer Academic Publishers

18. Pollard, A (2005) '*Reflective Teaching*,' (2nd Edition) London, Continuum.

19. Pritchard, A (2007) *Effective Teaching with Internet technologies: Pedagogy and Practice*, London, Paul Chapman Publishing.

20. Riordan, T. (1993) '*Beyond the Debate: The Nature of Teaching,*' Milwaukee: Alverno College Institute.

21. Shelly, G.B, Cashman, T.J, Gunter, T.J & Gunter, R.E. (2007) '*Integrating Technology and Digital Media in the Classroom* (5th Edition) Boston, Thomas Learning.

22. Stephens, P & Crawley, T (1994) '*Becoming an Effective Teacher*,' London, Nelson Thornes.

23. Ureigho, R.J.& Oroke, R.G & Ekruyota, G.O (2007) 'The Impact of Internet Usage: A Case Study of Delta State Tertiary Institutions' European Journal of Scientific Research Vol.16 No.4, pp.606-610

24. Valcke, M, Schellens, T, Van Keer, H, & Gerarts, M (November 2007) 'Primary School Children's Safe and Unsafe use of the Internet at home and at School: An Exploratory Study,' Journal of Computers in Human Behaviour, Volume 23 Issue 6.

25. Youngman, M.B. (1984) Designing Questionnaires. In J Bell, T Bush, A. Fox, J. Goodey & S. Goulding (eds) 'Conducting Small Scale Investigations in Educational Management,' London, Harper & Row, pp.156-176.

APPENDIX A: SURVEY QUESTIONS SCHOOL TEACHERS:

Dear Colleague:

Your school is in the forefront of educational technology and I will be showcasing your school in my research. This is a request for your honest opinion to the attached survey, regarding "The Impact of the Internet in the Government Primary schools".

The survey will take you approximately 10-15 minutes to complete. There are no rights or wrong answers. Your responses will be kept strictly confidential and are to be used for Internet usage analysis.

Upon completion, please electronically send the survey back to me or keep with the administration department at school. Thank you for your time. If you have any questions, please feel free to contact me by electronic mail at (***laylanasser2@gmail.com***) .

Sincerely,

Researcher

Teacher Survey

Directions:

1. Please reply to the survey questions
2. Then send your answers to ( )

Directions: Please answer the following Questions by TYPING AN X IN THE CIRCLE OR FILLING IN THE CIRCLE.

Part I: Internet and Personal Factors

1. **Gender:** Female ◯ Male ◯
2. **Age:** 20-25 ◯ 26-30 ◯ 31-35 ◯ 36-40 ◯ 41-45 ◯ 46-50 ◯ 51-55 ◯ 56-or above ◯
3. Years Teaching, please state a number : ☐
4. Highest Level of Education

   BA ◯ MA ◯ MA plus 15 ◯ MA plus 30 ◯ Doctorate ◯
6. The department I am a member of, please state ☐
7. I have department leadership responsibilities. ◯ Yes ◯ No
8. I am a department chair. ◯ Yes ◯ No
9. I belong to professional organization(s). ◯ Yes ◯ No

   Please state the names ☐

IF YOU HAVE ACCESS TO AND USE THE INTERNET AT SCHOOL LESS THAN ONCE PER MONTH, PLEASE SKIP TO PART 3.

Part 2: Internet Usage:

Please answer the following questions by typing an "X" within the CIRCLE or filling in the blank line, based on your use of the Internet at School during the current school year.

1. I use the Internet to access information through the World Wide Web.

   ◯ Daily ◯ Ix per week ◯ l x per month ◯ Never Other, please state _____
2. I use the Internet to download files by using (ftp) file transfer protocol.

   ◯ Daily ◯ Ix per week ◯ Ix per month ◯ Never Other, please state _____
3. I conduct research on the Internet by using Educational Resource Information Center (ERIC) or other databases.

   ◯ Daily ◯ Ix per week ◯ Ix per month ◯ Never Other, please state _____
4. I use the Internet for electronic mail communication with colleagues.

   ◯ Daily ◯ lx per week ◯ lx per month ◯ Never Other, please state _____
5. I send electronic mail messages to my students.

   ◯ Daily ◯ lx per week ◯ lx per month ◯ Never Other, please state _____
6. I electronically communicate with people on listserv groups.

   ◯ Daily ◯ lx per week ◯ lx per month ◯ Never Other, please state _____

7. I use the Internet to engage in newsgroup or use net discussion groups.
   ◯ Daily ◯ Ix per week ◯ lx per month ◯ Never Other, please state _____
8. I use the Internet to plan for my classroom lessons.
   ◯ Daily ◯ Ix per week ◯ lx per month ◯ Never Other, please state _____
9. Under my direction, students have engaged in Internet related activities.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Never Other, please state _____
10. I use the Internet for professional purposes other than described above.
    ◯ Daily ◯ lx per week ◯ Ix per month ◯ Never Other, please state _____
    Please state type of use _____
11. My Internet usage has been for personal activities such as on-line shopping, personal electronic communication, accessing stock market information, etc.
    ◯ Daily ◯ lx per week ◯ lx per month ◯ Never Other, please state _____
    Please state type(s) of use _____ why the type it state above

Part 3: Internet Home Usage

Please answer the following questions by typing an "X' within the CIRCLE or filling in the blank: line numbered one through nine, ONLY IF YOU USE THE INTERNET AT HOME. IF YOU DO NOT USE THE INTERNET AT HOME. SKIP TO PART 4.

1. I use the Internet to access information through the World Wide Web.
   ◯ Daily ◯ l x per week ◯ lx per month ◯ Never Other, please state _____
2. I use the Internet to download files by using (ftp) file transfer protocol.
   ◯ Daily ◯ Ix per week ◯ lx per month ◯ Never Other, please state _____
3. I conduct research on the Internet by using Educational Resource Information (ERIC) or other databases.
   ◯ Daily ◯ l x per week ◯ Ix per month ◯ Never Other, please state _____
4. I use the Internet for electronic mail communication with colleagues.
   ◯ Daily ◯ Ix per week ◯ lx per month ◯ Never Other, please state _____
5. I send electronic mail messages to my students.
   ◯ Daily ◯ Ix per week ◯ Ix per month ◯ Never Other, please state _____
6. I electronically communicate with people on listserv groups.
   ◯ Daily ◯ Ix per week ◯ Ix per month ◯ Never Other, please state _____
7. I use the Internet to engage in newsgroup or use net discussion groups.
   ◯ Daily ◯ Ix per week ◯ lx per month ◯ Never Other, please state _____

8. I use the Internet to plan for my classroom lessons.

   ◯Daily ◯1x per week ◯1x per month ◯Never Other, please state _____

9. I use the Internet for professional purposes other than described above.

   ◯Daily ◯1x per week ◯1x per month ◯Never Other, please state _____

   Please state type of use _____

10. My Internet usage has been for personal activities such as on-line shopping, personal electronic communication, accessing stock market information, etc.

    ◯Daily ◯1x per week ◯1x per month ◯Never Other, please state _____

    Please state type of use _____

Part 4: Internet Classroom Activities

Please answer the following questions by typing an "X" within the CIRCLE:

1. The Internet is an integral part of my curriculum.

   ◯ Always ◯Sometimes ◯ Frequently ◯Never ◯ Not Applicable

2. My classroom Internet activities are based on my student's personal experiences and interests.

   ◯Always ◯Sometimes ◯ Frequently ◯Never ◯Not Applicable

3. Students work in cooperative groups when using the Internet in my classroom.

   ◯ Always ◯Sometimes ◯ Frequently ◯Never ◯ Not Applicable

4. When using the Internet with my students, they appear to attentive, interested or absorbed in these activities.

   ◯Always ◯Sometimes ◯ Frequently ◯Never ◯Not Applicable

5. My classroom Internet activities are trans-disciplinary (they encompass at least two different curriculum areas).

   ◯Always ◯Sometimes ◯ Frequently ◯Never ◯Not Applicable

6. During Internet activities in my classroom, my role is to be a facilitator as opposed to a direct provider of information.

   ◯Always ◯Sometimes ◯ Frequently ◯Never ◯Not Applicable

7. I assist my students in understanding new information they have learned from the Internet

   ◯Always ◯Sometimes ◯ Frequently ◯Never ◯Not Applicable

8. I encourage my students to reflect either verbally or in writing about their Internet classroom activities or experiences.

   ◯ Always ◯Sometimes ◯ Frequently ◯Never ◯Not Applicable

9. I encourage my students to self-monitor their progress on Internet classroom activities.

◯Always ◯Sometimes ◯ Frequently ◯Never ◯Not Applicable

Part 5: Internet and Pedagogy

Please answer the following questions by typing an "X" within the CIRCLE

1. The Internet has POSITIVELY changed my views on the role of educational technology in the classroom.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

2. The Internet has POSITIVELY changed the way I view education.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

3. The Internet has made me a better teacher.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

4. Students should be encouraged to explore other Internet writers viewpoints or perspectives.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

5. Students should be encouraged to develop their own perceptions or understanding of new information derived from the Internet

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

6. Students should be encouraged to inquire about individual Internet writers viewpoints rather than immediately rejecting or discarding it

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

7. I am committed to developing new and meaningful Internet classroom activities for my students.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

8. Teachers should be held accountable for their ability to integrate the Internet into the curriculum.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

9. Expertise on the Internet should be a competency required by the state education department.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

10. All curriculum revisions should include Internet activities.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

11. I have seen time-on-task improvements from students using the Internet

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

12. Time spent with the Internet takes away from needed direct instruction.

◯Strongly Agree ◯Agree ◯ Disagree ◯Strongly Disagree

13. The Internet in education is just another fad

◯Strongly Agree ◯Agree ◯ Disagree ◯Strongly Disagree

14. Students proficiency with the Internet decreases the authority of the teacher.

◯Strongly Agree ◯Agree ◯Disagree Strongly Disagree

15. Funds currently spent on the library should be used for the Internet Strongly

◯Strongly Agree ◯Agree ◯ Disagree ◯Strongly Disagree

16. Internet connectivity should be a LOW PRIORITY at School.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

17. We should spend a lot more on texts rather than the Internet

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

18. The Internet will never move much beyond drill-and-skill.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

19. The state should reallocate existing aid so more is spent on computer-related technology, namely the Internet

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

20. The board should reallocate existing aid so more is spent on computer-related technology, namely the Internet

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

21. Technology helps a lot with the new NY State Learning Standards.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

22. I have seen the students' creativity increase with the addition of the Internet

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

23. Teachers should have more skills-based Internet-related training.

◯Strongly Agree ◯Agree ◯Disagree ◯Strongly Disagree

Part 6: Internet and Structural Factors

Please answer the following questions by typing "X" within the CIRCLE or filling in the blank line

1. Computers connected to the Internet at School are housed in a location that is readily available to me.

◯Yes ◯ No

2. I am able to access the Internet before the school day.

◯Yes ◯No

Survey Questions for School Administrators

Part 1: Internet and Personal Factors

1. **Gender:** Female ◯ Male ◯

1. **Age:** 20-25 ◯ 26-30 ◯ 31-35 ◯ 36-40 ◯ 41-45 ◯ 46-50 ◯ 51-55 ◯ 56-or above ◯

2. Ethnicity: ◯ Caucasian ◯ African-American ◯ Hispanic ◯ Asian Other, Please State __

3. Years as administrator, please state a number_ ☐

4. Highest Level of Education

◯ BA ◯ MA ◯ MA plus 15 ◯ MA plus 30 ◯ Doctorate

6. I belong to many professional organizations. ◯ Yes ◯ No, please state the name_____

IF YOU HAVE ACCESS TO AND USE THE INTERNET LESS THAN ONCE PER MONTH AT SCHOOL. SKIP TO PART 3.

Part 2: Internet Usage:

Please answer the following questions by typing an "X" within the CIRCLE based on your Internet school usage for the current school year.

1. I use the Internet to access information through the World Wide Web.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
2. I use the Internet to download files by using (ftp) me transfer protocol.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
3. I conduct research on the Internet by using ERIC or other databases.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
4. I use the Internet for electronic mail communication with colleagues.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
5. I communicate with students through electronic mail.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
6. I electronically communicate with people on listserv groups.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
7. I use the Internet to engage in newsgroup or use net discussion groups.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
8. I use the Internet for professional purposes other than described above.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
9. My Internet usage has been for personal activities such as on-line shopping, personal electronic communication, accessing stock market information, etc.

◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____

Part 3: Internet Home Usage

Please answer the following questions by typing an "X" within the CIRCLE numbered one through nine, ONLY IF YOU HAVE ACCESS TO THE INTERNET AT HOME. IF YOU DO NOT USES THE INTERNET AT HOME, SKIP TO PART IV.

1. I use the Internet to access information through the World Wide Web.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
2. I use the Internet to download files by using (ftp) file transfer protocol.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
3. I conduct research on the Internet by using ERIC or other databases.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
4. I use the Internet for electronic mail communication with colleagues.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
5. I communicate with students through electronic mail.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
6. I electronically communicate with people on listserv groups.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
7. I use the Internet to engage in newsgroup or use net discussion groups.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
8. I use the Internet for professional purposes other than described above.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
   Please state type(s) of use _____
9. My Internet usage has been for personal activities such as on-line shopping, personal electronic communication, accessing stock market information, etc.
   ◯ Daily ◯ lx per week ◯ lx per month ◯ Other, please state _____
   Please state type(s) of use _____

Part 4 : Internet and Pedagogy :

Please answer the following questions by typing an "X" within the CIRCLE

1. The Internet has POSITIVELY changed my views on the role of educational technology in the classroom.
   ◯ Strongly Agree ◯ Agree ◯ Disagree ◯ Strongly Disagree
2. The Internet has POSITIVELY changed the way I view education.
   ◯ Strongly Agree ◯ Agree ◯ Disagree ◯ Strongly Disagree
3. The Internet has made teachers better at teaching.
   ◯ Strongly Agree ◯ Agree ◯ Disagree ◯ Strongly Disagree

4. Students should be encouraged to explore other Internet writers viewpoints or perspectives.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

5. Students should be encouraged to develop their own perceptions or understanding of new information derived from the Internet

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

6. Students should be encouraged to inquire about individual Internet writers viewpoints rather than immediately rejecting or discarding it

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

7. Students should be held responsible for the Internet activities that they produce.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

8. Teachers should be held accountable for their ability to integrate the Internet into the curriculum.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

9. Teacher expertise on the Internet should be a competency required by the state education department.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

10. School administrator expertise on the Internet should be a competency required by the state education department.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

11. All curriculum revisions should include Internet activities.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

12. I have seen time-on-task improvements from students using the Internet

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

13. Time spent with the Internet takes away from needed direct instruction.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

14. The Internet in education is just another fad.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

15. Students' proficiency with the Internet decreases the authority of the teacher.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

16. Funds currently spent on the library should be used for the Internet

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

17. Internet connectivity should be a **LOW PRIORITY** at School.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

18. The Internet will never move much beyond drill-and-skill.

◯Strongly Agree ◯ Agree ◯Disagree ◯Strongly Disagree

19. We should spend a lot more on texts rather than the Internet.

◯Strongly Agree ◯ Agree ◯ Disagree ◯ Strongly Disagree

20. The state should reallocate existing aid so more is spent on computer-related technology, namely the Internet

◯Strongly Agree ◯ Agree ◯ Disagree ◯ Strongly Disagree

21. The board should allocate existing aid so more is spent on computer-related technology, namely the Internet

◯Strongly Agree ◯ Agree ◯ Disagree ◯ Strongly Disagree

22. Technology helps a lot with the new NY State Learning Standards.

◯Strongly Agree ◯ Agree ◯ Disagree ◯ Strongly Disagree

23. I have seen the students' creativity increase with the addition of the Internet

◯Strongly Agree ◯ Agree ◯ Disagree ◯ Strongly Disagree

24. Teachers should have more skills-based Internet-related training.

◯Strongly Agree ◯ Agree ◯ Disagree ◯ Strongly Disagree

25. Administrators should have more Internet-related training.

◯Strongly Agree ◯ Agree ◯ Disagree ◯ Strongly Disagree

Pan 5: Structural Factors

Please answer the following questions by typing an "X" within the CIRCLE

1. Computers connected to the Internet at School are housed in a location that is readily available to me.

◯Yes ◯ No

2. I am able to access the Internet before the school day.

◯Yes ◯ No

3. I am able to access the Internet during the school day.

◯ Yes ◯ No

4. I am able to access the Internet after the school day.

◯Yes ◯ No

5. I feel that I have a good understanding of how to use the Internet.

◯Yes ◯ No Comments _____

6. Years using telecommunications in classroom. Please state a number. _____

7. Years using computers in the classroom. Please state a number. _____

8. Technical difficulties, such as inability to connect, downloading problems, etc. when using the Internet occur on a regular basis.

○Yes ○ No

9. Telephone charges are a factor in determining my Internet usage.

○Yes ○ No Comments _____

10. My Internet service provider charges are a factor in determining my Internet usage.

○Yes ○ No Comments _____

11. Comprehension difficulties, such as, understanding how to access specific information, download files, etc. occur on a regular basis when I use the Internet.

○Yes ○ No Comments _____

12. There is time to professionally use the Internet

○Yes ○ No Comments _____

13. There is time to use the Internet for personal reasons.

○Yes ○ No Comments _____

14. The time that I spend using the Internet has affected other aspects of my personal/professional life.

○Yes ○ No Comments _____

15. I have had staff development opportunities concerning the Internet

○Yes ○ No

16. What do you see as the major obstacle(s) to your Internet usage?

_____

_____

17. What would motivate you to use the Internet more often?

_____

_____

THANK YOU FOR ANSWERING THIS SURVEY!

APPENDIX B: Structured Interview

After survey analysis of those staff members who frequently, rarely and never use the Internet, the researcher individually interview 15 teachers and 2 administrators selected from each of these groups.
The questioning of the teachers and administrators will consist of a standardized openended interview. This approach will consist of carefully worded questions (see Interview questions) written as they will be asked in the interview. The basic purpose of this approach according to Patton (1990): "is to minimize interviewer effects by asking the same question of each respondent" (p. 285).

Confidentiality

The Interviewing segment of my data collection will be tape recorded (if respondent grants permission) in order to have complete access to all information stated. Complete confidentiality of the participants will be maintained, recordings will be utilized for transcribing purposes only. Respondents will be asked for permission to anonymously use some of their statements in response to questions asked.

Structured Interview Questions

1. Please describe a typical Internet activity that you would use with your students.
2. Please describe your typical professional use of the Internet
3. Please describe your typical personal, non-professional use of the Internet
4. Will you continue to use the Internet at school, and if applicable, at home, if so, for what purposes?
5. There's a lot of talk about "integrating the Internet into the curriculum." What does this mean to you?
6. How has the presence of the Internet affected your teaching?
7. Has the Internet affected how you view education, if so, how?
8. What is your personal feeling about spending all this money on computers and Internet connectivity? Are there other things you think kids need even more than exposure to technology, if so, what?
9. What are some reasons you don't feel comfortable (or are not interested in) using the Internet in class with your students and for your own professional/personal use?
10. Do you feel pressure to use computers or technology in your teaching? By whom?
11. What would motivate you to use the Internet?

*Please note that for teachers and administrators who rarely or never have used the Internet, only questions 5-11 will be asked.