AN INVESTIGATION INTO THE TEACHERS' PERCEPTION OF TECHNOLOGY INTEGRATION IN TEACHING MATHEMATICS

Hnit Oo May[1], Naing Naing Thein[2]

Abstract

The present study investigated the teachers' perception of technology integration in teaching mathematics. Quantitative research method was used in this study. Questionnaire survey was conducted to investigate the teachers' perception of technology integration in teaching mathematics. The participants were randomly selected from Yangon Region. A total of 185 (JAT 112 and SAT 73) mathematics teachers from the selected schools were participated in this study. A questionnaire was used as research instrument. The required data for this study were collected and analyzed by descriptive analysis. Both middle and high school mathematics teachers have moderate level perception on all dimensions: technology-based teaching and learning, the effectiveness of technology integration for students' learning, and technology integration in learning mathematics. Research findings pointed out that both middle and high school teachers have good perception on technology integration in teaching mathematics.

Keywords: Perception, Technology, Educational Technology, Technology Integration, Integrating Educational Technology

Introduction

Improving the quality and proficiency of technology integration in teaching mathematics is essential to achieve national learning standard. Nowadays, in Myanmar, there are ten programs that are being implemented in the basic education sub-sector under the Thirty-Year Long-Term Education Development Plan. Among those, to improve the quality of basic education, to improve access to teaching-learning and communication technology leading towards e-education and to produce all-round developed citizens must always be kept in mind by all teachers and hence they have to try to achieve the objectives. Technology will make teachers and students more knowledgeable on ever changing environment thus a possibility of shaping their perceptions and application with modernize globalization.

Importance of the Study

In the 21st century, the term 'technology' is an important issue in many fields in Myanmar including education. This is because technology has become the knowledge transfer highway in most countries. Nowadays technology integration has gone through innovations and transformed the societies that has totally changed the way people think, work and live (Grabe, 2007). Schools need to prepare students to live in a knowledge society and consider technology integration in their curriculum implementation.

In Myanmar, education reform has been implemented to meet the needs and demands of the continuously changing world. There was a paradigm shift in teaching methods from teacher centered approach to learner centered approach with the help of technology integration in teaching mathematics. During implementation stage of the education reform, all stakeholders of the schools namely teachers, principals and community members need to realize the importance of change and innovation in education and to collaborate for achieving the educational goals successfully.

[1] Department of Methodology, Mandalay Education Degree College
[2] Curriculum and Methodology Department, Yangon University of Education

Purposes of the Study

The purposes of this study are as follows.

1. To study mathematics teachers' perception on technology-based teaching and learning
2. To explore mathematics teachers' perception on the effectiveness of technology integration in teaching mathematics
3. To give suggestions for enhancing mathematics teaching and learning through technology integration in teaching mathematics

Research Questions

This study aims to answer the following research questions.

1. To what extent do mathematics teachers have perception on technology-based teaching and learning?
2. To what extent do mathematics teachers have perception on the effectiveness of technology integration for students' learning?
3. To what extent do mathematics teachers have perception on technology integration in learning mathematics?
4. To what extent do mathematics teachers have perception on technology integration in teaching mathematics?

Scope of the Study

The present study is geographically restricted to East District in Yangon Region. Participants in this study are 112 middle and 73 high school mathematics teachers from the selected schools within the academic year (2021-2022). Teachers' perception of technology integration was measured in only four dimensions: (i) teacher's perception on technology-based teaching and learning, (ii) teacher's perception on the effectiveness of technology integration for students' learning, (iii) teacher's perception on technology integration in learning mathematics, and (iv) teacher's perception on technology integration in teaching mathematics.

Definition of Key Terms

The key terms used in this study are presented as follows.

Perception: The word 'perception' refers to the processes that allow extracting information from the patterns of energy that impinge on the sense organs (Rogers, 2017).

Technology: Technology is commonly thought of in terms of gadgets, instruments, machines, and devices but is not a collection of machines and devices, and a way of acting (Muffoletto, 1994).

Educational Technology: Educational technology implies the use of all educational resources-men and materials, methods and techniques, means and media in an integrated and systematic manner for optimizing learning (Roblyer & Edwards, 2000).

Technology Integration: Technology integration refers to the use of technology-based resources and practices in school and classroom activities (Ogle et al., 2002).

Integrating Educational Technology: Integrating educational technology refers to the process of determining which technology-based tools and which methods for implementing them are appropriate for given situations and problems (Roblyer & Edwards, 2000).

Review of Related Literature

Educational Technology is the combined use of computer hardware, software and educational theory and practice to facilitate learning. In addition to practical educational experience, educational technology is based on theoretical knowledge from various disciplines such as communication, education, psychology, sociology, artificial intelligence and computer science. It encompasses several domains including learning theory, computer-based training, online learning and e-learning where mobile technologies are used. Educational Technology will be employed in the spread of useful information, the training and retraining of teachers, to improve the quality, sharpen perception of art and culture, inculcate abiding values, etc., both in the formal and non-formal sections (Mohanty, 2007).

Education requires media support which is related to the curriculum as well as enrichment. Curriculum-based education also requires materials which the teacher can draw upon in the course of this teaching. This could be provided in the form of charts, slides, transparencies, etc. Video technology offers considerable potential for improving the quality of education especially at higher levels (Mohanty, 2007).

There are a large number of new methods and media constitute educational technology. But there is no proper co-ordination and articulation in their use. That is why, no satisfactory results are achieved by such a wide range of materials due to lack of a systematic planning and organization. With the advance of science and technology, there are new learning aids which have revolutionized the learning process in particular and education as a whole. In modern society with its emphasis on mass education and successful citizenship training, the requirement is for efficient learning. Education has now become an assembly-line like mass production factories. A nation can prosper if its education can be made effective. Education can be made efficient, if it uses modern technology.

The material used as medium of instruction may be categorized into three groups: audio, visual and audio-visual (See Table 1).

Table 1 Categories of Educational Media

Audio Aids	Visual Aids	Audio-Visual Aids
Radio	Pictures	TV
Tape-Recorder	Chart	Computer
Lingua Phone	Models	CCTV
Microphone	Maps	Video-Tape
Loudspeakers	Still Movie Projector	VCR
Sound Distribution System	OHP	Teleconferencing
Language Laboratory	Slide Projector	Movie Projector
Tape and Disk Recording	Black Board	LCD Projector
	Flannel Board	
	Display Board	
	Epidiascope	

Source: From Pachauri, Kumar and Rana (2011).

Research Method

Research Design

Quantitative research method was used in this study. Questionnaire survey was conducted to investigate the teachers' perception of technology integration in teaching mathematics.

Sampling

In this study, 185 mathematics teachers (JAT 112 and SAT 73) from the selected schools were participated.

Instrument

The present study included three types of teachers' perception on technology integration in teaching mathematics. To investigate mathematics teachers' perception on technology integration in teaching mathematics, inventory developed by Thomas and Hong's teacher integration of technology into mathematics learning (2012) was used in this study. Inventory on the teachers' perception on technology integration in teaching mathematics consists of 36 items. There are three subscales and 12 items in each subscale. All the items in inventory on the teachers' perception on technology integration in teaching mathematics are scored by five points Likert scale (5=strongly agree, 4= agree, 3=unsure, 2=disagree, 1=strongly disagree).

Procedure

After modifying the instrument, a pilot testing was carried out with all middle and high school mathematics teachers from five Basic Education High Schools, South Dagon, Yangon Region with 20 middle school mathematics teachers and 20 high school mathematics teachers. Based on the results of pilot study, the necessary changes were made and reliability coefficient of the instrument, internal consistency (Cronbach's Alpha) was calculated. The internal consistency (Cronbach's Alpha) was 0.725. Therefore, the questionnaire was suitable to use.

Then, it was conducted in Yangon Region in which there are four districts and thus one district was selected and seven townships from the selected district were chosen by using simple random sampling method. Therefore, 38 high schools were included in this study. The modified questionnaire was distributed to all participants from all selected sample schools with the help of the headmaster or headmistress of those schools in November, 2021. After collecting the data, they were entered into the computer data file.

Data Analysis

The data were analyzed by using descriptive statistics (mean, standard deviation and percentage).

Research Findings

Findings of Middle School Mathematics Teachers' Perception of Technology-based Teaching and Learning

According to the responses, the mean score of middle school mathematics teachers' perception of technology-based teaching and learning is presented in the Table 2.

Table 2 Mean of Middle School Mathematics Teachers' Perception of Technology-based Teaching and Learning

No.	Dimension	N	Mean Score	Standard Deviation	Minimum	Maximum
1	Technology - based teaching and learning	112	45.53	3.76	26	56

In order to find out the levels of teachers' perception on technology-based teaching and learning, it is necessary to examine the percentage of 112 middle school mathematics teachers who have low, moderate and high perception on technology-based teaching and learning. Therefore, a descriptive statistics (percentage) was used. All the participants were classified into three groups (low, moderate and high) based on the mean and standard deviation.

Table 3 Percentage of Levels of Middle School Mathematics Teachers' Perception of Technology-based Teaching and Learning

Level of Perception	Score	No. of Teacher	Percentage
Low	$x < 41.77$	9	8
Moderate	$41.77 \leq x \leq 49.29$	88	79
High	$x > 49.29$	15	13
Total		**112**	**100**

In order to present the levels of middle school mathematics teachers' perception on technology-based teaching and learning, the percentage of various groups are presented in Table 3.

Findings of High School Mathematics Teachers' Perception of Technology-based Teaching and Learning

According to the teachers' responses, the mean score of high school mathematics teachers' perception of technology-based teaching and learning is presented in the Table 4.

Table 4 Mean of High School Mathematics Teachers' Perception of Technology-based Teaching and Learning

No.	Dimension	N	Mean Score	Standard Deviation	Minimum	Maximum
1	Technology-based teaching and learning	73	45.49	3.99	32	56

In order to find out the levels of teachers' perception on technology-based teaching and learning, it is necessary to examine the percentage of 73 high school mathematics teachers who have low, moderate and high perception on technology-based teaching and learning. Therefore, a descriptive statistic (percentage) was used. All the participants were classified into three groups (low, moderate and high) based on the mean and standard deviation.

Table 5 Percentage of Levels of High School Mathematics Teachers' Perception of Technology-based Teaching and Learning

Level of Perception	Score	No. of Teacher	Percentage
Low	$x < 41.50$	3	4
Moderate	$41.50 \leq x \leq 49.48$	61	84
High	$x > 49.48$	9	12
Total		**73**	**100**

In order to present the levels of high school mathematics teachers' perception on technology-based teaching and learning, the percentage of various groups are presented in Table 5.

Findings of Middle School Mathematics Teachers' Perception of the Effectiveness of Technology Integration for Students' Learning

According to the middle school mathematics teachers' responses, the mean score of middle school mathematics teachers' perception of the effectiveness of technology integration for students' learning is presented in the Table 6.

Table 6 Mean of Middle School Mathematics Teachers' Perception of the Effectiveness of Technology Integration for Students' Learning

No.	Dimension	N	Mean Score	Standard Deviation	Minimum	Maximum
1	Effectiveness of technology integration for students' learning	112	48.99	3.96	38	60

In order to find out the levels of teachers' perception on the effectiveness of technology integration for students' learning, it is necessary to examine the percentage of 112 middle school mathematics teachers who have low, moderate and high perception on the effectiveness of technology integration for students' learning. Therefore, a descriptive statistics (percentage) was used. All the participants were classified into three groups (low, moderate and high) based on the mean and standard deviation.

Table 7 Percentage of Levels of Middle School Mathematics Teachers' Perception of the Effectiveness of Technology Integration for Students' Learning

Level of Perception	Score	No. of Teacher	Percentage
Low	$x < 45.03$	6	5
Moderate	$45.03 \leq x \leq 52.95$	85	76
High	$x > 52.95$	21	19
Total		**112**	**100**

In order to present the levels of middle school mathematics teachers' perception on the effectiveness of technology integration for students' learning, the percentage of various groups are presented in Table 7.

Findings of High School Mathematics Teachers' Perception of the Effectiveness of Technology Integration for Students' Learning

According to the high school mathematics teachers' responses, the mean score of high school mathematics teachers' perception of the effectiveness of technology integration for students' learning is presented in the Table 8.

Table 8 Mean of High School Mathematics Teachers' Perception of the Effectiveness of Technology Integration for Students' Learning

No.	Dimension	N	Mean Score	Standard Deviation	Minimum	Maximum
1	Effectiveness of technology integration for students' learning	73	48.11	4.04	30	60

In order to find out the levels of teachers' perception on the effectiveness of technology integration for students' learning, it is necessary to examine the percentage of 73 high school mathematics teachers who have low, moderate and high perception on the effectiveness of technology integration for students' learning. Therefore, a descriptive statistics (percentage) was used. All the participants were classified into three groups (low, moderate and high) based on the mean and standard deviation.

Table 9 Percentage of Levels of High School Mathematics Teachers' Perception of the Effectiveness of Technology Integration for Students' Learning

Level of Perception	Score	No. of Teacher	Percentage
Low	$x < 44.07$	4	5
Moderate	$44.07 \leq x \leq 52.15$	61	84
High	$x > 52.15$	8	11
Total		**73**	**100**

In order to present the levels of high school mathematics teachers' perception on the effectiveness of technology integration for students' learning, the percentage of various groups are presented in Table 9.

Findings of Middle School Mathematics Teachers' Perception of Technology Integration in Learning Mathematics

According to the responses, the mean score of middle school mathematics teachers' perception of technology integration in learning mathematics is presented in the Table 10.

Table 10 Mean of Middle School Mathematics Teachers' Perception of Technology Integration in Learning Mathematics

No.	Dimension	N	Mean Score	Standard Deviation	Minimum	Maximum
1	Technology integration in learning mathematics	112	47.97	4.39	36	60

In order to find out the levels of teachers' perception on technology integration in learning mathematics, it is necessary to examine the percentage of 112 middle school mathematics teachers who have low, moderate and high perception on technology integration in teaching mathematics. Therefore, a descriptive statistics (percentage) was used. All the participants were classified into three groups (low, moderate and high) based on the mean and standard deviation.

Table 11 Percentage of Levels of Middle School Mathematics Teachers' Perception of Technology Integration in Learning Mathematics

Level of Perception	Score	No. of Teacher	Percentage
Low	$x < 43.58$	13	12
Moderate	$43.58 \leq x \leq 52.36$	83	74
High	$x > 52.36$	16	14
Total		**112**	**100**

In order to present the levels of middle school mathematics teachers' perception on technology integration in learning mathematics, the percentage of various groups are presented in Table 11.

Findings of High School Mathematics Teachers' Perception of Technology Integration in Learning Mathematics

According to the responses, the mean score of high school mathematics teachers' perception of technology integration in learning mathematics was presented in the Table 12.

Table 12 Mean of High School Mathematics Teachers' Perception of Technology Integration in Learning Mathematics

No.	Dimension	N	Mean Score	Standard Deviation	Minimum	Maximum
1	Technology integration in learning mathematics	73	47.51	4.43	29	60

In order to find out the levels of teachers' perception on technology integration in learning mathematics, it is necessary to examine the percentage of 73 high school mathematics teachers who have low, moderate and high perception on technology integration in teaching mathematics. Therefore, a descriptive statistics (percentage) was used. All the participants were classified into three groups (low, moderate and high) based on the mean and standard deviation.

Table 13 Percentage of Levels of High School Mathematics Teachers' Perception of Technology Integration in Learning Mathematics

Level of Perception	Score	No. of Teacher	Percentage
Low	$x < 43.08$	4	6
Moderate	$43.08 \leq x \leq 51.94$	60	82
High	$x > 51.94$	9	12
Total		**73**	**100**

In order to present the levels of high school mathematics teachers' perception on technology integration in learning mathematics, the percentage of various groups are presented in Table 13.

Findings of Middle School Mathematics Teachers' Perception of Technology Integration in Teaching Mathematics

According to the responses, the mean score of middle school mathematics teachers' perception of technology integration in teaching mathematics is presented in the Table 14.

Table 14 Mean of Middle School Mathematics Teachers' Perception of Technology Integration in Teaching Mathematics

No.	Dimension	N	Mean Score	Standard Deviation	Minimum	Maximum
1	Technology integration in teaching mathematics	112	183.37	12.01	134	219

In order to find out the levels of teachers' perception on technology integration in teaching mathematics, it is necessary to examine the percentage of 112 middle school mathematics teachers who have low, moderate and high teachers' perception on technology integration in teaching mathematics. Therefore, a descriptive statistics (percentage) was used. All the participants were classified into three groups (low, moderate and high) based on the mean and standard deviation.

Table 15 Percentage of Levels of Middle School Mathematics Teachers' Perception of Technology Integration in Teaching Mathematics

Level of Perception	Score	No. of Teacher	Percentage
Low	$x < 171.36$	10	9
Moderate	$171.36 \leq x \leq 195.38$	86	77
High	$x > 195.38$	16	14
Total		112	100

In order to present the levels of middle school mathematics teachers' perception on technology integration in teaching mathematics, the percentage of each group are presented in Table 15.

Findings of High School Mathematics Teachers' Perception of Technology Integration in Teaching Mathematics

According to the responses, the mean score of high school mathematics teachers' perception of technology integration in teaching mathematics is presented in the Table 16.

Table 16 Mean of High School Mathematics Teachers' Perception of Technology Integration in Teaching Mathematics

No.	Dimension	N	Mean Score	Standard Deviation	Minimum	Maximum
1	Technology integration in teaching mathematics	73	183.34	13.25	128	228

In order to find out the levels of teachers' perception on technology integration in teaching mathematics, it is necessary to examine the percentage of 73 high school mathematics teachers who have low, moderate and high teachers' perception on technology integration in teaching mathematics. Therefore, a descriptive statistics (percentage) was used. All the participants were classified into three groups (low, moderate and high) based on the mean and standard deviation.

Table 17 Percentage of Levels of High School Mathematics Teachers' Perception of Technology Integration in Teaching Mathematics

Level of Perception	Score	No. of Teacher	Percentage
Low	$x < 170.09$	4	6
Moderate	$170.09 \leq x \leq 196.59$	62	85
High	$x > 196.59$	7	9
Total		**73**	**100**

In order to present the levels of high school mathematics teachers' perception on technology integration in teaching mathematics, the percentage of each group are presented in Table 17.

Discussion

In order to find out the teachers' perception of technology integration in teaching mathematics, three dimensions were investigated. They are teachers' perception on technology-based teaching and learning, effectiveness of technology integration for students' learning, and technology integration in learning mathematics

According to the results of teachers' perception on technology-based teaching and learning, 8% of middle school mathematics teachers have low level of perception, 79% have moderate level and 13% have high level respectively. Hence, 4% of high school mathematics teachers have low level of perception on technology-based teaching and learning, 84% have moderate level and 12% have high level respectively. So, it can be interpreted that both most of middle and high school mathematics teachers have satisfactorily perception on technology-based teaching and learning.

The results of teachers' perception on the effectiveness of technology integration for students' learning show that 5% of middle school mathematics teachers have low level of perception, 76% have moderate level and 19% have high level respectively. Hence, 5% of high school mathematics teachers have low level of perception on effectiveness of technology integration for students' learning, 84% have moderate level and 11% have high level respectively. So, it can also be interpreted that both most of middle and high school mathematics teachers have satisfactorily perception on effectiveness of technology integration for students' learning.

According to the results of teachers' perception on technology integration in learning mathematics, 12% of middle school mathematics teachers have low level of perception, 74% have moderate level and 14% have high level respectively. Hence, 6% of high school mathematics teachers have low level of perception on technology integration in learning mathematics, 82% have moderate level and 12% have high level respectively. So, it can also be interpreted that both most of middle and high school mathematics teachers have satisfactorily perception on technology integration in learning mathematics.

The results of teachers' perception on technology integration in teaching mathematics show that 9% of middle school mathematics teachers have low level of perception, 77% have moderate

level and 14% have high level respectively. Hence, 6% of high school mathematics teachers have low level of perception on the use of technology in mathematics classroom, 85% have moderate level and 9% have high level respectively. So, it can also be interpreted that both most of middle and high school mathematics teachers have satisfactorily perception on technology integration in teaching mathematics.

Suggestions

There were some limitations in this research. The samples schools were selected from Yangon Region. So, the selected survey area was a limitation. That is because small sample size was participated in this study. If the sample size is large, the results obtained from the data were more generalized and representative to the whole population.

Developing technology integration in teaching mathematics is a major factor in holistic development of mathematics education but not all complete for holistic development of mathematics teachers. For further research, an investigation into the teachers' technology integration in teaching mathematics is needed to be extended with other variables and other levels of teachers.

The suggestions for enhancing the teachers' perception of technology integration in teaching are given in the following.

- The government, administrators and stakeholders should encourage teachers to promote positive reinforcements and perceptions in technology.
- It should permit to study the use of technology in the modernize countries.
- It should hold technological shows and competitions in schools.
- It should try to encourage for knowing the effectiveness of technology to all teachers.

Conclusion

According to Benning, Linsell and Ingram (2018), technology is essential in the 21st century education. New education technology brings to the classroom environment in accordance with four major areas. First, the addition of technology into the classroom can help transform the classroom experience from a classic teacher-centered one into a student-centered experience with students taking a more active role in learning. In a student-centered classroom, the teacher becomes more of a guide as the students engage with and tackle the day's lesson. Technology integration in the classroom can give a carefully selected blend of instructional technologies with face-to-face communication.

Second, technology provides teachers and students with access to a variety of educational resources that inspire creativity, critical thinking, communication and collaboration. It promotes inclusion and the development of digital literacy skills. It extends learning beyond the text and beyond the classroom walls. It ultimately exposes students and teachers to new online global communities. Technology integration in teaching promotes a global awareness which is an essential component in the 21st century education.

Third, through the use of instructional technology, differentiated instruction can be made much easier to different levels of students in the classroom. It can become more of a reality with differentiated instruction, students are provided an education that is personalized and that meets them where they are developmentally. More students are able to benefit from this type of instruction. The use of technology also provides students access to very rich learning materials outside of the classroom.

Finally, it is paramount that while in school, students' use tools that will best prepare them for their future academic and professional experiences. This includes a blend of new tech and old tech. Integrating technology into the classroom provides students with a set of skills to navigate through the variety of online tools today. It also provides teachers opportunities to educate students on digital citizenship and the new challenges to academic integrity. Successful integration requires time, customization, experimentation, and support. While there are many schools successfully integrating technology into their classrooms, there are an even larger number of schools that are faced with obstacles impeding this process.

Above four major reasons for the effectiveness of teaching and learning, today's mathematics teachers should bring new educational technology into their classrooms. It should be perceived importance role of education technology in education and technology integration in the classroom are essential for the 21st century mathematics classrooms. Moreover, the quality of mathematics will pave way for the much-needed pursuit in science and technology at the higher level in this changing world. Technology provides additional opportunities for learners to see and interact with mathematical concepts.

Acknowledgements

We would like to express our deepest gratitude to the following individuals who extended their invaluable support for the completion of this study. Firstly, we would like to render our respectful gratitude to Dr. Kay Thwe Hlaing (Rector, Yangon University of Education), Dr. May Myat Thu (Pro-Rector, Yangon University of Education), Dr. Khin Khin Oo (Pro-Rector, Yangon University of Education) and Dr. Nyo Nyo Lwin (Pro-Rector, Yangon University of Education) for their permission to carry out this study. We would like to offer sincerest appreciation to Dr. Khin Mar Khine (Professor/Head of Department of Curriculum and Methodology, Yangon University of Education) for her invaluable suggestions, encouragement and kind help.

References

Benning, I., Linsell, C., & Ingram, N. (2018). Using Technology in Mathematics: Professional Development for Teachers. *Mathematics Education Research Group of Australasia Journal.*

Grabe, M., & Grabe, C. (2007). Integrating technology for meaningful learning (5th ed.). Boston, MA: Houghton Mifflin.

Mohanty, J. (2007). *Modern trends in educational technology.* New Delhi: Suresh Chandra for Neelkamal Publications Pvt. Ltd.

Muffoletto, R. (1994). Technology and restructuring education: Constructing a context. *Educational Technology, 34* (2), 24-28.

Ogle, T., Branch, M., Canada, B., Christmas, C., & Vinson, M. (2002). *Technology in schools: Suggestions, tools, and guidelines for assessing technology in elementary and secondary education* (NCEC 2003-313). Washington, DC: U. S. Department of Education, National Center for Education Statistics Retrieved *July 27, 2021* from https://nces.ed.gov/pubs2003/tech-schools/index.asp#7.

Roblyer M. D., & Edwards, J. (2000). *Integrating Educational Technology into Teaching* (2nd ed.). Washington, DC: U.S, Rowman & Littlefield Publishing Group.

Rogers, B. (2017). *Perception - a very short introduction.* City of Oxford, England, Oxford University Press Amazon company.

Pachauri, S. C., Kumar, P., & Rana, P. S. (2011). *Educational Technology.* New Delhi: A.P.H Publishing Corporation.

Thomas, M. O. J., & Hong, Y. Y. (2012). Teacher integration of technology into mathematics learning. *International Journal of Technology in Mathematics Education,* 20 (2).