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CONTENTS

CENTRE FOR EDUCATIONAL RESEARCH
MADURAI KAMARAJ UNIVERSITY

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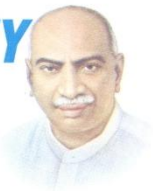

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MESSAGE

The Centre for Educational Research of Madurai Kamaraj University (MKU-CER), is a distinct centre for critical research on Education aspects and brought out the International Journal of Educational Research, Development and Extension (IJERDE), which is peer-reviewed. IJERDE has wide readership throughout India and other countries also. IJERDE covers the following research findings in its current volume XIII.

The first article deals with the Adoption and utilization of e-learning by the faculty members of Chinhoyi University in Zimbabwe and studied its impact on modern Education and teaching. Second article has reported the need of educational cognitive science orientation to maintain the teaching competency of teachers. Interestingly, the influences of meta-cognitive abilities on mathematical problem solving among students are studied.

A retrospective study on the attitude of teachers on online class among school teachers was also presented which may have impact on the conduct of online teaching mode. An opinion study on the NEET examination with major stakeholders like students, teachers and parents are presented. Finally, reading habits among the school teachers is also reported to the readers.

I firmly believe that the contents presented in this volume will be helpful for the researchers, students and faculty members. I congratulate the IJERDE editorial team and wish the journal every success.

Kumar

VICE CHANCELLOR

Editor's Note

We are delighted to present the current issue (Vol.XIII) of the International Journal of Educational Research, Development and Extension (IJERDE) to the readers. The IJERDE has been publishing up-to-date, high quality and original research articles on various dimensions of education across disciplines at different level. IJERDE is well known for its academic excellence and dedicated approach towards dissemination of knowledge in the academic world on behalf of Centre for Educational Research, Madurai Kamaraj University (MKU-CER). The journal provides the vibrant podium, to present the research accomplishments of the researchers engaged in these arenas.

The present issue of the IJERDE presents a wide band of papers on a variety of educational themes;

- Masamha et al., have reported a study that assessed the adoption and utilization of e-learning by faculty members at Chinhoyi University of Technology in Zimbabwe.
- Bindu and Jahitha Begam explore the effective reflections of Educational Cognitive Science orientation in enhancing the teaching competency of the prospective teachers.
- Vijayarani and Sumathi focused on investigating the relationship between the meta-cognitive ability and mathematical problem solving capabilities among the students.
- Kannan and Sengamalam inspects the teaching and learning via online attitude approach of techno-pedagogy skills right from the teacher-education programme
- Jahitha Begam et al., have reported the opinion of higher secondary students on curriculum dissemination and evaluation process to achieve in NEET examination.
- Manikandan and Sengamalam have looked into the reading habits to develop competence in effective content delivery with variety of strong emotions.

Publishing an article in the research journal is results from the cumulative efforts of research scholars and supervisor. The efforts of various populaces has facilitated the editorial transition and made this publication possible. Some of them deserve a special gratitude for their outstanding contribution, especially, Prof. A. Jahitha Begam, Professor and Head, Department of Education, Gandhigram Rural University, Dindigul for her role as a reviewer. We also thank our Vice-Chancellor and Registrar for extending their support in revamping IJERDE. I am glad about my colleagues in CER, MKU for their efforts in arranging the peer-review and facilitating the administrative processes.

I hope you will enjoy the articles indexed in the current issue current issue as valuable to give more insights in to the above mentioned themes. We welcome your comments which may be helpful in improving the journal in future volumes.

Dr. R. Annadurai

Editor-in-Chief

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ADOPTION AND UTILIZATION OF E-LEARNING BY CHINHOYI UNIVERSITY OF TECHNOLOGY FACULTY MEMBERS IN ZIMBABWE

Tavengwa Masamha, Tongai Mwedzi & Maria Tsvere

Abstract

This paper reports on a study that assessed the adoption and utilization of e-learning by faculty members at Chinhoyi University of Technology in Zimbabwe. Specifically, the study evaluated the adequacy of institutional e-learning infrastructure and resources, determined factors affecting behavioural intention to adopt and utilise e-learning by both faculty members and explored possible remedies to the challenges of e-learning acceptance and adoption at CUT. The study was informed by the Modified Unified Technology Acceptance model and pragmatism with a bias towards the quantitative paradigm. The mixed method research collected data through structured questionnaires from a stratified random sample of 50 students and 25 lecturers who were selected using a census method. The study made described and analysed data using descriptive statistics, which involved calculating the percentages, mean and standard deviations cross tabulation, and figures. Multiple Regression Analysis was used in running lecture and student models of the factors that affect e-learning. Statistical Package for Social Sciences (SPSS) version 20 was used for data analysis. The study revealed that the university does not have adequatee-learning infrastructure and faculty members both needed technical up skilling to enhance the utilization of e-learning. Performance expectancy stood out as the most important factor influencing behavioural intention to adopt e-learning among an array of other factors such as effort expectancy and social influence. To address the acceptance and adoption of e-learning the university should improve the availability of the Internet, improve infrastructure, provide training and increase technical assistance. The university should also put in place incentives for using e-learning or disincentives for not using e-learning.

Keywords: Modified Technology Acceptance Model, e-learning, Adoption, University Students

Background

Information and Communication Technologies (ICTs) have become characteristic of higher education worldwide. UNESCO has strongly encouraged this trend and urged higher education institutions to make greater use of ICT to improve the provision and quality of their education (Sarkar 2012). ICT in education, now generally referred to as e- learning (Weber & Hamlaoui 2018) is therefore gaining ground in university education. There is no

single agreed definition for e-learning. Sangrà, Vlachopoulos and Cabrera 2012 define e-learning as an approach to teaching and learning, representing all or part of the educational model applied, that is based on the use of electronic media and devices as tools for improving access to training, communication and interaction and that facilitates the adoption of new ways of understanding and developing learning. Valverde-Berrocoso, Garrido- Arroyo, Burgos-Videla & Marales-Cevallos (2018) define it as an innovative web based system based on digital technologies and other forms of educational materials whose primary goal is to provide students with a personalized, learner centered, open, enjoyable and interactive learning environment supporting and enhancing the learning process. In other words, it incorporates all educational activities that are carried out by individuals or groups working online or offline and synchronically or a synchronically via networked or standalone computers and other electronic devices (Chitra & Raj 2018).

Despite the wide spread adoption of ICTs in university education, research suggests that it has not reached its full potential (Elgort2005; Garrison 2011; Lambert & Hassan 2018). Although e-learning adoption and usage seems to been successful in the developed world, developing countries are yet to realise its full potential (Mtebe, 2015). In 2018 84% of the citizens of member states of the European Union had had access to the Internet, compared to 66% in Latin America and18% in the least developed countries (Valverde-Berrocoso, Garrido- Arroyo, Burgos-Videla & Marales-Cevallos, 2018). While developing countries have increased application of ICTs in university teaching, e-learning is still in its infancy and early adoption stage (El-Masri & Tarhini 2017). Furthermore developing countries experience unique challenges in the adoption of ICTs (Bhuasiri, Xaymoungkhoun, Zo, Rho & Ciganek 2012). The educational system is experiencing rapid and important changes and it is important for developing countries to keep pace with these changes. The world is now emphasising transformative learning where graduates should be equipped to act swiftly, think independently and critically and are able to collaborate with others to make sense of their changing environment (Mezirow, 2018).

In an endeavor to improve the quality of education in Zimbabwe, universities are turning to ICT to develop alternative content delivery methods. It has been observed that e-learning has the potential to transform the organisation and structure of learning and may promote the development of higher cognitive processes E-learning can increase the effectiveness and overall efficiency of the educational process in Zimbabwe both in terms of classroom activities and administration. Although there is a significant trend of concentrating resources towards e-learning, the use of new technologies for learning and teaching in Zimbabwe is still at a developmental stage (Mbengo 2014).The COVID-19 pandemic caused the closing of classrooms around the Globe and forced one and a half

billion students and sixty-three educators to quickly change their face to face academic practices, wherever possible (Valverde-Berrocoso, Garrido- Arroyo, Burgos-Videla & Marales-Cevallos, 2018). In addition, COVID-19 has unearthed the current inequalities in the education system and the need for universal and low-cost access to the Internet for teaching and learning (Valverde-Berrocoso, Garrido- Arroyo, Burgos-Videla & Marales-Cevallos 2018).

The focus has largely been on getting the infrastructure and creating the e-learning content (Chitanana et al., 2008). Thus, a top-down approach has been followed in the implementation of e-learning in the country. The attitudes and responses of students and lecturers have not been considered in the process. However, investment in e-learning can lose its significance if the intended end users are not interested. Unless the individual factors of faculty members are considered, the potential of e-learning will not be fully utilised, and this will lower the return on investment (Yuen & Ma, 2008).The purpose of this study was to assess the key factors influencing e-learning acceptance and adoption and to recommend strategies that could be adopted to overcome any identified barriers to the smooth implementation of e-learning as a medium of instruction at Chinhoyi University of Technology (CUT).

Statement of the Problem

Despite the numerous advantages inherent in e-learning, there are general reservations about the effectiveness of e-learning as compared to traditional approaches of teaching and learning. Faculty members are skeptical and show little commitment towards e-learning adoption and utilisation (Mbengo, 2014; Weber & Hamlaoui, 2018). This raises questions about the adequacy and capabilities of e-learning as a viable alternative to traditional approaches of teaching and learning. Furthermore, there is death in literature on factors influencing adoption of e-learning in Southern Africa (Kasse & Balunywa, 2013; Mtebe, 2015). This study addresses the problem of low level uptake rate of e-learning by faculty members at Chinhoyi University of Technology.

Objectives of the Study

The objectives of the study were to:

1. Evaluate the adequacy of e-learning resources at Chinhoyi University of Technology.
2. Determine the factors affecting behavioural intention to adopt e-learning by faculty members at Chinhoyi University of Technology.
3. Explore possible remedies to the challenges of e-learning adoption at Chinhoyi University of Technology.

Hypotheses of the Study

1. E-learning resources at CUT sufficiently meet the expectations of the faculty members.
2. Social factors significantly affect faculty members' behavioural intention to adopt e-learning resources in at CUT.
3. There are facilitating conditions that influence the acceptance and adoption of e-learning at CUT.

Significance of the Study

The study is a valuable baseline on the status of adoption of e-learning at CUT for tracking the growth or decline of e-learning. The study highlights those factors affecting e-learning acceptance and adoption. It therefore provide significant insights for decision makers to enhance university teaching and learning. The results enable management in making informed decisions on the provision of the necessary support to facilitate e-learning.

Research Methodology

This study employed the pragmatic school of thought which believes that reality is steady and stable whilst knowledge can be observed and quantified. This philosophy advocate for complimenting shortfalls of either paradigm in data collection and analysis. A mixed methods strategy of qualitative and quantitative approach with a bias towards quantitative research was therefore used. The study employed a cross sectional survey design. The study targeted population comprised all faculty members in the School of Hospitality and Tourism and School of Wildlife, Ecology and Conservation totalling 521. A stratified random sample of 50 students responded to research instruments. All 25 lecturers also responded to structured questionnaires. The questionnaires had 5 point Likert scale with responses of strongly agree-5, agree-4, neutral/Not sure-3, disagree-2, and strongly disagree-1. Data were presented using simple descriptive statistics- cross tabulations, mean, standard deviation, frequencies and percentages.

Multiple Regression Analysis was used to run lecture and student models of the factors that affect e-learning. Statistical Package for Social Sciences version 20was used for data analysis. The following results were obtained from this study.

Findings and Discussion

Moderators of e-learning

The response rates were 94% from students and 67% from lecturers. Cronbach's alpha (α) was used to determine the reliability of the constructs. Cronbach's alpha in the range of

0.701 to 0.958 were obtained for both faculty members. The results show that the scales of measurement used in the study were reliable as a Cronbach's alpha of 0.7 is generally acceptable (Santos, 1999, Olaniyi 2019, Surucu & Maslakci 2020).

Figure 1 indicates that the majority of lecturers (n=17) constituting 71.4% use the facilitator-personal model expert teaching style whilst 7.14% use the delegator facilitator expert teaching style. A similar percentage uses the expert formal authority style while 14.3% use the Personal model expert style. This implies that most of the teachers prefer to teach by example, guiding and directing students by showing them how to do things and encourages them to emulate and by asking questions and suggesting alternative options with the overall goal of developing students' capacity for independent action, initiative, and responsibility.

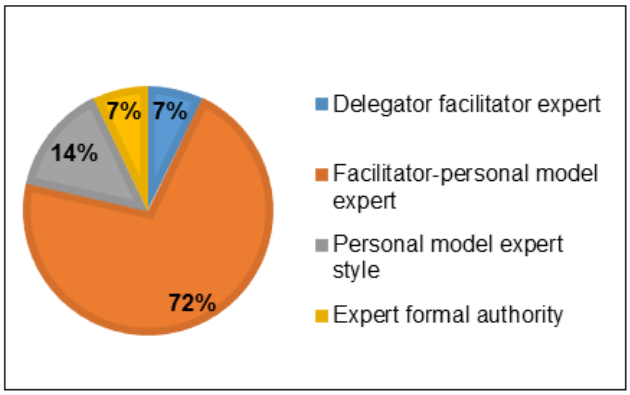

Figure 1: Lecturers teaching styles' at CUT School of Hospitality and Tourism and School of Wildlife, Ecology and Conservation.

These findings indicate a shift in lecturers' teaching approaches observed byGrasha (1996) that in general (38%) of college teachers used expert formal authority teaching style, (22%) used personal model expert teaching style and 17% of lecturers used facilitator style and 15% used delegator teaching style.

Figure 2 indicates that 88.5% of the students had a participative learning style while 11.5% were avoidant. Most of the students (75%) had a collaborative learning style anda few had a competitive learning style. In addition, majority of students indicated that they had a dependent learning style (60%) as opposed to independent (40%). Only 16% of the students had an individualistic learning style while the majority (84%) had a collectivist style. The results show that students were ready for an e-learning environment. The participative, collaborative and collectivist styles preferred by the students fit very well with the facilitator and delegator teaching styles.

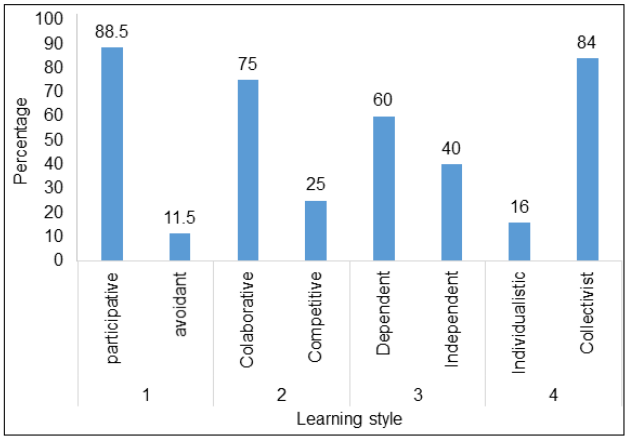

Figure 2: Students learning styles at CUT school of Hospitality and Tourism and School of Wildlife, Ecology and Conservation

Findings were summarised based on the study's research objectives. The study made use five constructs namely: performance expectancy, effort expectancy, social influence, facilitating conditions and intention to use. The responses were 1= strongly disagree, 2= disagree, 3= neutral/ not sure, 4= agree, 5= strongly agree. On actual usage the study allowed the participants to indicate the tools that they actually used.

The Adequacy of e-learning Resources at Chinhoyi University of Technology

The adequacy of e-learning infrastructure was described as a facilitating condition. Table 1 depicts the descriptive statistics for facilitating conditions for the acceptance and adoption of e-learning by faculty members at CUT.

Table 1: Facilitating Conditions for e-learning at CUT (Students Perceptions)

Item	Mean	Std. Deviation	N
The university has provided me all the facilities I need for e-learning	3.28	1.089	46
The ICT infrastructure in the university is available when I need it	2.80	1.036	45
The University provides me an opportunity for e-learning	3.63	.903	46
The university provides incentives to lecturers who use e-learning	1.77	1.047	47
The university provides incentives to students who use e-learning	2.38	1.054	47
The university has provided training for me to use e-learning tools	3.26	1.242	47

There is technical help available if required while using e-learning	3.26	1.237	46
The head of my department or school uses e-learning	3.96	.955	47
The head of my department or school supports lecturers using e-learning	3.83	1.049	47
Overall	3.13	1.07	

Source: Author

Facilitating Conditions for e-learning at Chinhoyi University of Technology (Lecturer Perceptions)

The results indicated overall mean ratings of 2.82±1.06 and 3.13±1.07 for faculty members respectively. This indicated that faculty members were convinced that the university did not have facilitating conditions in the form of ICT infrastructure, technical help and training for the acceptance and adoption of e-learning. The university had no incentives for students and lecturers to adopt e-learning.

Factors Affecting Behavioural Intention to Adopt and Utilise e-learning by Faculty Members at Chinhoyi University of Technology

E-learning Performance Expectancy

E-learning performance expectancy descriptive statistics were obtained. The results indicated overall mean ratings of 4.01±0.91 and 3.89±1.02 for faculty members respectively. This indicated that both the lecturers and the students expected e-learning to improve their performance. Students were not concerned about increased access to lecturers through e-learning as they could access their lecturers in the current set-up where the lecturers were expected to be in their offices eight hours a day. Furthermore, these were full time students, some of whom resided on the campus where they had enough access to their lecturers.

Performance Expectancy of e-learning-faculty Members at Chinhoyi University of Technology

The highest mean rating for the performance expectancy construct by both faculty members was for increased access to online resources (4.44±0.81 and 4.47± 0.88) respectively. The results implied that respondents were more likely to adopt and utilise e-learning resources only if it improved their access to online resources.

E-learning Effort Expectancy

The results indicated overall mean ratings of 3.63±0.99 and 3.80±0.97 respectively. It followed that both faculty members were confident that they could learn how to use e-learning in teaching and learning. The highest mean rating for the effort expectancy construct by both faculty members was 3.94 ± 1.03 and 3.87 ± 0.91 for possessing the skills to use e-learning. Thus faculty members can easily adopt and utilise e-learning (Dečman 2015; Mohammadyari & Singh 2015; Venkatesh et al. 2003).

E-learning Effort Expectancy- Faculty Members

The results indicated that lecturers doubt the skills of their students in using e-learning (2.94±1.25). This rating shows that lecturers are not confident that the students are able to use e-learning if they adopt it. Hartweg (2016) envisages that teaching style is influenced by the type of students or the perceptions of the lecturer on the type of students they have.

Social Influence among Faculty Members

The results indicated overall mean ratings of 3.30±1.30 and 3.39±1.15 for faculty members respectively. It means that there was no social pressure on both the faculty members to use e-learning in teaching and learning. Using e-learning was viewed as prestigious by some lecturers (with the highest social influence mean rating of 3.53±1.46). However, lecturers did not see the importance of e-learning in enhancing their profile (mean rating 3.12±1.45). Furthermore, all their important stakeholders were not using e-learning (3.24±1.25). Similarly the students indicated that even though people important to them were using e-learning (3.54±1.13), they did not associate e-learning with prestige, smartness or status. This indicated that social pressures that would otherwise cause faculty members to adopt e-learning at CUT were either absent or not important. Social influence is generally known to positively influence behavioural intention to adopt and use a technology(Harsono & Suryana, 2014; Nysveen, Pedersen, & Thorbjørnsen, 2005). The absence of social pressures might therefore discourage adoption of e-learning.

The Relative Influence of Factors Affecting Behavioural Intention

The research study performed multiple regression analysis on the data to determine the relative influence of the factors affecting behavioural intention to adopt and utilise e-learning. Following are the results presentation and discussion.

Lecturers' and Students' Behavioural Intention to Adopt e-learning Model Summary

Results indicated a negative adjusted R square (-0.27) and a p value of 0.9. This result shows that the model was unreliable and insignificant. The independent variables did not

predict behavioural intention well. When the residual sum of squares approached the total sum of squares, explanation of the response variable was negligible, hence multiple regression reports a negative adjusted R square(Montgomery, Peck& Vining, 2012). This result could have easily been improved by increasing sample size (Montgomery, Peck & Vining 2012). More meaningful results were obtained in the students' model which had a much bigger sample size. The students model showed an adjusted R squared value of 0.25, $F = 3.80$ and $p = 0.01$. This meant that the predictors reliably accounted for 25% variation in the behavioural intention of students to use e-learning. The p value indicated that the model was significant. The low adjusted r square suggested that there were other factors that might not have been captured in this study that accounted for the variation of behavioural intention. On examination of the coefficients of the regression model, it was apparent that only performance expectancy was significantly accounting for the variation in students' behavioural intention ($p = 0.02$). The rest of the variables did not account for variation in students' behavioural intention well ($p>0.05$ in all other cases).

Performance expectancy had an unstandardised coefficient of 0.21 meaning five times increase in performance expectancy led to one unit increase in behavioural intention to use e-learning. This result points to the importance of a technology to significantly improve students' performance before they can adopt it. Users will easily adopt a technology if it improves their performance on their work(Chuah et al. 2016;Gangwar, Date & Ramaswamy 2015; Zhou, Lu & Wang 2010).Various authors concur that performance expectancy is one of the most important predictors of intention to use a technology and is significant in both voluntary and mandatory settings(Chuah et al, 2016; Gangwar et al. 2015; Venkatesh et al. 2003).

Possible Remedies to the Challenges of e-learning Acceptance and Adoption at Chinhoyi University of Technology by Students and Lectures

Remedies were based on the descriptive statistics for the actual usage of e-learning tools by faculty members. The results indicated that faculty members were using different types of e-learning tools. The e-portal was the most cited e-learning tool by lecturers followed by online resources. The most used tool by students was online web resources followed by the e-portal. It was apparent that the most used tool was the one that was available. The university continually encouraged the use of the e-portal to both faculty members resulting in the wrong interpretation of e-learning as meaning the use of the e-portal. It was interesting to note that YouTube was also cited as one of the most used e-learning tool by faculty members. YouTube has become very useful as an e-learning tool and has potential to transform the teaching and learning process in higher education(Allen, 2016). The results also show that social networks e.g. WhatsApp and Face book were being

used for e-learning by faculty members. These platforms had the potential to improve social interaction and social participation in e-learning (Doolan & Gilbert, 2017; Kong & Ko, 2017).

Recommendations by Faculty Members

The recommendations were grouped into 6 themes i.e. improving availability of the Internet, improving infrastructure, providing training, increasing technical assistance, making e-learning compulsory and continued availability of YouTube. Improving availability of the Internet included increasing the bandwidth, increasing the speed of the Internet, ensuring there is continuous availability of network and increasing Wi-Fi coverage in the university. Improving infrastructure included increasing computer laboratories, increasing ICT equipment, increasing internet access points on campus, improving electricity sockets and availability. The results are depicted in Figure 3.

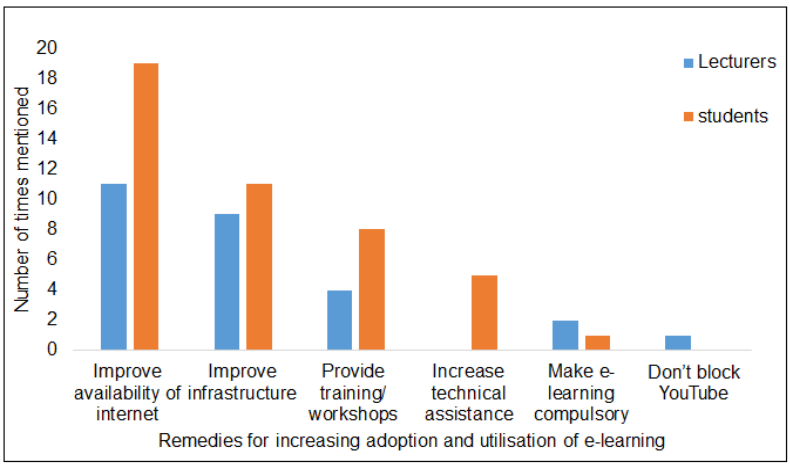

Figure 3: Lecturers' and students' recommendations on how to overcome the challenges of e-learning acceptance and adoption at CUT

Conclusion

The research evaluated the acceptance and adoption of e-learning by faculty members at CUT, School of Hospitality and Tourism and School of Wildlife, Ecology and Conservation. The objectives of the study were to1. Evaluate the adequacy of e-learning infrastructure and resources at CUT; 2. Establish the factors affecting behavioural intention to adopt and utilise e-learning by faculty members at CUT and; 3. Explore possible remedies to the challenges of e-learning acceptance and adoption at CUT. The study employed the positivist school of thought. A cross sectional survey was employed. All the lecturers (25) in the School of Hospitality and Tourism and School of Wildlife, Ecology and Conservation and 10% (50) of the students were included in the study. Cronbach's alpha reliability test with a threshold of 0.7 was employed. The study used descriptive analysis

and Multiple Regression Analysis in running lecture and student models of the factors that affect e-learning.

Faculty members were convinced that the university does not have facilitating conditions in the form of ICT infrastructure, technical help and training for acceptance and utilisation of e-learning. Although a number of factors (including performance expectancy, effort expectancy and social influence) potentially explain behavioral intention to use e-learning, it was strongly influenced by performance expectancy in this study. Lecturers and the students were confident that they could learn how to use e-learning. Furthermore there is no social pressure (social influence) on both the faculty members to use e-learning in teaching and learning. Faculty members will adapt and utilize e-learning when it improves their work especially through improving their access to online resources. The study established that to improve acceptance of e-learning the university should improve availability of the Internet, improve infrastructure, provide training, increasing technical assistance and not block YouTube. Improving availability of the internet resource was the most cited factor that will address the challenge of e-learning acceptance and adoption.

Recommendations

1. There was the need to improve availability of the Internet and Wi-Fi coverage in the University for e-learning to be accepted and utilised.
2. There was also the need for the university to use an interactive learning management system to increase interactivity that was lacking in the current e-portal.
3. There was the need for training of both students and lecturers in the use of e-learning.
4. The university should also provide incentives for using e-learning or disincentives for not using e-learning for it to be adopted.

Limitations of the Study

This is a case study of Chinhoyi University of Technology. The findings from this research cannot be generalised to other universities in the country which may have different prevailing conditions. The researchers had inadequate funding to conduct an effective comprehensive study of all universities in the country.

References

Allen, M. W. (2016). *Michael Allen's guide to e-learning: Building interactive, fun, and effective learning programs for any company*: John Wiley & Sons.

Bhuasiri, W, Xaymoungkhoun, O, Zo, H, Rho, J. J, & Ciganek, A. P. (2012). Critical success factors for e-learning in developing countries: A comparative analysis between ICT experts and faculty. *Computers & Education,* 58(2), 843-855.

Chitra A.P. and Raj M.A. (2018). E-learning. Journal of applied and advanced research. Phoenix research Publishers.

Dečman, M. (2015). Modeling the acceptance of e-learning in mandatory environments of higher education: The influence of previous education and gender. *Computers in human behavior,* 49, 272-281.

El-Masri, M, & Tarhini, A. (2017). Factors affecting the adoption of e-learning systems in Qatar and USA: Extending the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). *Educational Technology Research and Development,* 65(3), 743-763.

Elgort, I. (2005). *E-learning adoption: Bridging the chasm.* Paper presented at the Ascilite.

Garrison, D. R. (2011). *E-learning in the 21st century: A framework for research and practice*: Taylor & Francis.

Kasse, J. P, & Balunywa, W. (2013). *An assessment of e-learning utilization by a section of Ugandan universities: challenges, success factors and way forward.* Paper presented at the International conference on ICT for Africa.

Mohammadyari, S, & Singh, H. (2015). Understanding the effect of e-learning on individual performance: The role of digital literacy. *Computers & education,* 82, 11-25.

Montgomery, D. C, Peck, E. A, & Vining, G. G. (2012). *Introduction to linear regression analysis* (Vol. 821): John Wiley & Sons.

Olaniyi A.A. (2019). Application of Lickert scale type Cronbach's analysis in an airport reception study. *Scholar Journal of applied sciences and research. Innovation*. 2(4) 1-5

Santos, J. R. A. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of extension,* 37(2), 1-5.

Sarkar, S. (2012). The role of information and communication technology (ICT) in higher education for the 21st century. *Science,* 1(1), 30-41.

Surucu L and Maslakci A. (2020). Validity and reliability in quantitative research. *Business and management studies: An interactive journal*. 8(3) 2694-2726

Venkatesh, V, Morris, M. G, Davis, G. B, & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.

Weber, A. S, & Hamlaoui, S. (2018). *E-Learning in the Middle East and North Africa (MENA) Region*: Springer.

Yuen, A. H, & Ma, W. W. (2008). Exploring teacher acceptance of e learning technology. *Asia Pacific Journal of Teacher Education,* 36(3), 229-243.

Zhou, T, Lu, Y, & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in human behavior,* 26(4), 760-767.

EDUCATIONAL COGNITIVE SCIENCE ORIENTATION ON TEACHING COMPETENCY OF PROSPECTIVE TEACHERS

Bindhu N. N & Jahitha Begum. A

Abstract

The knowledge of Educational cognitive science(ECS) develops a deeper understanding of human cognition. Cognition is the process by which humans perceive and comprehend the world. It helps teachers to understand how students learn, interpret, process information and generate knowledge. The present study intended to find out the effect of Educational Cognitive Science orientation and its impact on the teaching competency of prospective teachers. An experimental method with a control and experimental group post-test design was only adopted on a sample of 100 prospective teachers (experimental group 50 and control group 50). The prospective teachers underwent Educational Cognitive Science orientation for 45 days. After orientation, Educational Cognitive Science Knowledge Assessment Test was used to assess their knowledge of ECS. The teaching competency scale was used to find out whether the knowledge of Educational Cognitive science enhances their teaching Competency. The findings revealed that Educational Cognitive Science orientation was found effective in enhancing the teaching competency of the prospective teachers.

Keywords: Educational Cognitive Science (ECS), Teaching Competency

Introduction

Knowledge building, construction, creation, or generations are based on the process of cognition. All kinds of learning are brain-based. According to Bruner (1986), Learning is an active process of acquiring and constructing meaningful experiences through interaction, exploration and reflection. Students learn to construct knowledge in a situation where they are free to interact, collaborate, discuss, do experiments, communicate, challenge, learn to enjoy authentic experiences and reflect. All these cognitive functions depend on the cognitive development of an individual. Cognitive growth and functioning rely on one's brain function. Information processing, storage, retrieval and retention are controlled by the brain and its inter-neuronal connections. Recent Brain research espave new dimensions in the educational field and enforce researchers, educators, teachers and learners to think differently.

Educational Cognitive Science

Educational Cognitive Science is an application of cognitive theories, principles and testing theories in the classroom/real world settings (McNamara,2006). Bringing Cognitive Science into Education signifies the need for having a sound knowledge base about cognition, its theories and principles. Knowledge of cognitive science, gives a strong idea about the brain, its organization, structure and function, and offer a scalar understanding of complex phenomen a such as memory, attention, thinking, reasoning, learning and consciousness. In short, Cognitive science is about cognition. Learning, memory, knowledge acquisition, language, comprehension, communication and social interactions in real settings particularly in messy classrooms may help to realize the limitations and problems of cognitive theories and the parameters of cognitive principles (McNamara, 2004).

Teaching Competency

Competency is more than knowledge and skills; it includes skills and attitude in a particular context. Competency is essential to an educator's pursuit of excellence. Teachers need a wide range of competencies in order to face the challenges of today's world. According to B.K. Passi & M.S. Lalitha (1994). Teaching competency is the effective performance of all observable teacher behavior, which leads to desired pupil outcomes. Here, the Teaching Competence of prospective teachers was assessed to identify the influence of educational cognitive science orientation through constructive pedagogy in their teaching. Effective teachers are expected to have a thorough knowledge of the content of their curricular areas, pedagogical capabilities, communication skills, and professionalism.

The knowledge base of cognitive science through Teacher Education programmes can provide deep knowledge on neuro-scientific dimensions of teaching and learning; which helps teachers to facilitate best practices in the classrooms (Mc bride & Todd, 2008). Quality of teachers depends on the quality of teacher education. Integrating Cognitive Science into education develops a basic understanding of cognition, its processes, cognitive theories and principles. It will enable the teachers to enhance their teaching competencies. Thus, the present study focused to find out the impact of Educational Cognitive Science on the teaching competencies of prospective Teachers.

Need of the Study

Enhancing the quality of teachers relies on the quality of Teacher education where the prospective teachers are molded. Quality input in teacher education includes quality teachers having sound theoretical knowledge, pedagogical skills, and teaching aptitudes. It

includes the proper method of teaching, practical-based training with a constructive feedback system and teacher-student interaction. The quality output is identified in terms of pedagogical skills, personal characteristic and enriched teaching aptitude of the student teachers. Only a competent and well-trained teacher can enhance the quality of teaching and learning. The competency of the teacher greatly depends on pre-service training and in-service training.

Cognitive Science, gives a strong idea bout brain, its organization, structure and function, and offers a clear understanding of complex phenomen a such as -memory, attention, thinking, reasoning, learning and consciousness, which are the building blocks in the process of knowledge construction. Introducing Cognitive Science to education develops a basic understanding of cognition, its processes, cognitive theories and principles. This inter disciplinary collaboration has a lasting impact in educational practice and can empower both educators and learners to be more effective in their endeavors. Educational Cognitive Science is defined as an application of cognitive theories, principles and testing theories in classroom settings/real world settings. i. provides opportunities for teachers. It understands cognitive processes which are fundamental to education: perception, thinking, attention, memory, language within the nervous system(Co oper, P.& Geake,J.,2003).ii. to create an environment that gives the student a higher probability of successinlearning.iii. To recognize the bases of individual differences of learners. Individuals differ greatly in their response to education, and both genes and the environment contribute to these differences (Lyons, A. C. & Langu is. L.M.2001).iv. To apply variety of teaching strategies. This knowledge will help teachers, prospective teachers teaching competencies.

Literature Review

Anderson (2009) emphasizes that the cognitive and neural sciences offer a new opportunity for teacher educators to prepare prospective teachers to create effective human learning in their classrooms. To become an effective teacher, it is important to have an awareness about the functions of the brain (Sasikumar et al., 2016). Teachers' awareness of the nervous system of the brain helps them to comprehend their students' behavior, learning preferences and perceptions. This knowledge grounds enable teachers to adopt brain compatible teaching strategies. Cognitive functions are brain-based skills related with the mechanisms of how we perceive remember, pay attention, think and solve problems etc (Jiawei Zhang (2019).

Lyons, & Langu is, 2001: Sasikumar, Fathima & Mohan (2016). Sasikumar, Fathima & Mohan (2016) proved that neuro cognitive intervention strategies enhance the teaching competence of student teachers and recommends the introduction of a theoretical base of

Neuro cognitive intervention strategies as a core subject in the B. Ed. curriculum to enhance the neuro cognitive process of learners. Seetharaman D (2015) reported that Hemi sphere city influences teachers teaching aptitude, cognitive style and academic proficiency and student teachers' academic achievement. Cherrier, et al (2020), executed Neuroscience and Strategies in Education intervention program (Neurostrat E), based on brain knowledge. Atherton, M. & Diket, R. (2005) examined the relevance of applying cognitive neuro sciences to educational practice and found that experts who are well-versed in both neuro science and educational research and theory could bridge the gap between the two fields. Richland, L & B jork, et al (2005), identified that Generation and inter leaving effects are relevant for instructional design,

Margaret Reynolds & Matthew Salters (1995) studied and signify three Models of Competence, a basis for the education and training of teachers. Behaviourist model focused on the inculcation of domain specific behaviours. The second, the process model, attempted to map out the process of competent action in terms of flexibility. Third, the cognitive model emphasized the importance to knowledge and understanding in underpinning competent action. Anderson (2009) emphasizes that the cognitive and neural sciences offer a new opportunity for teacher educators to prepare prospective teachers to create effective human learning in their classrooms. To become an effective teacher, it is important to have an awareness of the functions of the brain (Sasikumar et al., 2016). Teachers' awareness of the nervous system of the brain helps them to comprehend their students' capabilities. Fathima, Parimala, M., Revathi, Shanmuga, M.(2020),proved that Bio cognitive strategies is found to be effective in enhancing competence in teaching Biological science. In this study Bio cognition is a new integrated approach to understanding the biological basis of cognition in organisms and aimed to improve the teaching competence of B.Ed., students through Bio cognitive strategies. The cognitive processes are perception, memory and navigation. This provides an opportunity for prospective teachers to acquire a sound knowledge base about cognition, its theories and principles, which has a strong impact in real classroom settings, thereby enhancing teaching competency. However, the experimental study will she light and reveal new dimensions in the area soft he study. The problem of the study has been entitled as "Educational Cognitive Science and Teaching Competency of Prospective Teachers".

Objectives of the Study

- To find out the effect of educational cognitive science orientation on the teaching competency of prospective teachers.
- To find out the effect of educational cognitive science orientation on the teaching competency of prospective teachers with respect to the subjects, English, Malayalam, Mathematics, Natural Science, Physical Science and Social Science.

Hypotheses of the Study

- There is no significant difference between the teaching competency of experimental and control group prospective teachers.
- There is no significant difference between the teaching competency of experimental and control group prospective teachers with respect to the subjects, English, Malayalam, Mathematics, Natural Science, Physical Science and Social Science.

Method

An experimental method with a control and Experimental group post-test design was adopted. The experimental group chosen for the present study consists of 50 B. Ed teacher trainees (n=50) enrolled in the first year (2019 - 21) from SNDP Yogam Training College, Adimali, Idukki district. The control group consists of 50 B. Ed teacher trainees (n=50) enrolled in the first year (2019 - 21) from Sree Narayana College of Teacher Education, Muvattupua, Ernakulam district. They were assigned by using a simple random sampling technique. The Experimental and Control groups were equivalent with respect to their educational qualification, gender, age, management and time of presence in colleges.

Tools Used

The following tools were used for the study;

- Educational Cognitive Science Knowledge Test (ECSKT)
- Teaching Competency Scale (TCS)

The experimental group underwent 'Educational cognitive science orientation' for 45 days. No treatment was given to the control group. After orientation, administered Educational Cognitive Science Knowledge Test (ECSKT), and Teaching Competency Scale (TCS) were used for data collection from both the experimental and control groups.

Description of the Tools

The Educational Cognitive Science Knowledge Assessment Test consists of50 itemswith5 dimensions namely, ECS, Brain and learning, Cognitive skills, Neuroscience and Neuro transmitters. Each statement of the ECSKAT tool has four options a.b,c and d. Respondents have to choose the best answer for the given 50 items. The correct response given one mark and the in correct response was given a 'zero' mark. The liability co-efficient of this tool was found to be 0.73.

The Teaching Competence Scale (TCS) was designed and developed to assesstheinfluenceofeducationalcognitivescienceorientationthrough constructive pedagogy in the teaching of B.Ed teacher trainees. It was constructed under two dimensions'

Educational cognitive science (ECS), Constructive Pedagogies (CP), With 30 items. The statements were graded on a three-point scale.

Statistical Techniques

To analyze and interpret the data mean, S.D. and t- test were used.

Results

After experimentation, the participants were administered Educational Cognitive Science Knowledge Assessment Test (ECSKAT) and Teaching Competency Scale(TCS).The results are presented in the following tables.

Table – 1 Independent Sample t-test for significant difference between Control and Experimental Group in Teaching Competency (TCS) of B.Ed Teacher Trainees in the post-test

Participants	Post-Test of TCS			't' value	'p' value
	Sample	Mean	SD		
Control Group	50	68.50	10.670	5.875	0.000
Experimental Group	50	78.96	5.451		

Results of Independent Sample 't' test results indicate that there is a significant difference between the Control (*M* = 68.50, *SD* = 10.670) and Experimental Group (*M*= 78.96, *SD*=5.451), *t* (5.875), *p* = 0.000 Competency (TCS). The obtained t-value 5.875, is greater than the table value, which is significant at 0.05 level. Hence, the null hypothesis is rejected. i.e. the experimental and control group participants differ in their teaching Competence. It indicates that ECS orientation given to the experimental group was found effective in increasing the teaching competency of the prospective teachers.

Table – 2 Independent Sample 't' test for significant difference between Control and Experimental Group in Teaching Competency of B.Ed teacher trainees of English subject in post test

Participants	Post-Test of TCS in English			't' value	'p'-value
	Sample	Mean	SD		
Control Group	50(12)	71.58	11.024	2.076	0.062
Experimental Group	50(13)	79.33	3.627		

Independent Sample 't'-test results indicate that there is a significant difference between the Control (M = 71.58, SD = 11.024) and Experimental Group (M = 79.33, SD = 3.627), t (2.076), p = .062 in Teaching Competency. The calculated t value 2.076 is greater than the table value, which is significant at 0.05 level. Hence, the null hypothesis is rejected.ie the experimental and control group participants differ in their teaching Competence in post-test with respect to the English subject.

Table – 3 Independent Sample 't' test for significant difference between Control and Experimental Group in Teaching Competency of B.Ed teacher trainees of Malayalam subject in post test

Participants	Post-Test of TCS in Malayalam			't' - value	'p' - value
	Sample(N)	Mean	SD		
Control Group	50(7)	58.25	10.500	3.783	.032
Experimental Group	50(4)	77.00	3.162		

Independent Sample t-test results indicate that there is a significant difference between the Control (M = 58.25, SD = 10.500) and Experimental Group (M = 77.00, SD = 3.162), t (3.783), p = .032 in Teaching Competency. Hence, the null hypothesis is rejected. It indicates that the experimental group and control group participants differ in their Teaching Competency post-test with respect to Malayalam subjects.

Table – 4 Independent Sample 't' test for significant difference between Control and Experimental Group in Teaching Competency of B.Ed teacher trainees of Mathematics subject in post test

Participants	Post-Test of TCS in Mathematics			't' - value	'p' - value
	Sample	Mean	SD		
Control Group	50(7)	71.86	7.515	1.877	0.110
Experimental Group	50(10)	78.86	4.451		

Results of the Independent Sample, t' test indicate that there is no significant difference between the Control (M = 71.86, SD = 7.515) and Experimental Group (M = 78.86, SD = 4.451), t (1.877), p = .110 in Teaching Competency. Hence, the null hypothesis is accepted. It indicates that the experimental group and control group participants did not differ in their Teaching Competency in the post-test with respect to Mathematics.

Table – 5 Independent Sample 't'-test for significant difference between Control and Experimental Group in Teaching Competency of B.Ed teacher trainees of Natural Science subject in post test

Participants	Post-Test of TCS in Natural Science			't' - value	'p' - value
	Sample	Mean	SD		
Control Group	50(8)	60.50	13.939	2.237	0.075
Experimental Group	50(6)	77.00	6.542		

Results of the Independent Sample, t-test indicate that there is a significant difference between the Control (M = 60.50, SD = 13.939) and Experimental Group (M = 77.00, SD = 6.542), t (2.237), p = .075 in Teaching Competency. Hence, the null hypothesis is accepted. It indicates that the experimental and control group participants differ in their Teaching Competency in the post-test with respect to the Natural Science subject.

Table – 6 Independent Sample 't'-test for significant difference between Control and Experimental Group in Teaching Competency of B.Ed teacher trainees of Physical Science subject in post test

Participants	Post-Test of TCS in Physical Science			't' - value	'p' - value
	Sample	Mean	SD		
Control Group	50(7)	64.14	3.805	7.863	0.00
Experimental Group	50(15)	79.57	4.791		

Results of the Independent Sample 't-test indicate that there is a significant difference between the Control (M = 64.14, SD = 3.805) and Experimental Group (79.57, SD = 4.791), t (7.863), p = 0.000 in Teaching Competency. Hence, the null hypothesis is rejected. It indicates that the experimental and control group participants differ in their Teaching Competency in the post-test with respect to the Physical Science subject.

Table – 7 Independent Sample 't' test for significant difference between Control and Experimental Group in Teaching Competency of B.Ed teacher trainees of Social Science subject in post test

Participants	Post-Test of TCS in Social Science			't' - value	'p' - value
	Sample	Mean	SD		
Control Group	50(8)	76.67	8.505	0.330	0.772
Experimental Group	50(3)	73.33	10.599		

Results of the Independent Sample 't-test indicate that there is no significant difference between the Control (M = 76.67, SD = 8.505) and Experimental Group (M= 73.33, SD = 10.599), t (.330), p = .772 Teaching Competency. Hence, the null hypothesis is accepted. It indicates that the experimental group and control group did not differ in their Teaching Competency in post-test with respect to the Social Science subject.

Discussion

The result drawn from this research is that the Experimental group performed well based on their teaching competency. The control group chosen for the study belongs to the urban area compared with the experimental group. However, a kind of expectation exists that candidates from urban localities may excel in their academic performances due to the accessibility of all resources. But this result shows that the experimental group participants are better planners in executing innovative practices, good communicators and efficient in the skill of classroom management than the control group. It indicates that Educational Cognitive Science Orientation (ECS) orientation given to the experimental group was found effective in increasing the teaching competency of the prospective teachers. In light of the above discussion, the first hypothesis regarding teaching competency is rejected (table.1).
During ECS orientation, the researcher observed and found that some prospective teachers are not so competent. They have content knowledge but not well in their communication skills and classroom management. However, some have good content knowledge, pedagogical capabilities and professionalism. This indicates and reflects their personal interest and positive attitude towards the subject.

The statistical analysis and interpretation of data revealed that the experimental and control group participants differ in their Teaching Competency in the post test with respect to English, Malayalam, Natural Science and Physical science subject than mathematics and social science students. Prospective teachers from Physical Science showed better performance than other disciplines.

In short, the experimental and control group participants differ in their Teaching Competency in the post test with respect to English, Malayalam, Natural Science and Physical science subject than mathematics and social science students. The experimental group participants excel in their teaching competencies than the control group participants. It proved that the given Educational Cognitive Science (ECS) orientation was found effective and helped prospective teachers in enhancing their Teaching Competencies.

Conclusion

The present study proved that the knowledge of Educational Cognitive Science was very effective in enhancing the teaching competencies of prospective teachers. Knowledge of educational cognitive science provides new insight into teachers in understanding the cognitive process, individual differences of learners and how the brain influences learning. This study recommends the need to popularize Educational Cognitive Science by introducing it as a major subject in teacher education. Orientation programs should be organized at all levels of teacher education to understand and appreciate the impact of Educational Cognitive Science in teaching and learning.

References

Aggrwal, P. (2014). Teacher Competencies as identified by NCTE, *International Journal of Multidisciplinary Research and Development*, 1(6), 252-253.

Best, J. W & Kahn, J. V. (2006). *Research in Education*. New Delhi: Prentice Hall India.

Fathima, Parimala, M and Mohan, S. (2008). Effect of Meta cognitive Intervention strategies in enhancing teaching competency in B.Ed students.

Garrett, H. E. (2004). *Statistics in Psychology and Education*. New Delhi: Paragon International Publishers

Geake, J & Cooper. P (2003). Cognitive Neuroscience: Implications for Education. *Westminster Studies in Education*, 26(1).

Guilford, J. P. (1950). *Fundamental Statistics in Psychology and Education*. New York, McGraw Hill.

Kar, B. R. (2013). Cognition and Brain Development: covering evidence from various Methodologies, American Psychological Association, Washington.

Kellogg, R. T. (2007). Fundamental of Cognitive Psychology. New Delhi: Sage Publications.

Learning landscapes. (2011). Mind, Brain and Education: Implications for Education, 5(1).

Lyons, A. C. & Langu is. L. M. (2001). Cognitive Science and Teacher Education.

Mangal, S. K. (2002). Advanced Educational Psychology. New Delhi: PHI Learning Private Limited.

Mangal , S.K. (2005). Statistics in Psychology and Education (2nd Ed). New Delhi: Prentice Hall of India Private Limited.

McBride, H. E. A., & Pomeroy, M. (2009). From theory to practice: Introducing neuroscience into a teacher education program.

Mrgaret Reynolds & Matthew Salters. (1995). Models of Competence and Teacher Training. *Cambridge Journal of Education*, 25(3), 349-359.

Talkhabi M. (2012). Foundations of cognitive education: Issues and *opportunities. Procedia - Social and Behavioral Sciences*, 32, 385 – 390.

Weidman J, Baker K. (2015). The Cognitive Science of Learning: Concepts and Strategies for the Educator and Learner. *Anesth Analg*, 121(6): 1586-99.

INFLUENCE OF METACOGNITIVE ABILITIES ON MATHEMATICAL PROBLEM SOLVING ABILITY OF XITH STANDARD STUDENTS

Vijayarani. K & Sumathi. C

Abstract

The present study focused on exploring the relationship between the meta-cognitive ability of the students in mathematical problem solving among the XIth standard students. The sample is drawn using a simple random sampling procedure. About 120 students studying in XIth standard in the Coimbatore district in 3governmentand 3 private schools were considered for the study. A standardized Meta cognitive inventory tool was adopted for the study and a self-constructed and standardized tool for assessing the mathematical problem solving consisting of 30 objective type questions was used in the study. The results revealed that there is a significant relationship exists between meta cognitive ability and mathematical problem solving ability. There is no significant difference found based on the demographic variables such as gender, type of school and meta cognition of the students, whereas there is a difference in the meta cognitive ability based on the medium of instruction and locality in the schools.

Keywords: Meta Cognition, Problem Solving Ability, Meta Cognitive Problem Solving

Metacognition

"Metacognition is the one in which one is aware of their own learning or thinking process". It is also defined as the ability of a person to understand, analyses and control one's cognitive process involved in learning, "Metacognition"is often simply defined as "thinking about thinking". Defining metacognition is not that simple. Flavell, 1976 defines that, 'Metacognition is defined as knowledge and regulation of one's own thinking and learning'.

Fostering Metacognition in the Classroom

Learning is a journey taken by an individual. Metacognition awareness is a goal of the critical thinking classroom. This helps learners to understand how new knowledge builds on what they already know, to recognize how near knowledge might conflict with what they assume they already know and to transfer with what they have learned in the classroom.

Metacognition gives the ability to ask questions like a tutor which is truly representative of metacognitive awareness; the students who learn how to evaluate answer and judge good answer from the poor is the one who is thinking metacognition.

Metacognition would be better developed by open–ended group activities that help learners develop expertise from confusion and misunderstanding. Metacognition makes the students become more self-aware and purposeful about their learning in the classroom. So learning is like starting with a raindrop and ending with a bottle of water. The teacher can manipulate the strategies and techniques in the classroom in a way that suits the students.

Mathematical Problem Solving

Problem solving is a complex behavior. Problem solving has been touted as a primary focus for mathematics at all levels. (National council of supervisors of mathematics, 1987). Many students don't feel good about math, largely as a result of the way they have been taught. Because of the prevalent belief that classroom mathematics consists of mastering formulas, the students do not understand how mathematics can be meaningful.

Metacognition in Mathematical Problem Solving

Metacognition has the potential to increase the ability of the students in classroom learning and the creation of a "mathematics culture" in the classroom best fosters metacognition.

There are 3 aims of metacognition,

- To observe patterns of behaviors when students solve mathematical, problems.
- To observe the types of metacognition behaviors during mathematical problem solving.
- To understand the role of metacognition during problem solving.

Dimensions of Metacognition

Five dimensions of metacognitive abilities are Goal oriented, Problem solving ability, Motivation, Informative attitude and Organizing capacity

Objectives of the Study

1. To find out the metacognitive ability of XI^{th} standard students.
2. To find out the mathematical problem solving ability of XI^{th} standard students.
3. To find the influence of metacognitive abilities on mathematical problem solving ability of XI^{th} standard students.
4. To study the mathematical ability and metacognitive ability of the XI^{th} standard students in relation to the demographic variables.

Hypotheses of the Study

1. There is no significant difference among the subgroups of the sample with respect to metacognitive scores and problem solving ability score based on the gender, type of school, locality and medium of instruction.
2. There is no significant relationship between the metacognitive abilities scores and academic achievement scores of XIth standard students.

Review of Related Literature

Devaki and Rajni Singh (2019)assess the impact of metacognition on one of the language learning skills of listening as well as expectations and attainment of understanding, application of theoretical acquaintance, and learning effectiveness of listening skills among engineering students. The study proposes a five-step model of AWARE metacognition to support learners in better perceiving and replicating their learning.

Deepika Jain, Gyanesh Kumar Tiwari and Awasthi (2017)scrutinized the effects of metacognition and gender on academic modification and academic achievement of graduates. The outcomes of the study confirmed that no gender dissimilarities were found in metacognition and learning adjustment, with the exception of the academic accomplishment and academic achievement of male and female participants. The outcomes of the study also exhibited that scores on declarative knowledge, conditional knowledge, procedural knowledge, planning, information management, tracking, assessment components metacognition, debug, and overall, metacognitive perception exhibits a positive correlation with academic achievement, academic adjustment, and academic achievement.

Surinder Kaur and Rajbir Kaur (2016) test high school students' academic achievement in relation to problem-solving ability and metacognition. 200 students enrolled in the CBSE 11th grade science stream, as well as the Amritsar County PSEB, participated in the study. The metacognitive problem-solving skills questionnaire was used to collect data. The results showed no significant difference between CBSE and PSEB of medical students in their metacognition. A significant difference was found in the problem-solving ability of CBSE and PSEB students in the medical stream. At the same time, no significant relationship was identified between metacognition, problem-solving ability, and student achievement, with no significant interaction effects between metacognition and problem-solving ability.

Methodology

Normative survey design was adopted to study the meta cognitive and problem solving ability of the students.

Population

Students studying in the class XIth in government and private school situated in the Coimbatore District are considered for the present study.

Sample

Random sampling technique was used in selection of students. The samples of 120 students of class XIth were selected for the present study

Tools and Techniques Used for the Data Collection

A meta cognition questionnaire is a standardized tool. It is used to assess the meta cognitive ability of individuals under five different dimensions.

- Goal Orientation
- Problem solving ability
- Motivation
- Informative attitude
- Organizing capacity

The investigator has chosen the present topic to analyze the meta cognitive ability of XIth standard students. This Sc haw and Dennison meta cognitive inventory (2004) questionnaire provides the reader to choose any one of the four options provided. The questionnaire consists of 52 items. Goal orientation dimension consists of 10 items, Problem solving ability consists of 10 items, Motivation consists of 11 items, Informative attitude consists of 11 items and Organizing capacity consist of 10 items.

Table – 1 Distribution of items under five dimensions

Dimension	Items	Total
Goal Orientation	1 to 10	10
Problem solving ability	11 to 20	10
Motivation	21 to 31	11
Informative attitude	32 to 42	11
Organizing capacity	43 to52	10

Schraw and Dennison's (2004) Meta cognitive inventory questionnaire is used in the present study. This questionnaire consists of 52 questions under five dimensions such as

goal orientation, problem solving, informative attitude, organizing capacity and motivation. Four-point scale is used. All the questions are positive questions; hence the scoring is given as 4,3,2,1

Hypothesis-1: There is no significant difference among the subgroups of the sample with respect to meta cognitive scores and problem solving ability scores based on gender, type of school, locality and medium of instruction.

Gender	Number	Mean	Standard Deviation	t - value	Level of Significance
Boys	60	75.07	6.82	0.44	Not Significant
Girls	60	74.53	6.51		
Government	60	64.53	6.32	1.34	Not Significant
Private	60	63.07	5.58		
English Medium	75	75.25	7.00	4.43	Significant
Tamil Medium	45	70.57	3.88		
Rural	82	70.93	6.46	4.27	Significant
Urban	38	76.53	6.78		

From the above table, it could be concluded that there is no significant difference in the calculated t value based on the gender and type of school with regard to the meta cognitive ability of the XI^{th} standard students. Hence the null hypothesis in the case of gender and the type of school is accepted.

It was also found from the above table that the calculated 't' value in the case of the medium of instruction and locality there is significant differences exist in among the samples of the class XI^{th} students. Thus it could be concluded that the null hypothesis is rejected in the case of the medium of instruction and locality with respect to the meta cognitive ability.

Hypothesis-2: There is no significant relationship between the meta cognitive ability and the mathematical problem solving ability

Variables	Correlation Value
Meta cognition and Academic Achievement	0.72

From the above, table it is clear that there is a significant relationship exists between the meta cognition and academic achievement of the students. Hence it could be concluded

that the ability of students' mathematical problem solving is directly influenced by their meta cognitive ability.

Conclusion

Thus from the above study, it could be concluded that the meta cognitive ability of the students in the case of gender and type of school shows no difference but there is a difference in the case of the medium of instruction and locality of the students. It was also found that a significant relationship exists between the meta cognitive analysis and the academic achievement of the students. Hence the teacher should provide ample exercises in the classroom to the students towards the development of meta cognitive sill thus helping the student towards moving higher in the cognitive ladder of higher-order thinking which in turn supports the students in their mathematical problem solving ability.

References

Devika & Rajni Singh. (2019). Influence of meta cognitive awareness on engineering students' performance: a study of listening skills. *Procedia Manufacturing*, 31, 136-141.

Garner, R. (1987). *Meta cognition and reading comprehension*. Norwood, N.J: Ablex.

Goos , M., and Galbraith, P. (1996). Mathematical Problem solving. *Educational Studies in Mathematics*, 30(3), 229-260.

Jain D, Tiwari G K, & Awasthi. I D. (2017). Impact of Meta cognitive Awareness on Academic Adjustment and Academic Outcome of the Students. *International Journal of Indian Psychology*, 5, (1). 123-138.

Schraw, G. And Dennison R.S. (1994). Assessing meta cognitive awareness. *Contemporary Educational Psychology*, 19(4), 460-475.

Shimamura, A. P. (2000). Toward a Cognitive Neuroscience of Meta cognition. *Consciousness and cognition*, 9(2), 313-323.

Surinder Kaur & Rajbir Kaur. (2017). Academic Achievement in relation to Meta cognition and Problem Solving Ability among Secondary School Students. Scholarly Research Journal for Humanity Science & English Language, 4(24), 6551-6564.

AN INVESTIGATION ON ATTITUDE TOWARDS ONLINE CLASSES AMONG HIGH SCHOOL TEACHERS

Kannan. B & Sengamalam @ Vaanathi. R

Abstract

This present investigation made an attempt to study the attitude towards online classes among high school teachers who are handling classes for VI to X Standard in the Virudhunagar district where the investigator collected the data from 240 high school teachers using a tool that was constructed and validated by him. In this digital scenario and especially in the pandemic situation of COVID-19, the need for online classes is realized and adopted by teachers in various ways at all levels. It is also important to have an attitude towards such online classes so as to make it fruitful to elicit its best result ever. Thus, this investigation focused to study the level of attitude towards online classes among the selected sample of this study and to study the significant difference in their attitude towards the online class with respect to their background variables – Gender, Locale, Types of Working School and Teaching Subject. This investigation revealed that there is a significant difference in the level of attitude toward online classes among the sample of this study. Also, this investigation found that the high school teachers of this study residing in urban locale working in private schools have a higher attitude towards online classes than the teachers from rural locale working in government schools and there is no significant difference in the attitude towards online class among the high school teachers with respect to Gender and Teaching Subject.

Keywords: Attitude, Online Class, High School Teachers

Introduction

Education is one of the important tools to make society develop and spending money for education is an investment to have life-long benefits in a productive way. Giving education to any child cannot be stopped for any reason so as to avoid the development of any community to which she/he belongs. Digital learning and digital platforms for learning are inevitable in this present scenario. Especially, this pandemic situation made each and every person move towards online practice for different reasons. When the lockdown was initiated, the entire world was just stunned for a period to make it realized and for think of further alternate ways to precede their business further. A big question was raised how the

education gap would be filled particularly at the school level, since tertiary level students have some knowledge in use of different modes of learning through different platforms for some particular learning or course at least. Even though some schools introduced techno-classrooms and integrated different multimedia inputs for their students in somewhat developed regions of few societies, most of the schools in developing countries like India has still faced challenges in providing such techno-classroom teaching for such a huge population with less men and material infrastructures and resources. Though we the world lost many things by the spread of COVID-19, this situation drilled all level teachers make them to adopt many techno-based teaching through available platforms, apps and media to a greater degree. Of course, teaching through media, e-platforms, apps, etc., are practiced and executed by the teachers to some extent so as to fulfill their contribution in this pandemic situation, but it is also accepted that the attitude of teachers towards online class particularly among school teachers are to be studied. It is again also accepted that once online resources are created, it could be an intellectual assert in education. It is significant to study the attitude among the teachers towards online class especially in this pandemic since they were also suffered psychologically and economically and the concept of work from home is also new to our context due to many domestic reasons especially in developing countries like India with huge population. Online learning and online teaching are not new concept, but the situation is new for our school teachers with the limited resources and with more restrictions and limitations in different aspects.

Review of Related Literature

Alla Belousov et al. (2022) made a study on 'Attitude to Distance Learning of Schoolchildren and Students: Subjective Assessments of Advantages and Disadvantages'. This study showed that schoolchildren do not intend to continue studying in the distance form if they choose, with a generally positive attitude towards distance learning. Cevik et al. (2022) made a study on 'Investigating Students' e-Learning Attitudes in Times of Crisis (COVID-19 Pandemic)', and it revealed that the CSE of pre-service teachers was determined to predict their AMOTV significantly and positively. Erdogmus et al., (2022) made a study on 'Students' Knowledge Sharing Behaviours and Sense of Online Learning Community in Online Learning Environments'. It stated that participants' sense of community in online learning and knowledge sharing behavior were high and also students' knowledge sharing behaviours and sense of community in online learning environment are affected by grade level, department, number of entry and online duration. Ferrer et al. (2022) made a study on 'Students' Motivation and Engagement in Higher Education: The Importance of Attitude to Online Learning'. Attitude to online learning mediated the relationships of both intrinsic motivations to know and extrinsic motivation with

engagement, indicating that the design of online learning environments can play a role in enhancing learning experiences.

Jessical Wilhelm et al. (2021) made a study on 'Perceptions, Satisfaction, and Performance of Undergraduate Students during COVID-19 Emergency Remote Teaching (ERT)'. This study suggested that there should be mandatory synchronous video sessions, peer-to-peer interaction and feedback and the use of accessible, informal means of communication, such as Slack or Microsoft Teams. Ulum, Hakan (2022) made a meta-analysis study on 'The Effects of Online Education on Academic Success'. This meta-analysis study consists of 27 studies in total. The meta-analysis involves the studies conducted in the USA, Taiwan, Turkey, China, Philippines, Ireland, and Georgia. The heterogeneity test results of the meta-analysis study displayed that the effect size does not differ in terms of class level, country, online education approaches, and lecture moderators. Ustin et al. (2022) made a study on 'Attitudes of Foreign Language Teaching Students towards Online Learning'. This study concluded that male participants accepted online learning more than female participants, the participants' attitudes towards online learning did not differ according to their departments and the general acceptance perceptions of online learning of the participants in the third grade were higher than the participants in the second grade. Vikas et al., (2022) made an exploratory study on 'An Empirical Study of Student Perception towards Pedagogy, Teaching Style and Effectiveness of Online Classes'. The findings of the study indicate that the pedagogy, teaching style and teaching effectiveness significantly affect student perception towards online classes by first time online teachers.

From the review of related literatures, there is no study in the specified area with high school teachers as sample. Hence, the investigator has chosen this investigation to do his contribution in the research.

Need for the Study

From the review of the related literature above, it is found that there is no study done on their attitude towards online class among high school teachers particularly teachers handling classes form VI to X Standard. Present new normal situation made us to have online transactions in purchasing, ordering food and groceries, releasing movies, applying and attending interview for job, medical counseling, repairing the home appliances by online instructions, etc., to a greater degree. Particularly, when lock-down announced, there was a question how to fill the educational gap among the students especially among school students. Thanks to educational technology which made the entire process of education moved through different types of platforms, apps and media applicable to the learners'

level. In our context with less infrastructures, it was so difficult to initiate this type of teaching strategies and approaches among the teachers of high school level particularly to some degree. Hence, this study has its significance to investigate among the school teachers especially who are handling classes from VI to X Standard of Virudhunagar District.

Objectives

1. To find the level of attitude towards online class among the high school teachers of the selected sample of this study
2. To find the significant difference in the attitude of online classes among the high school teachers with respect to:
    - Gender
    - Locale
    - Types of Working School and
    - Teaching Subject

Hypotheses

1. There is no significant difference in the level of attitude towards online class among the high school teachers of the selected sample of this study
2. There is no significant difference in the attitude of male and female high school teachers towards online class
3. There is no significant difference in the attitude of rural and urban locale residing high school teachers towards online class
4. There is no significant difference in the attitude of government and private school working high school teachers towards online class
5. There is no significant difference in the attitude of arts and science subject teaching high school teachers towards online class

Method

The investigator used the normative survey method for this present investigation.

Sample and Sampling Technique

A sample of 240 high school teachers teaching from VI standard to X Standard working in schools of Virudhunagar district were taken for this survey by using stratified random sampling technique.

Tool

Attitude Rating Scale towards Online Class is five-point rating scale was prepared and validated by the investigator. The reliability of the score is 0.82 arrived from split-half method and the validity was done with experts from field of education and educational technology. The tool consists of 25 items where 9 items are negative items and thus the total maximum score is 125 and Minimum is 25. The scoring of the scale is 5, 4, 3, 2 and 1 for positive items and 1, 2, 3, 4, and 5 for negative items with the ratings of 'to a greater extent', 'to a substantial extent', 'to some extent', to a marginal extent', and 'to a negligible extent.

Statistical Technique Used

The investigator used the following statistical techniques for this study:

- Descriptive Analysis
- Percentage Analysis and
- Differential Analysis

Analysis & Interpretations

Table – 1 Distribution of the Sample

Variable	Sub-variables	No. of High School Teachers	Percentage
Gender	Male	72	30.00
	Female	168	70.00
Locale	Rural	174	72.50
	Urban	66	27.50
Types of Working School	Government	153	63.75
	Private	87	36.25
Teaching Subject	Arts	128	53.33
	Science	112	46.67

From the table:1,

- It is found that 30% of the sample are Male Teachers and 70% are Female teachers; more than 70% (72.5%) of the sample are from the rural locale and 27.5% of them from urban locale; more than 60% (63.75%) of the sample are working in Government schools and 36.25% of teachers working in Private Schools and; 53.33% of the sample of this study are teaching Arts Subjects and 46.67% are teaching science subjects.

Table -2 Level of Attitude towards Online Class among High School Teachers

Attitude towards Online Class	Low		Average		High	
	N	**%**	**N**	**%**	**N**	**%**
	32	13.33	118	49.17	90	37.50

From the Table: 2,

- It is found that approximately 13% of the sample is having low level attitude towards online classes, nearly 38% of them are high level attitude and nearing to 50% of high school teachers possess average level attitude towards online classes. Thus, the null hypothesis, H_{01} is rejected.

Table -3 Significant Difference in the Attitude of High School Teachers towards Online Class with respect their Background Variables

Background Variable	Attributes	N	Mean	Standard Deviation	t-value	Remarks
Gender	Male	72	102.23	12.32	0.997	NS**
	Female	168	101.84	11.78		
Locale	Rural	174	100.45	12.04	2.034	S*
	Urban	66	104.12	11.99		
Types of Working School	Government	153	101.84	13.45	2.212	S*
	Private	87	103.99	11.32		
Teaching Subject	Arts	128	100.98	12.12	1.625	NS**
	Science	112	101.01	12.38		

** - Not significant at 0.05 level

*- Significant at 0.05 level

From Table: 3,

- It is found that the mean scores of attitudes of male and female high school teachers towards online classes do not differ significantly and thus there is no significant difference in their attitude towards online classes among the high school teachers with respect to Gender. Therefore, the null hypothesis, H_{02} is accepted.
- It is found that the mean scores of attitudes of rural and urban locale residing high school teachers towards online classes differ significantly and thus there is a significant difference in their attitude towards online classes among the sample with respect to Locale. Therefore, the null hypothesis, H_{03} is rejected.

- It is found that the mean scores of attitudes of high school teachers towards online classes working in government and private schools differ significantly and thus there is a significant difference in their attitude towards online classes among the sample with respect to Types of Working School. Therefore, the null hypothesis, H_{04} is rejected.
- It is found that the mean scores of attitudes of high school teachers towards online classes who are teaching arts and science subjects do not differ significantly and thus there is no significant difference in their attitude towards online classes among the selected sample of this study with respect to Teaching Subjects. Therefore, the null hypothesis, H_{05} is accepted.

Major Findings and Interpretations

From this study, it is inferred that only 13% of the sample of this study are possessing low level attitude towards online class; remaining sample have appreciable attitude towards online class. It is revealed that the Gender and Teaching Subject are not contributing their role in making difference in the attitude towards online class among the selected sample of this study. The locale and types of working school are influencing to some extent to have difference in the attitude towards online class among the sample where the teachers belonging to urban locale and the teachers working in private school are having more attitude than their counterparts. These may be due to the resources available in their place with equipped infrastructures on comparing with the teachers of lower attitudes with respect to rural locale teachers and teachers working in government schools.

Educational Implications

Online classes is an unavoidable element in the present teaching-learning scenario. The struck in the path of educational process was realized by COVID-19 pandemic and it still continues. The only way we the teacher could lead the situation successfully by this online class to a greater extent. Of course, an effective teacher cannot be replaced by any technology, but without technology, teachers cannot stand in the digital classroom, the need for the day. This pandemic situation made all the teachers technologically competent with digital diversity. It is important to have high level of positive attitude towards online classes among the teachers in all levels without any disparity so as to meet the challenge of the world class digital learners.

Conclusion

Online Learning, Online Education, Remote Learning, Mobile Learning, Individualized Instruction, Open Educational Software, etc., are widely heard now and are healing the current educational deficits to a greater extent. It is important to have such

opportunities and availabilities for our students to meet the challenge of world education. Without the appreciable level of attitude of teachers towards online classess at all levels, the dream of digital learners will not be attained. There is no other way to escape from this digital requirement and equipment among all teachers to challenge digital learners in a productive way. Hence, it is important to enhance and enrich the techno-pedagogy skills right from the teacher-education programmes effectively without compromising their quality so as to get the best output of them when the, teachers come to their real teaching situation in this digital era especially.

References

Bartholomay, Daniel, J. (2022). A Time to Adapt, not "Return to Normal": Lessons in Compassion and Accessibility from Teaching during COVID-19. *Teaching Sociology*, 50(1), 62-72.

Best W J and Kahn J. (1996). *Research in Education*. New Delhi: Prentice Hall of India Pvt. Ltd.

Cevik, Mustafa; Bakioglu, Busra. (2022). Investigating Students' E-Learning Attitudes in Times of Crisis (COVID-19 Pandemic). *Education and Information Technologies*, 27 (1), 65-87.

Charin Mangkhang & Nitikorn Kaewpanya. (2021). The Digital Etiquette Enhancing to Global Citizenship of Social Studies Teachers in a New Normal Society. *Higher Education Studies*, 11(3).

Ferrer, Justine; Ringer, Allison; Saville, Kerrie; Parris, Melissa A.; Kashi, Kia. (2022). Students' Motivation and Engagement in Higher Education: The Importance of Attitude to Online Learning. *The International Journal of Higher Education Research*,83(2), 317-338.

Gururaj C S. (2021). Teacher's Attitude towards Online Teaching. National Virtual Conference on "*New Education Policy: A Quality Enhancer for Inclusion of Human Values in Higher Education Institutions*".

Nagarajn K., Srinivasan R & Mary Vijayakumar. (1994). *Research Methodology in Education*. Chennai: Ram Publications

Ulum, Haken, (2022). The Effects of Online Education on Academic Success: A Meta-Analysis Study. *Education and Information Technologies*, 27(1), 429-450.

Ustun, Bilal., AksuAtac & Bengu. (2022). Attitudes of Foreign Language Teaching Students towards Online Learning. *International Online Journal of Education and Teaching*, 9(1), 333-342.

Vikas, Sona., Mathur., Ashish. (2022). An Empirical Study of Student Perception towards Pedagogy, Teaching Style and Effectiveness of Online Classes. *Education and Information Technologies*, 27(1), 589-610.

OPINION OF HIGHER SECONDARY STUDENTS, PARENTS AND TEACHERS TOWARDS THE NEET EXAMINATION

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Abstract

In India, the National Eligibility cum Entrance Test-NEET, formerly the All India Pre-Medical Test (AIPMT) is an examination conducted for students who wish to study Graduate (MBBS) and Postgraduate medical courses (MS, MD) and dental courses (MDS, BDS) in private or government medical colleges and dental colleges respectively in India. NEET-UG (Undergraduate) for MBBS and BDS courses. This study aims to find out the opinion of students, parents and teachers toward the NEET examination. The participants were 100 students, 50 parents, and 50 teachers from the Dindigul district, Tamil nadu, India selected for the present study. The findings revealed that the curriculum, evaluation process and transaction of the curriculum in schools for NEET have to be improved by training the students in higher-order thinking skills would help to face the NEET appropriately.

Keywords: NEET Exam, Higher Order Thinking Skills

Introduction

Medical education is education interrelated to the practice of being a medical practitioner with either the initial training to become a physician. (i.e., Internship and medical school) or additional training after that (e.g., fellowship and residency continuing medical education) Medical education and training vary considerably across the world. Various teaching methodologies have been utilized in medical education, which is an active area of educational research. The National Eligibility cum Entrance Test (NEET), formed the All India Pre-Medical Test (AIPMT) is an examination in India. These students wish to study MBBS (Undergraduate) and postgraduate medical courses (MS, MD) and dental courses (MDS, BDS) in Private or government dental colleges and medical colleges respectively in India. NEET-UG for MBBS and BDS courses is currently conducted by the Central Board of Secondary Education (CBSE) which also leads NEET-SS in partnership with Parametric Private Limited headquartered in the USA. NEET-Under Graduate replaced the All India Pre-Medical Test (AIPMT) and all individual MBBS exams conducted by states or colleges themselves in 2013.

NEET-Under Graduate is a single entrance exam for admission to more than 66,000 MBBS and BDS seats across India. In the year 2018 NEET exam, 1.86% of the candidates wrote the test in Tamil, around 80% in English, 11% in Hindi, 4.31% in Gujarati, and 3% in Bengali. From 2019, the National Testing Agency will conduct NEET, instead of CBSE. UG courses Institute of Medical Sciences in New Delhi and Jawaharlal Institute of Postgraduate Medical and Education Research (JIPMER) were outside the NEET's purview, as separate laws set up these institutes.

History of the NEET Examination

NEET was initially planned to take place on or after 2012 onwards. The several reasons for the CBSE and Medical Council of India (MCI) deferred NEET by a year. The Government of India announced the exam was held for the 1st time on 5th May 2013 across India for students in search of admission to both UG and PG Medicine. On 18 July 2013, Supreme Court gave the decision in support of 115 petitions were canceled the NEET exam and announced that the Medical Council of India could not interfere with the admission processes done by the colleges. The Following declaration from the MCI that it would introduce the NEET-Undergraduate exam in 2012, several states including Tamil Nadu, Andhra Pradesh, Karnataka, West Bengal and Gujarat strongly disparate the change, stating that there was an enormous variation in the syllabus proposed by the MCI and their state syllabi. Even though NEET 2016 is conducted in Hindi and English, it was noticed that students could write an exam in Tamil, Telugu, Bengali, Gujarati, Marathi and Assamese languages from 2017 onwards. The Odia and Kannada languages are added to the list so that students can write the exams in nine (9) Indian languages and English. The Supreme Court of India (SCI) quashed the NEET for admissions into all medical and dental colleges on 18 July 2013. The apex court ruled that the MCI cannot conduct a unified exam. According to 2013 announced by the Central Board of Secondary Education (CBSE), CBSE planned to conduct AIPMT on 4 May 2014. The final decision on NEET-UG was planned to be taken after the verdict of the SCI. The Central Board of Secondary Education (CBSE) announced the results and All India Merit List for NEET-UG. The merit list and the waiting list are prepared as per the directives of the Supreme Court of India, DGHS, MCI and DCI.

The results for 2013 were declared on 5 June. NEET was announced illegal and unconstitutional by the SCI in 2013. But, it was re-establishing on 11 April 2016, after a 5-judge Constitution bench remembered the earlier decision and allowed the Central Government (CG) and the Medical Council of India (MCI) to implement the common entrance exam until the court decides afresh on its validity. All India Pre-Medical Test (AIPMT) was held on 1 May 2016, considered the first phase of the NEET exam. Students who registered for 1st Phase with the chance to appear for the next phase of NEET held on

24 July 2016, but with the condition for the candidates have to give up their NEET Phase 1 score. The above dates are as per the order of the Supreme Court. From the four majors for Physics, Chemistry, Botany & Zoology, there are 45 questions from each of the sections. A correct response gives the candidate three marks while one mark is reduced for all wrong answers. The candidate has not attempted a question No marks in every question. This exam's total time duration is of 3 hours.

In NEET-Exam Post Graduate, the question paper is divided into three parts: The first Part A has 50 questions, Second Part B has 100 questions while third Part C has 150 questions. 4 marks are awarded for each correct answer, while 1 mark is reduced for every wrong answer. The candidate has not attempted a question No marks. The exam's total time duration is of 3 hours 30 min. The Medical Council of India (MCI) declared the syllabus for the NEET- Exam on Undergraduate in 2011. The syllabus has initially published as a draft to invite feedback from other stakeholders. The syllabus for NEET-Exam on Post Graduate is the same as that of the MBBS course described in the Medical Council India Regulations concerning Graduate Medical Education, 1997. The multiple-choice questions (MCQs) will be based on the MBBS (UG) syllabus, as will the knowledge that needs to be acquired during the internship period, which is also described in said regulation. The distribution of questions and model question method of tie-breaking for ranking has been placed on the website, as well as the Prospectus. NEET Exam Undergraduate syllabus consists of concepts taught in standards 11 and 12 in the Indian School Systems. These all subjects taught during MBBS, which includes Pre-Clinical, Para-Clinical and Clinical subjects are evaluated in NEET-PG. The Undergraduate NEET exam is currently conducted by the CBSE and was held for the first time on 5 May 2013. The Common Entrance Test (CET), also known as the NEET Postgraduate exam, is for admission to postgraduate medical courses across India. It was held online from 23 November to 6 December 2012. The AIIMS will conduct a separate medical entrance test for MDS courses on 13 January 2013. There was a controversy that emerged due to the dress code regulations in 2017.

Review of Literature

Sri Gangaram Biswakarma (2014), conducted a study on medical education in Arunachal Pradesh. The researcher concluded that the essential aspect of medical education presently is the establishment and development of medical institutes to give access in the state. Anjali Solanki Surrender Kashyap (2014) conducts a study on 'medical education in India. The m objective of the study is to achieve a higher standard of medical education.

The investigation concludes that in order to achieve higher standards of medical education assessment methodologies needed to be improved and the redesign of curricula

must be done, which results in the desired change in the medical system. Serampore Goswani (2015), conducted a study on "problems and challenges in medical education in India" The main objective of the study is to explain in various challenges of medical education in India. The Investigator concludes that medical education should aim to progress by training a compassionate, professionally excellent and ethically sound individual who will go out as cadres of the health team and healing communities' medical education should be integrated problem based and evidence teaching implemented.

Janmejaya Samal and Ranjit Kumar Dehury (2016), conducted a study on "An evaluation on Medical Education, Research and development of AYUSH system of medicine through Five-year plans of India". These objectives are to gain insight into the prior and existing initiatives which would enable reflection of future change. The Investigators conclude that a very optimistic approach to spreading India's own Medical heritage is the need of the hour. Teena Shareef & Maria Kurian (2016), conducted a study on "one country one test - A survey on national eligibility cum entrance test". The objective of the study is to analyze the student's suggestions about whether the new system will add more merits than the state entrance test. From this study, the Investigator concludes that the state Entrance provides a better chance for students to secure medical admission. Shamika Ravi, Dhruv Guptha, Jadyn William (2017), conducted a study on "Restructuring the medical council of India" the main objective of the study is to give, so recommendations to build a modern healthcare accreditation system. The Investigator adapted the survey method for this study. Finally, the Investigator concludes that the creation of a regional medical council is the compliance of the medical assessment and rating board and individual medical professionals and professional medical affiliations. Satendra Singh (2018) conducted a study medical council of India's new guidelines on the admissions of persons with specified as disabilities and unfair discriminatory and unlawful. The objective of the study is to comment and explains the medical council of India (MCI) s recent guidelines on the admission of persons with specified disabilities into the medical course under the disability. The Investigator concludes that it is unethical to label candidates with a disability and it is UNCRPD are respected and that the provisions of the RPWD act are carried out.

Statement of the Problem

Many economically backward students, SC and ST studying in Government schools could not face NEET Examination as they were not prepared. There is an unequal between the school curriculum and the NEET curriculum. The evaluation system in the school is entirely focused on lower-order thinking skills, whereas the NEET examination focuses on higher-order thinking skills. There exists a lot of stress among the students due to NEET. In Tamil nadu, many students committed suicide. Hence it is essential to know the opinion of

students, parents and teachers regarding the NEET Examination. Therefore, this study is undertaken. The course gives the scope to know the opinion of students, parents and teachers who face many issues and challenges in writing the NEET Examination. Hence it is essential to know the opinion of students, parents and teachers toward the NEET Examination. Hence this study is undertaken. The study gives the opinion of Higher Secondary students, Parents and Teachers opinion on the NEET Examination.

Objectives of the Study

The following are the objective of the study.

1. To know the opinion of Higher Secondary Students towards the NEET examination.
2. To know the opinion of parents towards the NEET examination.
3. To know the opinion of higher secondary teachers towards the NEET examination.
4. To find out the relationship or difference in opinion of students, parents and teachers towards the NEET examination.

Materials and Methods

The Investigator used survey method for the study. The quality of the survey depends upon the thoroughness of the planning, soundness of the planning, the soundness of sampling, the adequacy and reliability of data, the quality of analysis and the interpretation of the findings. The Survey is a non-experimental, descriptive research method. The Survey can be useful when a researcher wants to collect data on a phenomenon that cannot be directly observed. These survey methods for collecting information with reported by individuals. This are a type of data collection known as self-report data, which means that individuals complete the Survey (or provide information themselves). Data may be observed, or interviewing or mailing questionnaires. The analysis of data may be made by simple or complex statistical techniques depending upon the objectives of the study (Best, John. W,1998). Data are sometimes collected through the utilization of questionnaires, though generally researchers directly interview subjects. The survey is often qualitative (e.g. raise open-ended questions) or quantitative (e.g. use forced-choice questions) measures.

Sample of the Study

The sample is representative of the population. The Investigator selected Government Higher Secondary School, Koothampatti, Loyola Higher Secondary School, Hanumantharayan kootai, Annamalayar Girls Higher Secondary School, Nehruji Higher Secondary School, St. Josephs Girls Higher Secondary School and Our Lady of Lourdes Girls Higher Secondary School from Dindigul district for conducting the Survey. From this school's 100 students, 50 parents, 50 teachers were selected for this present study.

Tool for the Study

An opinion air re is the Tool used to get the opinion of students, parents and teachers towards NEET examination. Three different tools are used separately. In the opinion naire, both Closed ended and Open ended questions were framed. The opinion air re contains 25questions for students, 24 questions for teachers, 19 questions for parents. In students 21 questions are 'YES' or 'NO' type questions and 4 questions are open-ended questions. In teachers, 21 questions for 'YES' or 'NO' type questions and 3 questions are open-ended questions. In parents, 15 questions are 'YES' or 'NO' type questions and 4 are open-ended type questions.

Analysis and Interpretation

The data collected is analyzed to get meaning and interpretation, using qualitative as well as quantitative techniques. Statistics is the body of mathematical techniques or processes for gathering organizing, analysis, and interpreting numerical data. Because most research yields such qualitative data, statistics is a basic tool of measurement, evaluation, and research.

Table - 1 Percentage Analysis of Student's Opinion on NEET Examination

S.No.	Content	Yes (%)	No (%)
1	NEET Exam very important	27	73
2	Accepting NEET Exam	44	56
3	NEET Exam curriculum easy	21	79
4	Related to higher secondary curriculum	56	44
5	Easy to write in Tamil language	51	49
6	NEET Exam promotes intelligence	52	48
7	Writing model exams	31	69
8	Testing the intelligence	56	44
9	Creating awareness to parents	62	38
10	Sufficient time given in coaching centres	19	81
11	Fees is moderate and payable	27	73
12	Talented teachers in coaching centres	47	53
13	School teachers give guidance	61	39
14	Adopt new approaches in learning	36	64
15	Classroom teaching is helpful to NEET Exam	35	65
16	NEET Exam is the only means of producing talented doctors	33	67
17	Health condition is affected due to NEET Exam	54	46

18	Mental health affected due to NEET Exam	55	45
19	Coaching centres are near by	20	80
20	Rules and regulation of NEET Exam	24	76
21	Conducive environment helps to face NEET Exam	35	65

From the above percentage analysis of student's opinion towards NEET Examination, the following interpretation can be drawn, 81% of the students stated the no sufficient time is given in the NEET coaching centre. 80% of the students stated that there is no coaching centre for NEET Examination nearer to their area. 79% of students felt that the curriculum for NEET exam is not easy. 76% of the students stated that the Rules and Regulations of NEET Exam is unacceptable. 73% of the students felt that the NEET Exam is not much important. 73% of the students felt that a fee for coaching centres is high. 69% of the students felt that they didn't write any model exams for NEET Exam. 67% of the students oppose that NEET Exam is the only means of producing doctors. 65% of the students told that there is no conductive environment to face NEET Exam. 65% of the students informed that the classroom teaching is not helpful to NEET Exam. 64% of the students informed that they didn't adopt new approaches for learning in NEET Exam.

Table – 2 Percentage Analysis of Parents Opinion On NEET Examination

S.No.	Content	Yes (%)	No (%)
1	Awareness	56	44
2	Accepting NEET Exam	56	44
3	Permission to coaching centres	60	40
4	Fees is satisfactory	36	64
5	Rules and regulations of NEET Exam are acceptable	38	62
6	Exam centres are very distant	60	40
7	Fear about results	56	44
8	Guidance to NEET Exam	62	38
9	Utility to society	58	42
10	Conducive Study environment	52	48
11	Govt initiatives to NEET Exam	40	60
12	Adequate Coaching classes for learning	48	52
13	Technological problems	52	48
14	Health conditions of students	58	42
15	Mental health of students	54	46

From the above percentage analysis of the parent's opinion towards NEET Examination, the following interpretation can be drawn**,** the opinion of 64% parents is that

the fees is not affordable. 62% of the parents felt that Rules and Regulations of NEET Examination are not acceptable.60% of the parents felt that Government initiative to NEET Exam is not much effective.58% of the parents felt that they couldn't able to provide proper guidance to their wards when they failed in NEET Exam. 62% of the parents commented that they provide proper guidance to their wards in NEET Exam.60% of the parents informed that the exam centers for NEET Exam are very far away. 60% of the parents told that they would allow their wards to attend coaching centres for NEET Exam.58% of the parents felt that the health condition of their wards get affected when they prepare for NEET Exam.

Table – 3 Percentage Analysis of Teachers' Opinion On NEET Examination

S.No.	Content	Yes (%)	No (%)
1	Accepting NEET Exam	34	66
2	Preparing students to face NEET Exam	82	18
3	Students understand easily	14	86
4	Employ new strategies in teaching	72	28
5	Conducting model exam	56	44
6	Giving guidance to students	84	16
7	School curriculum is prepared for NEET Exam curriculum	62	38
8	Adequate time to teach NEET curriculum	30	70
9	Students are mentally affected	66	34
10	Teachers understanding NEET curriculum easily	40	60
11	Time is sufficient	4	96
12	Students nearly to accept coaching	32	68
13	Difference in school and NEET Exam curriculum	82	18
14	Creating awareness to students	62	38
15	NEET curriculum is easy	16	84
16	Guidance about the Importance of NEET Exam	90	10
17	NEET Exam promotes Intelligence of students	78	22
18	NEET Exam curriculum is heavy	64	36
19	Adequate time to cover the syllabus	20	80
20	NEET Exam is the only source for creating talented doctors	18	82
21	Conducive environment is created	64	36

From the above percentage analysis of teachers' opinions towards the NEET Examination, the following interpretation can be drawn, 96% of the teachers felt that the

time is not enough to prepare the students for NEET Exam. 86% of the teachers opined that the students were not able to understand the curriculum of the NEET Exam easily. 82% of the teachers felt that NEET Exam is not the only source for emerging talented doctors. 80% of teachers said that there is no adequate time to cover the syllabus for NEET Exam. 63% of the teachers didn't accept the NEET Exam. 90% of teachers told that they give guidance to the students about the importance of the NEET Exam. 84% of teachers told that they give counselling to the students about NEET Exam. 82% of the teachers told that they prepare the students to attend NEET Exam. 82% of teachers felt that there is a vast difference between the school and NEET Exam curriculum. 78% of teachers informed that they promote the intelligence of the students regarding the NEET Exam. 72% of teachers agreed that they handled new strategies to teach the curriculum of the NEET Exam. 66% of teachers informed that the curriculum of the NEET Exam affects the mental health of the students.

Findings

The major finding 81% of the students stated that no sufficient time is given in the NEET coaching centre. 80% of the students stated that there is no coaching centre for NEET Examination nearer to their area. 79% of students felt that the curriculum for the NEET exam is not easy. 76% of the students stated that the Rules and Regulations of the NEET Exam is unacceptable. 73% of the students felt that the NEET Exam is not much important. 73% of the students felt that fees for coaching centers is high. 69% of the students felt that they didn't write any model exams for NEET Exam. 67% of the students oppose the NEET Exam is the only means of producing doctors. 65% of the students told that there is no conducive environment to face NEET Exam. 65% of the students informed that classroom teaching is not helpful to NEET Exam. 64% of the students informed that they didn't adopt new approaches for learning in NEET Exam. The opinion of 64% of parents is that the fees are not affordable. 62% of the parents felt that the Rules and Regulations of the NEET Examination are not acceptable. 60% of the parents felt that the Government initiative to NEET Exam is not much effective. 58% of the parents felt that they couldn't able to provide proper guidance to their wards when they failed in NEET Exam. 62% of the parents commented that they provide proper guidance to their wards in NEET Exam. 60% of the parents informed that the exam centers for NEET Exam are very far away. 60% of the parents told that they would allow their wards to attend coaching centre's for NEET Exam. 58% of the parents felt that the health condition of their wards get affected when they prepare for NEET Exam. 96% of the teachers felt that the time is not enough to prepare the students for NEET Exam. 86% of the teachers opined that the students were not able to understand the curriculum of the NEET Exam easily. 82% of the teachers felt that NEET Exam is not the only source for emerging talented doctors. 80% of

teachers said that there is no adequate time to cover the syllabus for NEET Exam. 63% of the teachers didn't accept the NEET Exam. 90% of teachers told that they give guidance to the students about the importance of the NEET Exam. 84% of teachers told that they give counselling to the students about NEET Exam. 82% of the teachers told that they prepare the students to attend NEET Exam. 82% of teachers felt that there is a vast difference between the school and NEET Exam curriculum. 78% of teachers informed that they promote the intelligence of the students regarding the NEET Exam. 72% of teachers agreed that they handled new strategies to teach the curriculum of the NEET Exam. 66% of teachers informed that the curriculum of the NEET Exam affects the mental health of the students.

Education Implications

The Present study has many important implications for Teachers, students, and Parents, particularly the study highlighted that NEET Examination is not accepted by Parents, Teachers as well as students. The curriculum for NEET Exam is too heavy for the students. The study also reveals that most of them oppose the NEET exam. The study also reveals that classroom Teaching and Teaching methodology along with the curriculum need to be improved in order to prepare the students for NEET examinations. The study also reveals that there is no proper guidance provided to the students regarding the NEET examination. This study stressed the important role of teachers, and Parents in improving the achievement of Students in the NEET examination.

Conclusion

The present study was conducted to know opinions among students, parents and teachers regarding the NEET examination. From the data collected from the survey, the investigator concludes that the NEET exam is a necessary one but proper guidance must be given to the students. In order to face the NEET, the curriculum, evaluation process and transaction of the curriculum in schools have to be improved, training the students in Higher order thinking skills would help to face the NEET appropriately. The questions should be asked only from the curriculum that the students are studying.

References

Anjali solank, surrenarkasyap. (2014). Medical education in India; current challenges and the way forward from http://scholar.google.co.in/scholar.

Benley George, shibu Thamassebattin, A survey on NEET-MDS examination among dental graduates in South India from http://www. Ijcommdent.com/article.asp.

Jackson, S.L. (2009). *Research Methods and Statistics: A Critical Thinking Approach.* 3rd edition", Belmont, CA Wadsworth.

Janame jayasamal, Ranjit kumardehury. (2016). An evaluation on medical education. Research and development of AYUSH system of medicine through five years plans in India from http://scholar.google.co.in/scholar.

Jitendrapatel, Pratik Akhani. (2017). Perception of first-year MBBS students towards orientation program and foundation course at entry level from http://scholar.google.co.in/scholar.

John W. Best. (2004). *Research in Education*. Prentice Hall of India (Pvt) Ltd.

Kothari. C.R. (2007). *Research Methodology*. New age international Pvt Ltd, New Delhi.

Louis D. Brandeis. (2017). NEET is Need, indeed – Tamil Nadu from http://scholar.google.co.in/scholar.

Meenal Kulkarni. (2017). Medical internship training challenges and possible solution from http://scholar.google.co.in/scholar.

Praveenlal Kuttichira, Tom Thomas. (2017). NEET Agarwal. J.C. (1994). *Essential of Education Research*. New Delhi, Ary Book Department.

Sanjay kumarsadhukhan. (2017). Assessment of the reason for specialization in public health among students of all India institute of hygience & public health from http://scholar.google.co.in/scholar.

Satendra singh. (2018). Medical Council of India's new guidelines on admission of persons with specified disabilities; unfair discriminatory and unlawful from https://wwjournals.com/index.php.

Serampore Goswami. (2015). Problems and challenges in medical education in India from http://scholar.google.co.in/scholar.

Shamika Ravi, dhruvguptha, Jadyn William. (2017). Restructuring the Medical Council of India from http://scholar.google.co.in/scholar.

Sri Gangaram Biswakarma. (2014). Medical education in Arunachal Pradesh, from http://scholar.google.co.in/scholar.

Teena shareef, Maria Kurian. (2016). One country one test- A survey on national eligibility cum entrance test from http://scholar.google.co.in/scholar.

Vijaya lakshmi. G., Siva pragasam. C. (2008). *Research Methods Tips and Techniques.* Chennai, MJP Publishers.

https://en.wikipedia.org/wiki/Education in India.

https://en.wikipedia.org/wiki/Medical college in India

https://en.wikipedia.org/wiki/National Eligibility and Entrance Test cite note-29

https://help.surveyanyplace.com/en/support/solutions/articles/35000042308-closed-ended-question

https://explorable.com/types-of-survey-questions

ATTITUDE TOWARDS READING HABIT AMONG HIGH SCHOOL TEACHERS

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Abstract

Reading plays an important role for all of us and it opens the doors to the assets of knowledge. It is known that reading is one of the important language skills and it is a vital tool for lifelong learning for all. Reading is the heart of any academic world and thus teachers should develop appropriate teaching skills through their effective reading and thus should have an appropriate attitude towards reading skills. The present study aims at investigating the attitude of reading habits among the 300 high school teachers with respect to their background variables working in Madurai District. This investigation is carried out by using a standardized tool that was developed and standardized by the investigators. This study found that there is a significant difference in the level of attitude toward reading habits among the selected sample of this study and it revealed that there is a significant difference in the scores of constructed attitude scale with respect to the background variables with respect to chosen dimensions of Reading Habit Rating Scale.

Keywords: Attitude, Reading Habit, High School Teachers

Introduction

Reading is defined as an activity of interpreting written discourse. It is also defined as reading as a process of understanding the real meaning of what writers delivered in written form through eyes and mind (Thanuskodi, 2011). As per Lone, 2011, reading is the ability to recognize and examine words or sentences and understand the given information within. On the other hand, simple reading is an activity to interpret the meaning behind what the writer of the content in the written form. The word 'reading' comes from 'read' which means to look at and understand the meaning of written or printed words or symbols; it means that reading is a process of gaining what the authors mean in printed form (Oxford Dictionary). In general, 'habit' is a routine of behaviour that is regularly repeated and tends to occur subconsciously (Wikipedia). It is a well-known truth that any new behaviour can become automatic through the process of habit formation. Also, when behaviours are repeated in a constant context, there is an increase in the link between the context and the action and thus this increases automatically in that context. In precise, habits are rituals and behaviours that we people perform automatically, allowing us to carry out necessary

activities like brushing, bathing, dressing, etc., and following the same routes every day without any hurdles and being done naturally. If an individual reads habitually, that is frequency, and then this activity is called 'Reading Habit' (Chettri & Rout, 2013). Reading is one of the best learning activities that anyone can do in one's life ever and hence the main thing is developing the habit of reading all. The reading habits develop connective habits – visualizing, activating diagrams, questioning, inferring, determining importance, monitoring for meaning, and synthesizing.

Importance of Reading Habit

It is an accepted truth that reading habits often show signs of advanced intelligence levels. In addition, the following are some of the importance of reading habits:

- **Helps to Think Deeply:** Reading habits make an individual think beyond the level and help in developing deeper thinking to have a creative side stronger and to arrive at a smart solution for a given/faced problem.
- **Making Good in Everything:** Reading good books or content helps in reducing stress with less cost without changing the context of living or being.
- **Develop Vocabulary:** Reading more content and concept are not only making the reader a deeper knowledgeable, creative thinker, and spending time meaningfully, but it also develops huge vocabulary enrichment among the reader for his further creative and better understanding with a speedy reading style.
- **Increase the Range of Perception:** Reading helps in developing perception skills among the readers since time, climate, duration, type, style, etc., of the content of reading helps the learners to have different perceptions and knowledge of generalizing the learned perception to lead final concrete perception as a result of reading through his/ her deeper understanding.
- **Provide First-Hand Knowledge:** Many books especially fiction-like books are holding real-life events which make the learner first-hand knowledge and help them to have new knowledge through the life experiences of others easily using their different inspirations.

Significance of the Study

Reading a book is beneficial for expanding brain muscles for healthy functioning and better memory supremacy. Reading habits enrich the reader's self-improvement such as positive thinking, understanding the world around him in a better way, and making the mind active to produce creative thinking. Reading habits also help in developing good communication skills provided with increasing knowledge; it also reduces stress to a greater degree since it makes the readers seek pleasure through their reading. Reading any content is not only meant for memorizing the event for further use and also enhances imaginative

power and capacity for creativity. In addition, reading habits develop analytical thinking and reduce the boredom of leisure time to use their time productively. Teachers are the co-learner of their students since they have to be connected with their students through the trends of the day. The mode of reading and medium of accessing content may differ depending upon their availability and accessibility; the reading habit should be maintained for their development in general and career enrichment in particular. As reading habits help in developing personal and academic qualities among all people, it is important to have such habits among the teachers to make their classroom interaction more active by means of connecting learned content through their reading of different types of content and concepts.

In order to realize the importance of reading and make those habits for their betterment in a teaching context, it is important to have a good level of attitude towards reading habits among the teachers initially. Hence, this study is significant to investigate the attitude of reading habits among high-school teachers, especially with respect to their background variables since they are handling the students in the transition stage from high to higher secondary level.

Objectives

- To find the level of attitude towards reading habits among high school teachers in the selected sample of the study
- To find the significant difference in attitude towards reading habits with respect to the following background variables:
- Gender
- Nature of Residence
- Type of Family
- Spouse Occupation
- Type of Working School
- Computer Knowledge

Hypotheses

- There is no significant difference in the level of attitude towards reading habits among high school teachers
- There is no significant difference in the attitude towards reading habits of male and female teachers of the selected sample
- There is no significant difference in the attitude towards reading habits of rural and urban residing teachers of the selected sample
- There is no significant difference in the attitude towards reading habits same field and different field working spouses of teachers of the selected sample

- There is no significant difference in the attitude towards reading habits of government and private school working teachers of the selected sample
- There is no significant difference in the attitude towards reading habits of basic and advanced computer knowledge teachers of the selected sample

Method

The investigator adopted a normative survey method for this study.

Sample

The investigator has taken 300 high school teachers who are handling classes between VI to X in the district of Madurai. Clustered sampling technique is used to collect the data for this study.

Tool

The tool 'Attitude towards Reading Habits among High School Teachers' was developed and standardized with a reliability score of 0.813 using the split-half method with 30 teachers as a pilot study by the investigator for this study. It consists of four dimensions of 5 items each. Thus, the total item is 20 with a maximum score of 100 and a minimum score is 20 with the following responses and scores respectively as to a greater extent, 'to a substantial extent', 'to some extent', 'to a marginal extent', and 'to a negligible extent' with 5, 4, 3,2 and 1 score as a score.

Statistical Techniques

The following are the statistical techniques used for this investigation:

- Percentage Analysis
- Descriptive Analysis and
- Differential Analysis

Analysis and Interpretation

Table – 1 Distribution of the Selected Sample of the Study

Variable	Sub-variables	No. of High School Teachers	%
Gender	Male	102	34.00
	Female	198	66.00
Nature of Residence	Rural	188	62.67
	Urban	112	37.33
Types of Family	Nuclear	197	65.67
	Joint	103	34.33

Spouse Occupation	Same Field	76	25.33
	Other Field	224	74.67
Types of Working School	Government	213	71.00
	Private	87	29.00
Computer Knowledge	Basic	216	72.00
	Advanced	84	28.00

From Table-1, it is observed that 34% of them are male and the remaining 66% are female teachers; more than 60% (62.67%) of them are residing in a rural background and more than 365% of them (37.33%) are from the urban residential background; like the way, high school teachers of a selected sample of this study belonging to the nuclear family are of 65.67% and jointly family are 34.33%; the spouse field of occupation of the same field are of only 25% and remaining nearly 75% are of different field of occupation; in the same way, the teachers of this study working in government schools are 71% and remaining 29% of them working in private schools and; in the case of knowledge in the computer of a selected sample of this study, more than 70% (72%) of them are possessing basic knowledge in computer whereas remaining 28% of them have advanced level knowledge in computer.

Table – 2 Level of Attitudes towards Reading Habits among High School Teachers

Dependent Variable	Dimensions	Level of Attitude towards Reading Habits					
		Low		Average		High	
		N	%	N	%	N	%
Attitude towards Reading Habits	Academic Reading	32	10.67	188	62.67	80	26.66
	Leisure Time Reading	86	28.67	183	61.00	31	10.33
	Reading for the Assigned Task	28	09.33	193	64.33	79	26.34
	Reading in Interested Author/Magazines	92	30.67	179	59.67	29	09.66

It is observed from Table-2, Only 10% of the sample have a low-level attitude in the academic reading dimension of reading attitude and more than 60% of them are average level in that dimension whereas more than 20% (26.66%) of them are in high-level attitude with respect to that dimension. In contrast to this, the leisure time reading dimension possess only 10% (10.33%) of high-level attitude whereas low-level is nearly 29% (28.67%) and like the previous one, the average level of attitude of this dimension is almost equal to that of previous dimension (61%). In the case of Reading for the Assigned Task dimension, less than 10% (9.33%) of them are a low-level attitude whereas more than 25% (26.34%) of them are in high-level attitude and like the previous two dimensions, the average level is more than 60% (64.33%). In opposite to this dimension, low and high-level are just reversed such as more than 30% are low-level attitudes in Reading in Interested

Author/Magazines dimensions and less than 10% (6.66%) are high-level attitudes but the average level of this dimension too nearer to 60% (59.67%) as all dimensions of this attitude scale.

Table – 3 Significant Difference in the Scores of Reading Habits Attitude of High School Teachers with respect to GENDER

Dependent Variable	Dimensions	Gender	N	Mean	S.D.	t-value	Remarks
Attitude towards Reading Habits	Academic Reading	Male	102	84.10	07.21	1.710	NS**
		Female	198	83.84	08.12		
	Leisure Time Reading	Male	102	88.22	10.01	3.589	S*
		Female	198	86.34	10.38		
	Reading for the Assigned Task	Male	102	86.92	11.52	3.013	S*
		Female	198	84.02	10.04		
	Reading in Interested Author/Magazines	Male	102	84.94	09.50	1.407	NS*
		Female	198	85.09	10.31		

** - Not Significant at 0.05 level* - Significant at 0.05 level

It is observed that there is no significant difference between the male and female high school teachers in Academic Reading and Reading in Interested Author/Magazines dimensions of Attitude towards Reading Habit of this study. It is also found that there is a significant difference between the male and female teachers of the selected sample in Leisure Time Reading and Reading for the Assigned Task dimensions.

Table – 4 Significant Difference in the Scores of Reading Habits Attitude of High School Teachers with respect to the Nature of Residence

Dependent Variable	Dimensions	Nature of Residence	N	Mean	S.D.	t-value	Remarks
Attitude towards Reading Habits	Academic Reading	Rural	188	84.22	07.10	1.312	NS**
		Urban	112	83.92	08.68		
	Leisure Time Reading	Rural	188	84.69	10.78	3.589	S*
		Urban	112	86.02	10.22		
	Reading for the Assigned Task	Rural	188	85.56	10.42	1.704	NS**
		Urban	112	84.89	09.06		
	Reading in Interested Author/Magazines	Rural	188	84.38	10.21	2.897	S*
		Urban	112	86.01	09.78		

** - Not Significant at 0.05 level* - Significant at 0.05 level

From Table-4, it is found that there is a significant difference in attitude towards reading habits between the rural and urban residing teachers with respect to Leisure Time Reading and Reading in Interested Author/Magazines dimensions. In contrast, there is no

significant difference in attitude towards reading habits between the teachers of rural and urban residing with respect to Academic Reading and Reading for the Assigned Task of this investigation.

Table – 5 Significant Difference in the Scores of Reading Habits Attitude of High School Teachers with respect to the Types of Family

Dependent Variable	Dimensions	Type of Family	N	Mean	S.D.	t-value	Remarks
Attitude towards Reading Habits	Academic Reading	Nuclear	197	85.85	10.21	1.241	NS**
		Joint	103	86.02	09.55		
	Leisure Time Reading	Nuclear	197	86.62	10.44	4.011	S*
		Joint	103	83.04	09.35		
	Reading for the Assigned Task	Nuclear	197	84.98	09.02	1.704	NS**
		Joint	103	84.89	11.02		
	Reading in Interested Author/Magazines	Nuclear	197	86.22	10.38	3.781	S*
		Joint	103	83.27	10.87		

** - Not Significant at 0.05 level * - Significant at 0.05 level

From Table-5, it is found that there is no significant difference in the attitude towards reading habits between the teachers of this investigation belonging to nuclear and joint families with respect to Academic Reading and Reading for Assigned Task dimensions. It is also found that there is a significant difference in the attitude towards reading habits between the selected sample belonging to nuclear and joint families with respect to Leisure Time Reading and Reading in Interested Author/Magazines dimensions.

Table – 6 Significant Difference in the Scores of Reading Habits Attitude of High School Teachers with respect to the Spouse Occupation

Dependent Variable	Dimensions	Spouse Occupation	N	Mean	S.D.	t-value	Remarks
Attitude towards Reading Habits	Academic Reading	Same Field	76	86.12	11.06	1.033	NS**
		Other Field	224	85.92	09.18		
	Leisure Time Reading	Same Field	76	86.62	10.34	3.022	S*
		Other Field	224	83.04	09.85		
	Reading for the Assigned Task	Same Field	76	86.61	11.01	1.704	NS**
		Other Field	224	86.90	10.21		
	Reading in Interested Author/Magazines	Same Field	76	86.28	09.47	3.661	S*
		Other Field	224	84.07	10.33		

** - Not Significant at 0.05 level * - Significant at 0.05 level

From Table-6, it is observed that there is no significant difference in the attitude towards reading habits between teachers whose spouses of the same and different fields of occupation with respect to Academic Reading and Reading for Assigned Task dimensions. It is found that there is a significant difference in the attitude towards reading habits between the high school teachers whose spouses of the same and different fields of occupation with respect to Leisure Time Reading and Reading in Interested Author/Magazines dimensions.

Table – 7 Significant Difference in the Scores of Reading Habits Attitude of High School Teachers with respect to the Types of School

Dependent Variable	Dimensions	Type of School	N	Mean	S.D.	t-value	Remarks
Attitude towards Reading Habits	Academic Reading	Government	213	85.43	10.54	0.983	NS**
		Private	87	85.55	10.07		
	Leisure Time Reading	Government	213	85.12	09.24	1.457	NS**
		Private	87	84.97	09.05		
	Reading for the Assigned Task	Government	213	86.33	10.41	1.207	NS**
		Private	87	86.27	09.30		
	Reading in Interested Author/Magazines	Government	213	85.28	11.20	1.501	NS**
		Private	87	85.47	11.48		

** - Not Significant at 0.05 level * - Significant at 0.05 level

From Table - 7, it is found that there is no significant difference in the attitude towards reading habits between the teachers working in government and private schools with respect to all the noted dimensions of this study namely Academic Reading, Leisure Time Reading, Reading for Assigned Task Dimension and Reading in Interested Author/Magazines.

Table – 8 Significant Difference in the Scores of Reading Habits Attitude of High School Teachers with respect to the Computer Knowledge

Dependent Variable	Dimensions	Computer Knowledge	N	Mean	S.D.	t-value	Remarks
Attitude towards Reading Habits	Academic Reading	Basic	216	86.02	11.22	1.890	NS**
		Advanced	87	85.97	09.89		
	Leisure Time Reading	Basic	216	85.44	10.08	1.389	NS**
		Advanced	87	85.02	10.33		
	Reading for the Assigned Task	Basic	216	86.34	09.25	3.542	S*
		Advanced	87	84.11	10.23		
	Reading in Interested Author/Magazines	Basic	216	85.78	10.42	1.457	NS**
		Advanced	87	86.02	09.38		

** - Not Significant at 0.05 level* - Significant at 0.05 level

From Table - 8, it is found that there is a significant difference in attitude towards reading habits between the teachers of basic and advanced computer knowledge with respect to reading for assigned task dimensions whereas other dimensions of attitude towards reading habits do not have any significant difference between the teachers of basic and advanced computer knowledge of this investigation.

Findings

The aim of the present study investigating the attitude of Reading habits among high school teachers working in the Madurai District. It is found that nearly 60% of the chosen sample possessed an average level attitude towards reading habits in all dimensions noted for this study. Considering Academic Reading and Reading for Assigned Task dimensions, nearly 26% of them are high-level attitudes, and more or less equal to 10% of them are low-level attitudes in that dimension. In contrast to these, in the case of Leisure Time Reading and Reading in Interest Authors/Magazines dimension, nearly 30% of them are low-level attitudes and more or less equal to 10% of them are high-level attitudes. It is found that female teachers scored more than males in the case of Leisure Time Reading and Reading for Assigned Task dimensions. Urban residential background plays an important role to have more scores in Leisure Time Reading and Reading in Interested Authors/Magazines since they may have more time than people from rural residential backgrounds. In the same way, nuclear family belonging teachers have more scores than the joint family with respect to Leisure Time Reading and Reading in Interested Authors/Magazines. It is evident that the same field occupation of spouses of Teachers scored higher in Leisure Time Reading and Reading in Interested Authors/Magazines since they may be jointly reading and involved with those types of reading. This study revealed that the types of working schools did not give space for having differences in the score of Attitude towards Reading Habits among the teachers with respect to all the taken dimensions. This study gave the result that teachers of basic computer knowledge have more scores than the teachers of advanced computer knowledge in Reading for Assigned Work Dimension since there are no differences in other dimensions and teachers have basic computer knowledge may have more reading habits since they may be drawn the information for their assigned work through comparably reading more materials than their counterparts.

Conclusion

Reading is one of the language skills and it could be practiced right from primary education throughout the world. The interest in reading is to be developed among the learners, especially from the initial stage itself. Reading is unified with the entire educational process and thus its success requires successful reading. As per the quote, ‘readers are the leaders, everyone should promote good reading habits to attain the level of

leadership since reading is nothing but a form of participation for the successful completion of any task. Reading habit becomes an inherent tutor that especially teachers carry everywhere throughout their lives. Reading habits develop competent delivery content with multiple examples and explanations since reading enhances a variety of strong emotions when reading takes place effectively. If reading habits should be developed among the students, the teacher should have a sound attitude towards reading habits so as to implement them in his action predominantly. Teachers are role models directly or indirectly and thus they should have meaningful reading habits not only in the subject and subject-related books or materials and also should read all types of content so as to connect them for their effective teaching-learning context productively.

References

Aditya, D. S. (2021). Embarking Digital Learning Due to COVID-19: Are Teachers Ready? *Journal of Technology and Science Education*, 11(1), 104-116.

Alkodimi, K. A., & Al-Ahdal, A. A. M. H. (2021). Strategies of Teaching Writing at Saudi Tertiary-Level Institutions: Reality and Expectations. *Arab World English Journal*, 12(2),399-413.

Anthony J. Applegate and Mary Dekontly Applegate. (2004). The Peter Effect: Reading Habits and Attitudes of Pre-service Teachers. *The Reading Teacher, International Literacy Association and Wiley*, 57(6), 554-563.

Bamise, O. F., & Akande, S. O. (2021). Gender Differences in the Reading Habits of Secondary School Students of Osun State Public Schools. *African Educational Research Journal*, 9(3), 720-727.

Best W J and Kahn J. (1996). *Research in Education*. New Delhi: Prentice-Hall of India Pvt. Ltd.

Can, S., & Qzturk, G. (2019). Determination of Pre-Service Science Teachers' Attitudes towards Reading Science Texts. *International Journal of Evaluation and Research in Education*, 8(1), 181-188.

Chettri & Rout. (2013). Reading Habits – An Overview. I*OSR Journal of Humanities and Social Science*, 14(6), 13-17.

Elkiran, Y. M. (2021). Examining the Relationship between Pre-Service Turkish Teacher's Digital Writing Attitudes and Digital Reading Tendencies. *International Journal of Progressive Education*, 17(4), 437-450.

Guerra, G. F., & Noll, M. (2021). Scientific Methodology in Integrated High Schools: A Case Study. *International Journal of Instruction*, 14(2), 571-590.

Hassen, R. (2016). Reading Habits of Secondary School Teachers: A Study of Selected Secondary Schools in Addis Ababa and Dessie. *Journal of Education and practice*, 7(22), 59-67.

Jamiah Baba and Faiza Rostam Affendiz. (2020). Reading Habits and Students' Attitudes towards Reading: A Study of Students in the Faculty of Education UITM PuncakAlam. *Asian Journal of University Education (AJUE)*, 16(1), 109-122.

Maria Lourdes C. Bacong, & Imelda L. (2020). Attitude toward Reading and Reading Performance of High School Students from Private Academic Institution in the Philippines. *Asia Pacific Journal of Education, Arts and Sciences*, 7(3),21-27.

Septika Dyah Mustika. (2017). *A Survey of Students' Reading Habits and Preferences: A Descriptive Study at 8th Grade Students of State Junior High School 2 of Purwokerto*. [Ph.D., Thesis, Muhammadiyah University of Purwokerto].

Packialakshmi, K., Varghese, L. S., & Thenesha, K. (2021). Reading Habits in Digital Era during Lockdown among Adolescents. *Indian Journal of Science and Technology*, 14(29),2420-2426.

Pardede, P. (2019). Print vs Digital Reading Comprehension in EFL. *Journal of English Teaching*, 5(2), 77-90.

Rukya Hassen. (2016). Reading Habits of Secondary School Students: A Study of Selected Secondary Schools in Addis Ababa and Dessie. *Journal of Education and Practice*, 7(22), 59-67.

Teksan, K. (2019). The Perceptions of Students Studying in the Faculty of Education towards Reading in Terms of Their Reading Motivations. *International Journal of Progressive Education*, 15(5), 162-184.

Thanushkodi Shanmugam. (2011). Reading Habits among Library and Information Science Students of Anna malai University: A Survey. *International Journal of Educational Sciences*, 3(2), 79-83.

Tichenor, M., Piechura, K., & Heins, E. (2021). Motivating Preservice Teachers to Read for Fun. *Southeastern Regional Association of Teacher Educators (SRATE) Journal*, 30(1), 1-5.

Tuba, S. B. (2017). A Study on Reading Habits of Social Studies and History Teachers in Turkey. *Educational Research and Reviews*, 12(10), 569-582.

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