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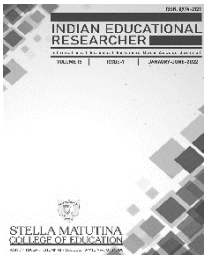

EDITORIAL

"**The future belongs to those who believe in the beauty of their dreams.**" — *Eleanor Roosevelt*

Education today stands at the crossroads of change, innovation, and transformation. As the world continues to evolve rapidly, our educational systems must rise to meet new demands and challenges with vision, courage, and creativity. The 21st century calls for institutions that nurture critical thinking, promote inclusivity, and foster learning environments that prepare learners for a dynamic global landscape.

In this era of digital expansion and technological growth, the role of educators extends far beyond classroom instruction. They are now innovators, mentors, and catalysts for change. It is essential that our colleges and universities embrace modern pedagogical approaches, integrate technology meaningfully, and encourage research that addresses real-world issues. A forward-looking educational system must also cultivate essential competencies—collaboration, adaptability, digital literacy, problem-solving, and leadership—to empower learners for lifelong success.

To achieve excellence, higher education must strengthen its foundation by enhancing infrastructure, promoting flexible and learner-centered practices, and encouraging interdisciplinary collaboration. Equally important is the need to build a culture where research, reflection, and innovation thrive. Journals such as the **Indian Educational Researcher** play a vital role in this endeavor by providing a platform for scholarly exchange, evidence-based discussions, and dissemination of impactful research. Only through such collective efforts can we create an ecosystem that inspires curiosity, supports discovery, and prepares teachers and learners for global citizenship.

In this spirit, the present issue brings together a selection of research studies that address contemporary concerns in teaching and learning: **Mrs. J. Rubina & Dr. Alma Juliet Pamela** explore the *Attitude of Student Teachers on the Usefulness of ICT Tools in Education*, emphasizing the growing significance of digital competency among future educators. **Mrs. Santhanalakshmi. K** examines *Attentiveness and Academic Achievement*, shedding light on the cognitive factors influencing undergraduate learning. **Mrs. C. Sasikala & Mrs. Dafini Pinky F.** present insights into *Student Teachers' Mobile Learning Readiness*, an essential

factor in today's technology-driven classrooms. **Dr. K. Mangai & Dr. V. Sheeja Vayola** discuss *Practices for Promoting Environmental Sustainability*, highlighting the responsibility of educators in shaping eco-conscious citizens. **Selvi Anita Mary. G** investigates *Attitude towards Smart Boards and Learning Style in Relation to Academic Performance among High School Students*, showcasing the interplay between digital tools and learner diversity.

Each of these scholarly contributions reflects the dedication and commitment of our academic community toward enhancing teacher education and supporting meaningful research. Their efforts enrich our understanding of educational processes and help pave the way for progressive teaching practices.

We extend our heartfelt appreciation to all the authors for their valuable contributions to the **Indian Educational Researcher**. We warmly welcome future submissions focusing on innovative pedagogies, digital education, learner psychology, environmental education, and emerging trends in teaching–learning. Research grounded in experience, inquiry, and reflective practice will continue to strengthen our academic discourse and inspire new possibilities in education.

Wishing all our readers purposeful learning and continued academic growth.

Editorial Board

Research Article

Attitude of Student Teachers on the Usefulness of ICT Tool in Education

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Abstract

Information and communication technology (ICT) tools contribute to high distinction course because they have credible to improve students' dynamic vigour unite students to many information sources, sustain energetic in class and out class learning environment, and let teacher to allot more time for facilitation. Consequently, use of ICT tools in instruction and learning process becomes a huge component of make enquiries for many educators. These technologies increase students' drive, self-sufficiency and self-value to learn. In addition, new technologies usually promote self-regulating and lively learning, as a result the students feel more responsible for their own education renumber of research on the input of ICT in modernizing learning and teaching, triggers attempt to incorporate these technologies in order to gain in terms of pre-eminence of education, flexibility, contact and its outlay.

Keywords: Information and Communication Technology, Instruction and Pre-Eminence.

Introduction

ICT has numerous recompenses in the instruction and learning progression. Classroom administration is one of them that gain payback from ICT. According to accomplished teacher who use ICT in their classrooms that ICT may make the classroom domineering more natural since ICT provide materials that make the class more motivating and easier to control (Cox and Webb, 2004). The continuation of several sorts of ICT tools gives the group of student's others hold up of learning particularly in terms of ocular and aural learning.

ICT and Motivation

The British educational communications and technology agency (Becta, 2003) has research about ICT and motivation, which reports that regular use of ICT across various curriculum subjects, may have a useful motivational impact on students learning (cited in Cox, 1997).

Effective Learning and Teaching with ICT

In the late of 20th century and with the beginning of 21st century, ICT has played roles from simple to vital roles especially in developed countries school. Learning and teaching process become more effective by using ICT. "The use of ICT has developed in different ways to meet the needs of learners in different curricular areas. The use of ICT can

- help learners be creative
- be a useful aid to problem solving
- provide ready access to a world of knowledge and research and
- Improve the quality of presentation.

ICT assisted students to be more creative in their learning process, and it is a beneficial support for problem solving by using different ICT facilities such as: software programs, Internet, and printer. Presentations became visual and auditory for students in addition to using software programs like power point. However, all these factors need effective teachers and managements or administrators to apply and achieve these effective benefits on students.

Literature Review

David et al., (2013) conducted a study on Attitude of teachers towards use of Information and communication technology in the implementation of biology curriculum in selected secondary schools. The major finding of the study was a significant difference in ICT with respect to gender. Ilomaki (2008) conducted a study on the effect of ICT on schoolteachers and students' perspectives at Finland. The phenomenon was investigated using a mixed methods approach. Findings: There is a significant difference between male and female in their use of skills in ICT. Male students show better skills especially purely technical issues also in schools and classrooms whereas female students are used ICT in their ordinary practices quit naturally Surasan and Tamilselvi (2016) conducted a study on access of ICT among secondary

school students in relation to their Academic achievement. The study found that was there is no significant difference between boys and girls in ICT access and there is no significant difference between rural and urban area school students in ICT access.

Need and Significance of the Study

- **Access to Variety of Education Resources**

ICT tools develop the instruction skills and education proficiency. The education resources are being widened and extend. Learners are optimistic to observe ICT tools to be used in all aspect of their studies. In particular, they require making use of the recent multimedia technology to communicate information, explain project, and order information in their work.

- **Propinquity To Information**

It has provided immediacy to education. Now in the year of technology the pace of imparting knowledge is very fast, and one can be educated anywhere at any time. Any time learning

- **Collaborative Learning**

Now it has made it easy to learn as well as educate in groups or in clusters. With online we can be joining together to do the considered necessary mission. Efficient postal system and a variety of video recording and playback systems based on computer technology all have a part to play in educational means of statement in the new millennium. The Internet and its Web sites are now well-known too many students in residential countries and among learning elite elsewhere, but it remains of diminutive suggestion to very many more, who lack the most basic means for persistence.

- **Multimedia Approach to Education**

Audio-Visual Education, setting up, training, and use of strategy and resources that engage view, sound, or both, for instructive purpose.

Statement of the Problem

"Attitude of Student Teacher on the Usefulness of ICT Tools in Education"

Operational Definition

Attitude refers to the propensity to be active in response in a constructive or unconstructive way to objects or individuals in one's situation. When we similar to or find objectionable, and

also the way the student teachers perceive knowledge and their thought process about online learning. ICT refers to Information and Communications Technology (ICT) can influence learner knowledge while teachers are digitally well-read and comprehend how to incorporate it into set of courses. Schools use a various set of ICT implements to converse, generate, spread, store, and administer information.

Objectives of the Study

- To examine the difference in student teacher attitude on the usefulness of ICT tools owing to difference in region.
- To examine the difference in student teacher attitude on the usefulness of ICT tools owing to difference in type of institution.
- To examine the difference in student teacher attitude on the usefulness of ICT tools owing to difference in stream of study.

Hypotheses of the study

- There is no significant difference in student teacher attitude on the usefulness of ICT tools owing to difference in region
- There is no significant difference in student teacher attitude on the usefulness of ICT tools owing to difference in type of institution.
- There is no significant difference in student teacher attitude on the usefulness of ICT tools owing to difference in stream of study.

Tool Used for the Study

The investigator used the standardized tool on Use of ICT tool by (Nagy & Habók, 2018) which would be administered to the student teachers to collect data. A questionnaire was framed which is designed specifically to address research objectives with regard to student teachers' attitude on the usefulness of ICT tools. The questionnaire consists of 15 questions was divided into use of ICT in teaching practice, attitude towards ICT, training experience and training needs. The questionnaire was based on a five-point Likert scale: 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree. Student teachers were asked to reflect on their major motivational beliefs and attitude towards ICT. All permissions were requested, and participants were assured of anonymity. It was guaranteed to the respondents that all information was only used for purpose of research and for statistical treatment. There was no conflict of interests as student teachers' participation was voluntary

Sample

The data for the study was collected from student teachers in Chennai and Tiruvallur district.

Method of the Study

The investigator had used Survey method for the study.

Table 1

Distribution of Sample

Sl. No	Name of the Colleges
1	Stella Matutina College of Education
2	Indhira College of Education

Analysis and Interpretation

H1: There is no significant difference in student teacher attitude on the usefulness of ICT tools owing to difference in region.

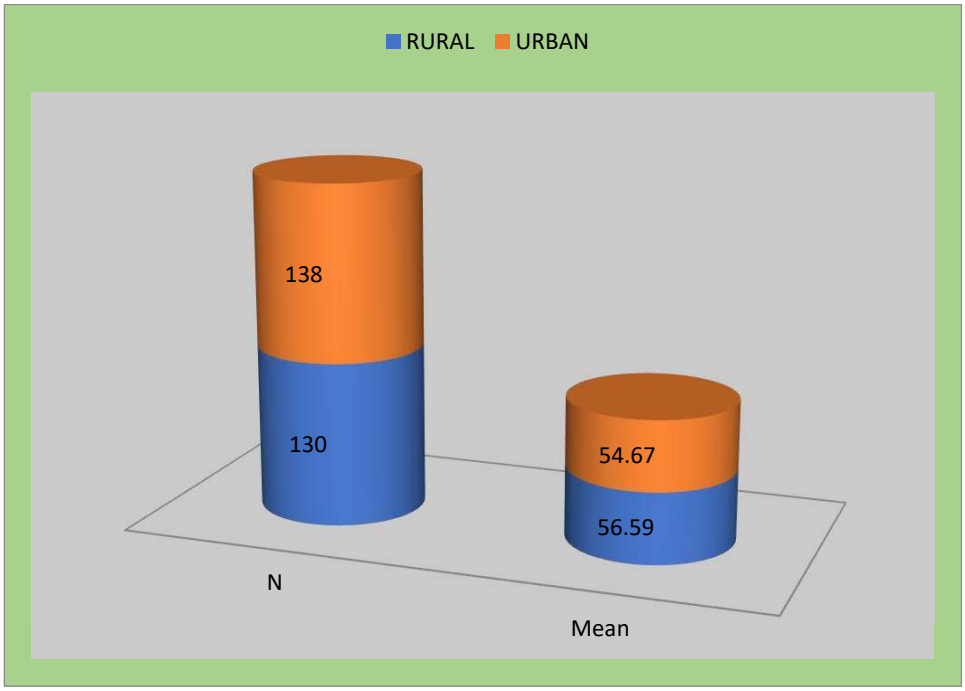
Table 2

Student Teachers Attitude on the usefulness of ICT tools Based on Region.

Region	N	Mean	Std. Deviation	t-value	df	Significant Level
Rural	130	56.59	6.179	.026	266	0.317
Urban	138	54.67	7.683	.025		

Figure 1

Pupil differences in region



The above table shows that the mean scores and standard deviation and 'p' value of region. Here the 'p' value of region is 0.31 which is greater than 'p' value at 95% confidence level (0.05) with degrees of freedom 266. The hypothesis assumed that the there is no significant difference in Student teachers' attitude on the usefulness of ICT tools owing to the difference in region is accepted. Therefore, it is concluded there is no significant difference in Student teachers' attitude on the usefulness of ICT tools owing to the difference in region.

H2: There is no significant difference in student teacher attitude on the usefulness of ICT tools owing to difference in type of institution**.**

Table 3

Student Teachers' Attitude on The Usefulness of ICT Tools Based on Type of Institution.

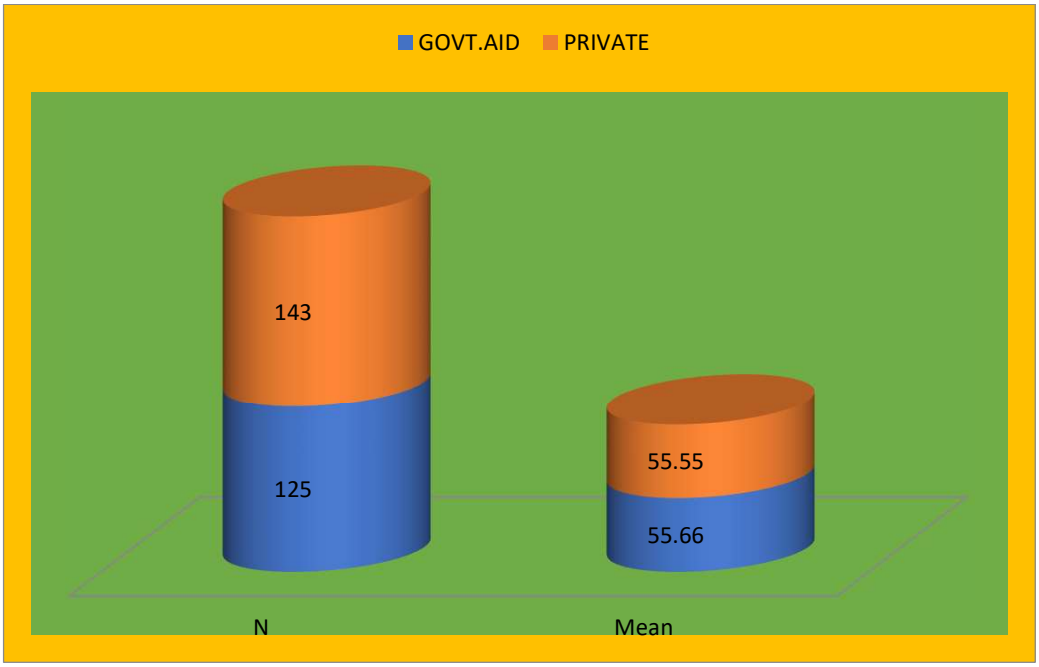
Type of Institution	N	Mean	Std. Deviation	t-value	df	Significant Level

Govt. Aided	125	55.66	6.962	.897	266	0.892
Private	143	55.55	7.144	.897		

The above table shows that the mean scores and standard deviation and 'p' value of region. Here the 'p' value of region is 0.89 which is greater than 'p' value at 95% confidence level (0.05) with degrees of freedom 266. The hypothesis assumed that the there is no significant difference in Student teachers' attitude on the usefulness of ICT tools owing to the difference in type of Institution is accepted. Therefore, it is concluded there is no significant difference in Student teachers' attitude on the usefulness of ICT tools owing to the difference in type of Institution.

Figure 2

Pupil differences in Type of Institution



H3: There is no significant difference in student teacher attitude on the usefulness of ICT tools owing to difference in stream of study

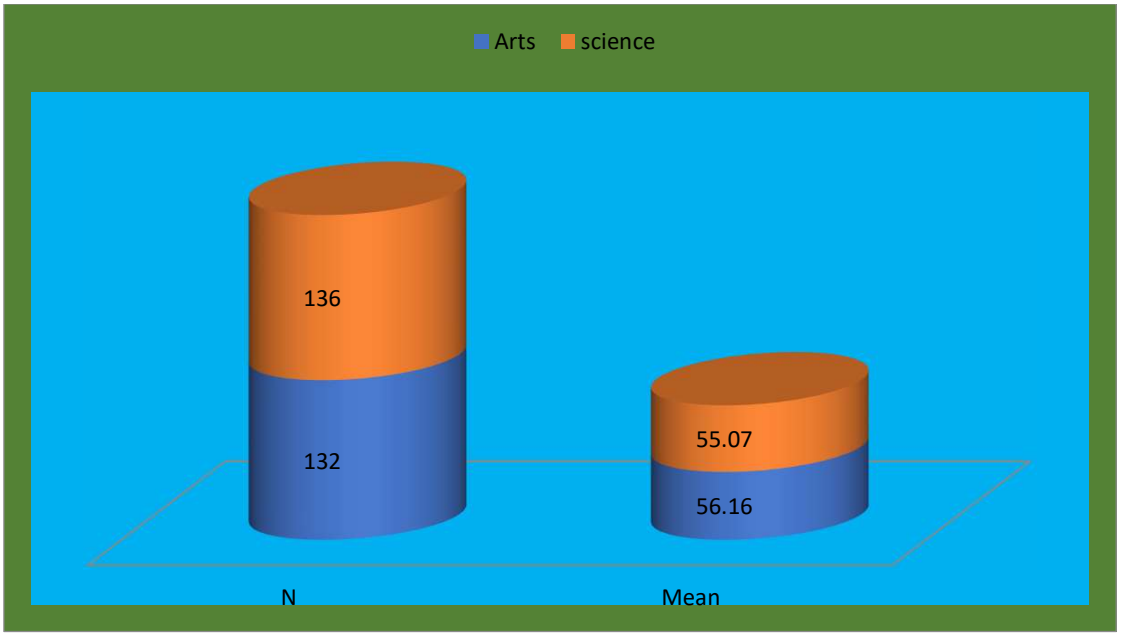
Table 4

Student teachers' Attitude on the Usefulness of ICT tools Based on Stream of Study

Stream Of Study	N	Mean	Std. Deviation	t-value	df	Significant Level
Arts	132	56.16	5.408	0.205	266	0.028
Science	136	55.07	8.321	0.202		

Figure 3

Pupil differences in Stream of Study



The above table shows that the mean scores and standard deviation and 'p' value of region. Here the 'p' value of region is 0.02 which is greater than 'p' value at 95% confidence level (0.05) with degrees of freedom 266. The hypothesis assumed that the there is significant difference in Student teachers' attitude on the usefulness of ICT tools owing to the difference in stream of study is rejected. Therefore, it is concluded there is significant difference in Student teachers' attitude on the usefulness of ICT tools owing to the difference in Stream of study.

Findings of the Study

- The acceptance of null hypothesis in table 2 showed that there is no significant difference in Student teachers' attitude on the usefulness of ICT tools owing to the difference in region. These findings infer that Student teacher attitude on the usefulness of ICT tools of rural and urban are the same.
- The acceptance of null hypothesis in table 3 showed that there is no significant difference in Student teachers' attitude on the usefulness of ICT tools owing to the difference in Stream of study. These findings infer that Student teachers' attitude on the usefulness of ICT tools of arts and science are the same.
- The acceptance of null hypothesis in table 4 showed that there is significant difference in Student teachers' attitude on the usefulness of ICT tools owing to the difference in Type of institution. These findings infer that Student teachers' attitude on the usefulness of ICT tools of Government Aided and Private are the different.

Delimitation of the Study

- The data is collected from Chennai and Tiruvallur districts only.
- The findings of the study are limited to region, type of Institution, stream of study only.
- To collect the data only survey method is used.
- The data is collected from the population of B.Ed. college students.
- The standardized questionnaire only used on Attitude of Student Teacher on the Usefulness of ICT Tools by the investigators.

Educational Implications of the study

The outstanding characteristic of any research is that it contributes something new to the development of the area concerned. On the basis of the findings, the investigator found that the attitude towards ICT tools is squeezing the share of conventional mass media and its fast becoming a substitute to provide activity. Attitudes are the prime movers of the thought and action, which is clear from the study, on the usage of ICT tools. Attitude towards ICT tools helps the student to implement the principle of lifelong learning. Students use information and communication technology to increase a variety of educational services.

Conclusion

Worldwide educational systems are under great pressure to adopt novel technologies in the instruction and knowledge process, to prepare students with the knowledge and skills they need in the 21st century. Conversion, transformation and revolution in the situation of today's instructive system. All the processes of learning are crossing the boundaries and barriers. This tendency requires a change in knowledge competencies and skills to deal with technological advancement in networking which is necessary to establish a network between students, educators, parents, institutions and libraries the world over. Therefore, the use of technology in education improves classroom teaching learning process.

References

Abbott, J. A. and Faris, S. E. (2000). Integrating technology into preservice literacy instruction: a survey of elementary education students' attitudes toward computers, *Journal of Research on Computing in Education*, *33*, 149-161.

Castro Sánchez, J. J. and Alemán, E. C. (2011). Teachers' opinion survey on the use of ICT tools to support attendance-based teaching. *Journal Computers and Education,56*, 911-915.

Doering, A., Hughes, J. and Huffman, D. (2003). Preservice teachers: Are we thinking with technology? *Journal of Research on Technology in Education*, *35*, 342-361.

Lim, C. P. (2007). Effective integration of ICT in Singapore schools: Pedagogical and policy implications. *Education Technology Research Development*, *55*, 83.

Liu, Y. and Szabo, Z. (2009). Teachers' attitudes toward technology integration in schools: A four-year study. *Teachers and Teaching: Theory and Practice,15*, 5-23.

Research Article

The Relationship between Attentiveness and Academic Achievement among Undergraduate Students.

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Abstract

The purpose of the present study was to evaluate a hypothesized structural model that reflects the relationship between Attentiveness and Academic Achievement among Undergraduate Students. Attentive students are more likely to achieve goals. An inattentive student makes careless mistakes and low achieve goals. Today's students are more oriented towards modern technologies. Their attention is drawn to things that are full of technical knowledge and entertainment. Students will be able to focus on learning with enthusiasm if they are able to modernize the workshops and communications. The sample of the study consisted of 815 Undergraduate Students in an Arts and Science College from Tiruvallur district. Survey method and stratified sampling was adopted for the study. Attentiveness scale consisting 23 items was developed by the researcher. The result showed that attentiveness had the strongest relationship on academic achievement.

Keywords: Attentiveness, Academic Achievement, Undergraduate Students

Introduction

Today's students are very smart. Their passion goes beyond school. Recent research suggests that some students are low interested in education and are not as enthusiastic about the methods they use. Experts say the teaching system should be adapted to suit the changing student mindset. Attentiveness can be identified early in children, and a recent research study has positive educational outcomes. The idea of teaching attention can be seen today as speed, efficiency and success worthy of inspiration. Multimedia will also increase their technical knowledge. It is appropriate for students to send information and share ideas. Research has reported that combinations of snacks and carbonated beverages that children drink regularly can cause behavioural changes such as high-speed. Creating classroom experiences that grab and hold students' interest is not only good teaching, but also science, **Karen Costa** (July 26,

2016). Meditation, yoga, favourite reading, tasting, going out, having fun will ease the mind and stimulate learning and teaching. Some child development experts suggest a time to focus on a task is shown below the table.

Average Concentration Span

Age	Average Concentration Span
4	8 to 20 mins
5	10 to 25 mins
6	12 to 30 mins
7	14 to 35 mins
8	16 to 40 mins
9	18 to 45 mins
10	20 to 50 mins

The purpose of this research is to focus on these issues **"***The Relationship between Attentiveness and Academic Achievement among Undergraduate Students*" in a college environment. The main objective of the current study is to construct and validate a Structural Equation Model (SEM) of linear relationship among the variables of attentiveness and academic achievement. A Path Model relating attentiveness and academic achievement is hypothesized for validation.

Literature Review

The Relationship between Attentiveness and Academic Achievement have been found in many studies. ***Narmene Hamsho (2017)*** found that academic behaviours and attention contribute to writing fluency for female students. Furthermore, there was a significant difference in the academic behaviours of female students in the current sample and female students in a normative sample. ***Erich Sack (2016)*** found that a technological intervention can help students with Attention Deficit/Hyperactivity Disorder (ADHD)increase their attentiveness and reduce their distractibility. ***Erik Rosegard & Jackson Wilson (2013)*** found a significant difference in exam scores measuring information retention between arousal

(M=13.36, SD=1.5) and no-arousal (M=12.85, SD=1.4) conditions; t (844) =5.20, p < .001. ***Janet Fellowes (2005)*** found there is great individual difference in attentiveness of individual boys, even when there is an overall pattern of higher or lower attentiveness.

Research Method

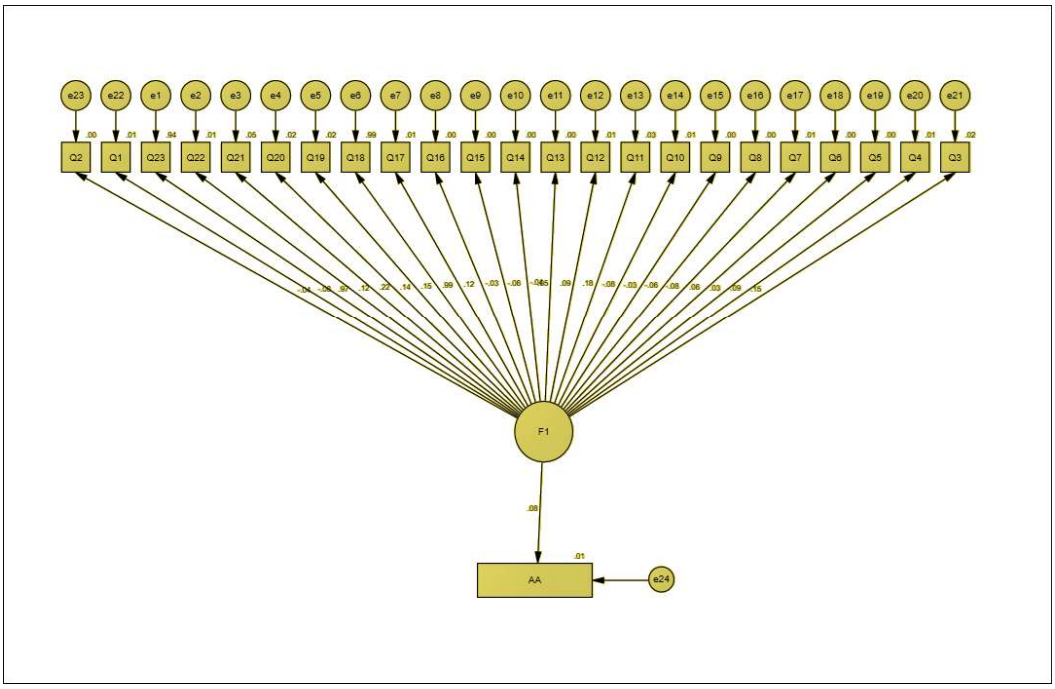
Survey method and Stratified sampling technique was adopted and the sample consisted of 815 undergraduate students in Tiruvallur district. Attentiveness scale consisting of 23 items was developed by researcher and reliability coefficient was found to be 0.76. Students' Academic Achievement marks scored in the previous semester marks. Structural equation modelling analysis technique have been used. Results were then analysed using SEM with AMOS version 7.0.

Analysis and Result

The present study aimed to verify the validity of the study hypothesis, which states "A structural model showing relative contribution of attentiveness and academic achievement hypothesized for validation". The model is built in AMOS, and the diagram is shown below. The standardized parameter estimates are shown in the graph. The structural model was evaluated against five criteria: CMIN/DF > 0.5, GFI (goodness-of-fit index >0.9), NFI (normed fit index > 0.9), CFI (comparative fit index > 0.9), and RMSEA (root mean square error of estimation 0.05- 0.08). The goodness-of-fit test statistics are below. Note the Chi-square test statistic is significant at 0.05, which suggest that the model fitting is only acceptable. Figure 1 the result shows the initial theoretical did not meet the criteria of 0.90 to suggest adequate fit of the model observed data (X^2 = 3820.852, GFI = 0.789, CFI = 0.385, TLI = 0.0321, RMSEA = 0.146). The result showed the initial model did not fit the data. So, the model may need to be modified in order to improve the fit.

Figure 1

The structural equation modelling default model that shows the relationship between attentiveness(F1) and academic achievement (AA).



So, the variable (attentiveness) may need to be modified to improve the fit. Modification Indices report the Change in chi-square value, modification that improve model fit. The latent variable was tested with confirmatory factor analysis (CFA) in the total sample, and the variable (attentiveness) was modified, adjusted and improved using two steps, (1) eliminating unreliable indicators, and (2) adding correlational parameters to the model.

The latent variable (attentiveness) was modified. The fit of the model indicated the following: X2= 749.191, P < 0.05; goodness-of-fit index (GFI)= 0.921; comparative fit index (CFI)= 0.907; Tucker-Lewis Index (TLI)= 0.895; Root means square error (RMSEA)= 0.057. Based on the criteria established for reasonable fitting of the model, the adjusted model resulted in improved fit (show Table 1).

Figure 2.

Modification Structural Equation Model

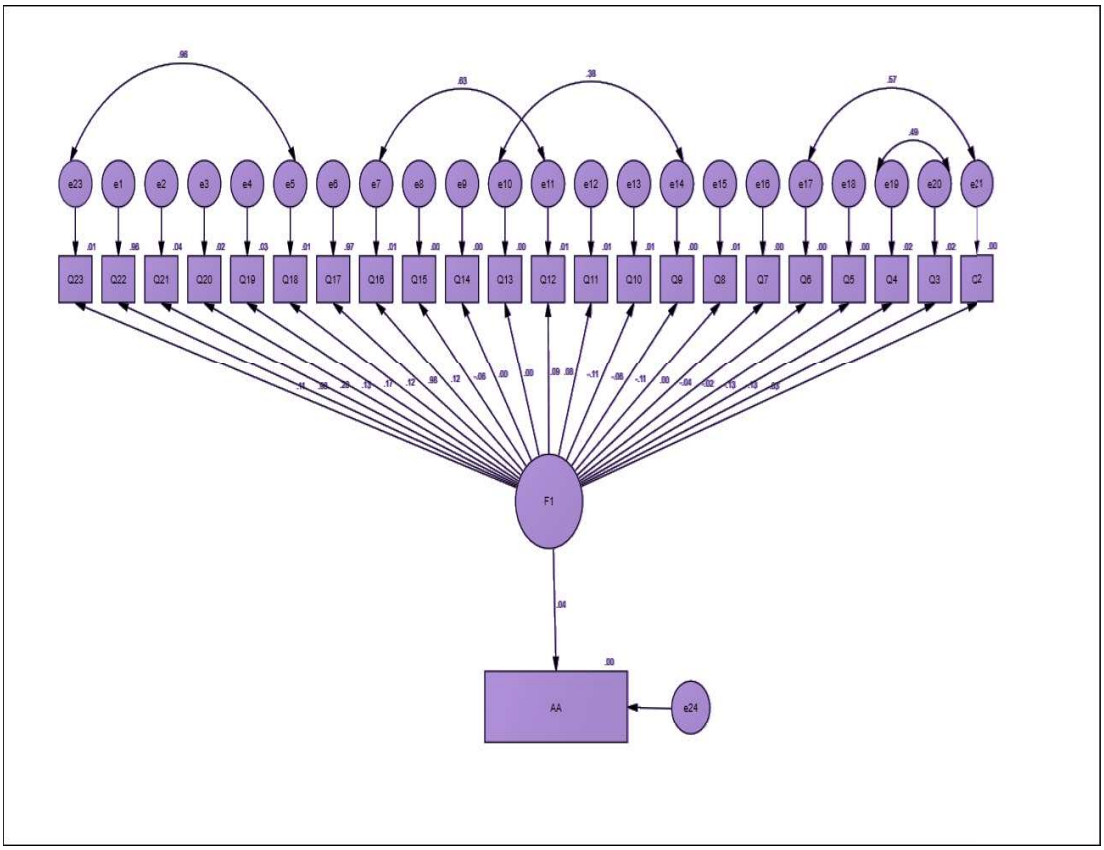


Fig 2 The structural equation modelling proposed model that shows the relationships between the independent variable (F1-Attentiveness) and dependent variable (AA- Academic Achievement).

Table 1

Chi-square and Goodness-of-fit Indices for the Initial and Adjusted Models

Indices	Initial Model	Adjusted Model
X^2	382.852	749.191
DF	209	204
P	< 0.05	< 0.05
CMIN/df	18.282	3.673
GFI	0.789	0.921
AGFI	0.744	0.903

PGFI	0.652	0.743
CFI	0.385	0.907
NFI	0.374	0.877
TLI	0.321	0.895
PCFI	0.349	0.801
RMSEA	0.146	0.057

The adjusted model is presented in figure 2 showing the numerical estimates for each latent factor in the model that indicates the strength of the relationship. The main different between the hypothesized model and adjusted model was the exclusion of items in the measurement model and modifications in some relationships described in the structural model.

Multiple indices were used for the current study in order to assess acceptable model fit relating to direction and significance of the pathways in the analysis. The cut off criteria for acceptable fit of the model for the above-mentioned fit indexes are as follows: CFI ≥ .90, TLI ≥ .90; RMSEA < .06 to .08 with confidence interval.

Table 2

Regression Coefficients for Model Variable

Variables	Regression Weights	S. E	C.R	Standardized Regression Weights	Level of Significance
Academic Achievement ← Attentiveness	3.599	1.568	2.295	0.080	0.022

Table 2 presents a summary of regression coefficients as measures of the relationship between the variables of attentiveness and academic achievement. The relationships between the latent factors indicated that there was a statistically ***significant*** positive on Attentiveness and Academic Achievement of undergraduate students.

Conclusion

In this study, aim to examine "The Relationship between Attentiveness and Academic Achievement among Undergraduate Students" in a College Environment. In the present study,

the result showed that Attentiveness had the strongest relationship on Academic Achievement. Focus is a very complicated process. The class focuses on helping students learn, process information, respect the teacher and put forth their best efforts in the educational setting. Students need to be creative in focusing, and they need to physically and mentally engaged in the work to increase their focus.

References

Angerlita Yolanda Smith. (2015). Attitude, Subjective Norm, and Perceived Behavioural as Indicators for Nurse Educators' Intention to Use Critical Thinking Teaching Strategies: A Structural Equation Model Analysis.

Arnout. BA. (2019). A Structural equation model relating unemployment stress, spiritual intelligence, and mental health components: Mediators of coping mechanism. *Journal of Public Affairs.*

Erik Rosegard & Jackson Wilson. (2013). Capturing students' attention: An empirical study. *Journal of the Scholarship of Teaching and Learning*, *13* (5). 1 – 20.

Erich Sack. (2016). On-Task: Increasing attentiveness in students with ADHD.https://viurrspace.ca/bitstream/handle/10170/884/sack_erich.pdf?sequence=1.

Fellowes, J. (2005). Boys and writing: Attentiveness levels and the impact of single gender classes and teaching methods. https://ro.ecu.edu.au/theses/660.

Narmene Hamsho. (2017). The Impact of Classroom Behaviours and Student Attention on Written Expression.

Webliography

https://www.cmu.edu/teaching/solveproblem/strat-lackmotivation/lackmotivation-02.html (19.03.2020, 12.35).

https://www.insidehighered.com/advice/2016/07/26/how-hold-students-attention-classroom-essay (19.03.2020, 12.40).

Research Article

Student's Teachers Perceptions of Their Mobile Learning Readiness

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Abstract

M-Learning (Mobile Learning) is a new tool for assisting students and teachers as they navigate the constantly expanding realm of online learning opportunities. In India, mobile learning plays an important part in the learning and teaching process, as well as in promoting "Democratization of Education" by giving high-quality educational opportunities and quick access to information at a low cost. The success of m-learning deployment will be determined by teacher readiness and good attitudes toward it. M-Learning is a term used to describe learning that occurs on small, portable computers. The findings of a study aimed at gaining a better understanding of B.Ed. students' psychological readiness for mobile learning (m-learning).

Keywords: Mobile Learning, Mobile Technology, Teachers, Psychological Readiness

Introduction

The traditional teaching and learning process has the potential to be revolutionized by technology. It has the potential to break down the obstacles to education created by time and space, greatly increasing access to lifelong learning. Students no longer need to be in the same area at the same time in order to learn from the same instructor. Modern technologies have the ability to fundamentally alter the perception of a student teachers in higher education. Mobile phones have opened a new era in educational technology, providing for unique and innovative learning and teaching methods. The way the individual's study, work, access information, and readily communicate with others has changed as a result of technological advancements, opening up a wide range of options for providing unique and interesting learning experiences both inside and outside the classroom m-learning is the delivery of learning resources and services to learners through any wireless or mobile phone network, regardless of time or location.

M-Learning Readiness and Perception

The science of psychology is concerned with the study of human behaviour. Human behaviour toward the usage of mobile technology leads to a behavioural intention to use m-learning and the expectation that it will be seen as user-friendly in order to develop and construct a successful mobile technology. As a result, the m-learning system should be linked to the perspectives of students and teachers. Positive student attitudes, which are a crucial psychological aspect, have been credited with the m-learning system's efficacy.

Teachers will need to make a paradigm shift to properly integrate mobile devices into classroom learning. Simply owning mobile devices does not guarantee that students and teachers will use them effectively in the classroom. Teachers must receive supportive training on the theory of integrating these devices, as well as practical classroom management skills, so that they can feel comfortable in their classroom instructional setting. "Current pedagogical practices are incompatible with mobile learning and the new generation of students." There must be a paradigm shift in education that promises to dramatically alter how children learn" (UNESCO, 2012). Muir, Knezek, and Christensen (2004) found that successful teacher application of emerging technologies in education required well-planned, ongoing professional development and support, guided by data-driven decisions.

Literature Review

(Chapnick, 2000) literature review suggests that studies exist on e-learning readiness, covering various aspects such as psychological, sociological, environmental, financial, technological, etc.

Yun and Murad (2006) studied psychological and technical skill readiness for e-learning. Early studies on m-learning readiness have identified some parameters affecting readiness for learning such as educational level (Nwagwu, 2001), gender (Trifonova, Georgieva, & Roncheii, 2006) and age (MacCallum & Jeffrey, 2009).

The results of readiness based on m-learning studies (Alzaza & Yaakub, 2011; Attewell, 2005; Fozdar & Kumar, 2007; Maniar, 2008) on learners of higher education indicated that:

- learners perceived mobiles as an effective way to communicate, collaborate and learn.
- learners were enthusiastic and looked forward to the integration of m-learning in their learning process.

- Similar to the learners it is also important for the teachers to have the readiness for m-learning to impart knowledge pedagogically.

Perception studies on learners towards m-learning demonstrated that mobile phones help to increase the access to the information regardless of location (Valk et al., 2010, Gikas & Grant, 2013). M-Learning provided opportunities for reinforcement of the course material. It also provided a platform where learners could collaborate and communicate informally. (Looi et al., 2010). Moreover, gaps were also found in the perception of m-learning among learners and teachers.

According to learners, some teachers were unwilling to effectively incorporate technology in their course and did not assist their students in interacting with the course content. These 'anti-technology instructors' did not want students to use mobile computing devices during class (Gikas & Grant, 2013). Mishra & Koehler, 2009). This study showed that the digital learning technologies hold great potential to improve the students' knowledge and skills in an informal manner (Wouters, Van Nimwegen, VanOostendorp & Van Der Spek, 2013; Camilleri & Camilleri, 2019a, 2017).

Need and Significance of the Study

Most students' lives have become embedded with mobile devices, and they expect mobile technologies to play a significant role in their education. Mobile technology's educational significance should be examined because they may provide crucial insight into the consequences for 21st-century student learning. Yu, Lee and Ewing (2014),To provide students with access to effective learning, instructional designers must adopt new ways of enabling learning through the use of diverse pedagogical strategies.(Kilmova & Poulova, 2016).M-Learning is characterized as a learning environment that focuses on the mobility of technology, learners, and learning and is especially advantageous to the higher education scene.(Peters, 2007).This mobility enables ubiquitous learning in both formal and informal contexts, and as a result, transforms the way we work and learn by removing the need for fixed locations for work and study.

Objectives of the Study

- To examine the difference in Student teachers' perception of their mobile learning readiness owing to difference in region.
- To examine the difference in Student teachers' perception of their mobile learning

readiness owing to difference in stream of Study.

- To examine the difference in Student teachers' perception of their mobile learning readiness owing to difference in Type of institution.

Hypotheses of the Study

- There is no significant difference in Student teachers' perception of their mobile learning readiness owing to difference in region.
- There is no significant difference in Student teachers' perception of their mobile learning readiness owing to difference in stream of Study.
- There is no significant difference in Student teachers' perception of their mobile learning readiness owing to difference in Type of institution.

Method and Sample

The determination of this study was to identify the readiness and perceptions of the student teachers towards Mobile learning. The questionnaire consisted of 12 items to measure perceptions of mobile readiness of student teachers. Perception towards m-learning and its possible applications was measured through a four-point ranging from 'Never' (1) to 'very often' (5). The Survey was conducted through online to collect the necessary data. The survey link was sent to Student teachers to three colleges, through e- mail and WhatsApp. Table 1 presents a list of colleges.

Table 1

Distribution of Sample

Sl. No	Name of the Colleges
1	Stella Matutina College of Education
2	Shantha College of Education
3	Narazeth College of Education

Tool Used:

The tool used to conduct the research is "Psychological Readiness for M-Learning" developed by Sulaiman Alumutairy, Trevor Davies, Yota Dimitriadi (2015).

Analysis and Interpretation

Hypothesis 1: There is no significant difference in Student teachers' perception of their mobile learning readiness owing to difference in region.

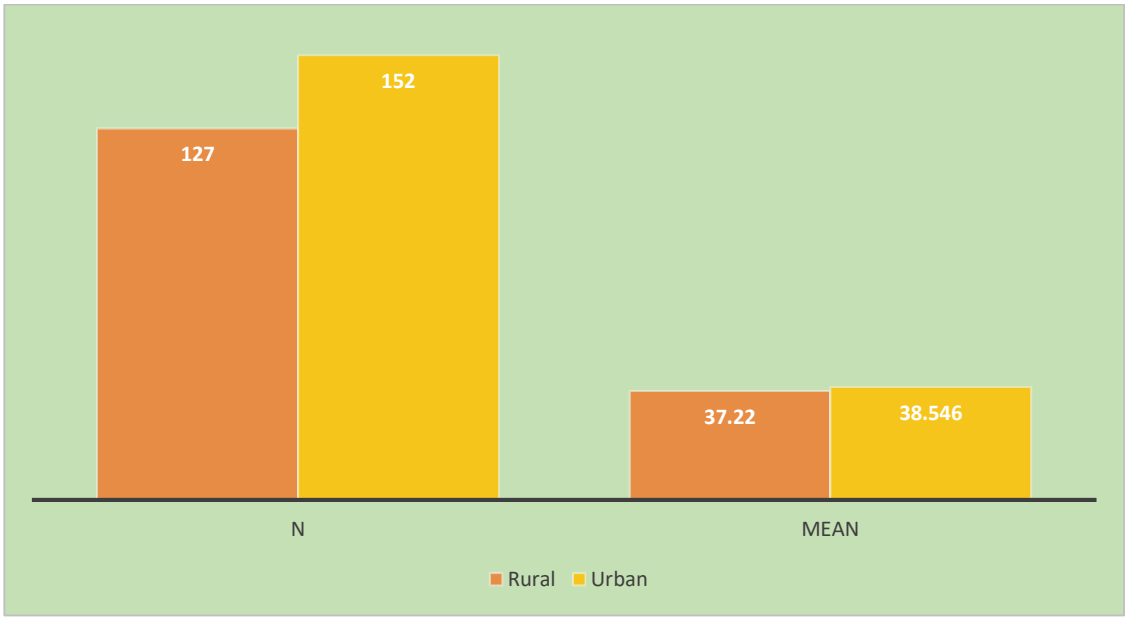
Table 2

Student teachers' perception of their mobile learning readiness Based on Region.

Region	N	Mean	Std. Deviation	t--value	df	Sig.level
Rural	127	37.220	5.7334	0.063	277	0.14
Urban	152	38.546	6.0427	0.062		

Figure 1

Sample Distribution Based on Region



The above table shows that the mean scores and standard deviation and 'p' value of region. Here the 'p' value of region is 0.14which is greater than 'p' value at 95% confidence level (0.05) with degrees of freedom 277. The hypothesis assumed that the there is no significant difference in Student teachers' perception of their mobile learning readiness owing

to the difference in region is accepted. Therefore, it is concluded there is no significant difference in Student teachers' perception of their mobile learning readiness owing to the difference in region.

Hypothesis 2: There is no significant difference in Student teachers' perception of their mobile learning readiness owing to difference in Stream of study.

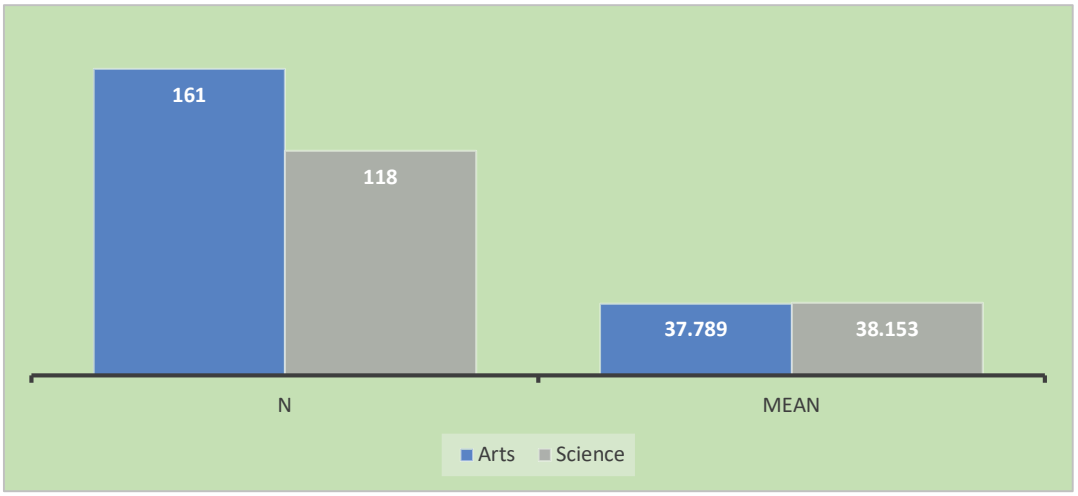
Table 2

Student teachers' perception of their mobile learning readiness Based on Stream of study

Stream of study	N	Mean	Std. Deviation	t-value	df	Sig.level
Arts	161	37.789	5.9565	0.614	277	0.71
Science	118	38.153	5.9134	0.613		

Figure 2

Sample Distribution Based on Stream of study



The above table shows that the mean scores and standard deviation and 'p' value of Stream of study. Here the 'p' value of Stream of study is 0.71 which is greater than 'p' value

at 95% confidence level (0.05) with degrees of freedom 277. The hypothesis assumed that the there is no significant difference in Student teachers' perception of their mobile learning readiness owing to the difference in Stream of study is accepted. Therefore, it is concluded there is no significant difference in Student teachers' perception of their mobile learning readiness owing to the difference in Stream of study.

Hypothesis 3: There is no significant difference in Student teachers' perception of their mobile learning readiness owing to difference in Type of Institution.

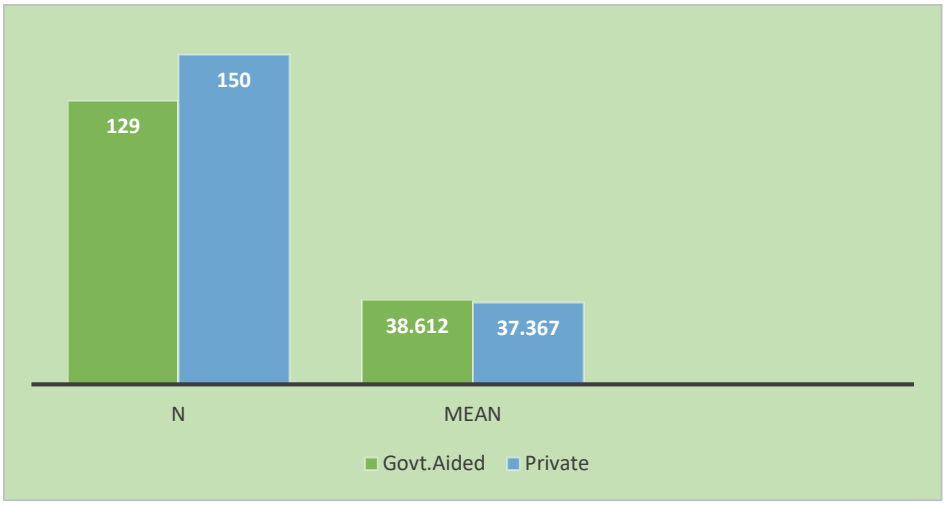
Table 2

Student teachers' perception of their mobile learning readiness Based on Type of Institution.

Type of institution	N	Mean	Std. Deviation	t-value	df	Sig.level
Govt. Aided	129	38.612	6.0909	0.80	277	0.20
Private	150	37.367	5.7468	0.82		

Figure 3

Sample Distribution Based on Type of Institution



The above table shows that the mean scores and standard deviation and 'p' value of Type of institution. Here the 'p' value of region is 0.20 which is greater than 'p' value at 95% confidence level (0.05) with degrees of freedom 277. The hypothesis assumed that the there is no significant difference in Student teachers' perception of their mobile learning readiness owing to the difference in Type of institution is accepted. Therefore, it is concluded there is no significant difference in Student teachers' perception of their mobile learning readiness owing to the difference in Type of institution.

Finding of the Study

- The acceptance of null hypothesis in table 2 showed that there is no significant difference in Student teachers' perception of their mobile learning readiness owing to the difference in region. These findings infer that Student teacher's perception of their mobile learning readiness of rural and urban are the same.
- The acceptance of null hypothesis in table 3 showed that there is no significant difference in Student teachers' perception of their mobile learning readiness owing to the difference in Stream of study. These findings infer that Student teacher's perception of their mobile learning readiness of arts and science are the same.
- The acceptance of null hypothesis in table 4 showed that there is no significant difference in Student teachers' perception of their mobile learning readiness owing to the difference in Type of institution. These findings infer that Student teacher's perception of their mobile learning readiness of Government Aided and Private are the same.

Delimitation of the Study

- The data is collected from Chennai and Sivangangai districts only.
- The findings of the study are limited to the sampling areas only.
- The data is collected from the population of B.Ed. college students only.

Educational Implications of the Study

Mobile devices come with built-in features like digital displays, speakers, cameras with significant memory and processing speed which allows sound, text, pictures, and video files to be used, downloaded and uploaded. These features make the creation and delivery of multimedia content feasible using mobile devices. M-learning is also a practical choice since

the users do not need much technological expertise to carry out m-learning. However, all learning cannot be imparted through m-learning. Despite fulfilling the technological requirements, m-learning can only be used as a tool to supplement existing teaching and learning models or for communicating small chunks of information quickly to the learners.

In the Present Study it was observed that the student teachers irrespective of their region, type of institution and stream of study having the same mindset in mobile learning readiness. Therefore, the teachers can give scope for the emergence of newer pedagogies suitable for m-learning in the classroom setting. M-learning will be more suitable for accessing the syllabus and assignments, which are compact and modular. Learners may also share any course related pictures, audios, and videos, Course material and notes provided they are not large in size. Learners will also participate in interactive activities like quizzes or participating in social interactions like discussions forums. So far, the present study indicates that, m-learning is successful in increasing access to educational opportunities.

Conclusion

Mobile learning is collaborative 21st-century learning that is defined by constructivist learning. It establishes a framework for ubiquitous learning – access to learning at any time and from any location. The features of mobile technologies that support individual, psychological and social aspects of learning and to explore emerging technologies in order to increase student engagement and, as a result, improve retention and graduation rates. With the use of outstanding instructional design, more mobile learning applications will be integrated into teaching and learning, which will benefit both students and teachers.

References

Ally, M. (2011). State of Mobile Learning in Canada and Future Directions. Athabasca University,

Brown, K., Campbell, S. W., & Ling, R. (2011). Mobile phones bridging the digital divide for teens in the US?', *Future Internet*, *3*(2), 144-158.

Cheung, S. K., Yuen, K. S., & Tsang, E. Y. (2011). A study on the readiness of mobile learning in open education, In *International Symposium on IT in Medicine and Education (ITME), IEEE*, 1, 133-136.

Ford, M., & Leinonen, T. (2009). MobilED – mobile tools and services platform for formal and informal learning. In M. Ally (Ed.) *Mobile learning: Transforming the delivery of education and training* (pp. 195-214). Edmonton, AB: Athabasca University Press.

Fozdar, B. I., & Kumar, L. S. (2007). Mobile Learning and Student Retention. *International Review of Research in Open and Distance Learning*, *8*(2), 1-18.

Hamat, A., Embi, M. A., & Hassan, H. A. (2012). Mobile learning readiness among UKM lecturers. *Procedia-Social and Behavioral Sciences*, *59*, 406-410.

Hashemi, M., Azizinezhad, M., Najafi, V., & Nesari, A. J. (2011). What is mobile learning? Challenges and capabilities. *Procedia-Social and Behavioral Sciences*, *30*, 2477-2481.

Hussin, S., Manap, M. R., Amir, Z., & Krish, P. (2012). Mobile learning readiness among Malaysian students at higher learning institutes. *Journal of Asian Social Science*, *8(12*), 276.

Ismail, I., Bokhare, S. F., Azizan, S. N., & Azman, N. (2013). Teaching via Mobile Phone: A Case Study on Malaysian Teachers' Technology Acceptance and Readiness, *Journal of Educators Online*, *10*(1). http://files.eric.ed.gov/fulltext/EJ1004895.pdf

Jacob, S. M., & Issac, B. (2008). 'The Mobile Devices and its Mobile Learning Usage Analysis', *International Journal of Interactive Mobile Technology, 2(1*), 10-18.

Kukulska-Hulme, Agnes (2010). Mobile learning as a catalyst for change. *Open Learning. The Journal of Open and Distance Learning*, *25(3)*, 181–185.

Looi, C. K., Seow, P., Zhang, B., So, H. J., Chen, W., & Wong, L. H. (2010). 'Leveraging mobile technology for sustainable seamless learning: a research agenda', *British Journal of Educational Technology*, *41(2*), 154-169.

MacCallum, K., & Jeffrey, L. (2009). 'Identifying discriminating variables that determine mobile learning adoption by educators: An initial study. Same places, different spaces', *Proceedings ascilite Auckland*, 602-608.

Mahamad, S., Ibrahim, M.N., & Taib, S.M. (2010). 'M-learning: A new paradigm of learning mathematics in Malaysia', *International Journal of Computer Science & Information Technology, 2(4),* 76-86.

Mahat, J., Ayub, A. F. M., & Luan, S. (2012). 'An assessment of students' mobile self-efficacy, readiness and personal innovativeness towards mobile learning in higher education in Malaysia', *Procedia-Social and Behavioral Sciences*, *64*, 284-290.

Nordin, M. N., Embi, M. A., Yasin, R. M., Rahman, S., & Yunus, M. M. (2010). The mobile learning readiness of the post-graduate students, *In EABR & ETLC Conference and proceedings*.

O'Malley, C., Va voula, G., Glew, J.P., Taylor, J., Sharples, M., & Lefrere. (2004). P. "WP4 – Guidelines for learning/teaching/tutoring in a mobile environment" Mobil earn deliverable. http://www.itu.int/net/pressoffice/press_releases/2014/23.aspx#.U5W8fvmwKkE

Parasuraman, A. (2000). Technology readiness index (TRI): A multiple-item scale to measure readiness to embrace new technologies. *Journal of Service Research*, *2(4),* 307–320.

Saxena, S. & Kumar, M. (2014). A Study of Attitudes and Psychological Readiness of Students While Using Mobile Techn ology in the Teaching/Learning Process. *International Journal of Computational Engineering & Management*, *17(2),* 29-33.

Research Article

Practices for Promoting Environmental Sustainability

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Abstract

This research paper deals with the need for enhancing the practices for Promoting Environmental Sustainability. The UNO emphasizes on the effective engagement of the public to address major concerns of environment and promotes the development of the regional Strategy on Education for Sustainable Development. E- Survey on Practices for Promoting Environmental Sustainability was conducted across India to find out about the practices of common people and their concern for environment. Questionnaire on Environmental Sustainability Practices developed by the researchers. The survey was conducted through online mode. SPSS was used to analyze the data. It was found that there is a significant difference in Environmental Sustainability Practices with respect to Gender favouring Girls. It was found that there is a significant difference in Environmental Sustainability Practices with respect to Occupation of the people. Environmental education aims at creating awareness and developing responsible behaviour of the individual towards the total environment. This would attempt to create a commitment among the people to protect the environment and conserve nature and its resources. The relevance for real life situation can be emphasized to develop an awareness among the on environmental problems and conservation.

***Keywords*:** Environmental sustainability, Renewable energy, Waste management, Conservation, Green technology, Sustainable development

Introduction

Environmental Sustainability Development means including key sustainable development issues into teaching and learning, such as poverty alleviation, citizenship, peace, ethics, responsibility in local and global contexts, democracy and governance, justice, security,

human rights, health, gender equity, cultural diversity, rural and urban development, economy, production and consumption patterns, corporate responsibility, environmental protection, natural resource management and biological and landscape diversity. This has prompted many politicians, policy-makers and public officials to define new policies and activities.

Statement of the Problem

E- Survey on Practices for Promoting Environmental Sustainability.

Objectives of the Study

- To examine the difference in Environmental Sustainability Practices of common people in India owing to difference in Gender, and occupation of the people.

Delimitations of the Study

The present investigation has the following delimitations

- The study was limited to the common people in India only.
- The sample was limited to 651 only.
- Standardized test materials alone were used.

Review of Related Literature

Review of related literature was conducted in order to analyse about the various studies done in the area.

Boiyo (2014) conducted a comparative study on environmental awareness and participation among secondary school students of Kasarani and Kibera Divisions, Nairobi, Kenya. The study revealed that there is no significant difference in the level of environmental awareness of students in Kasarani and Kibera Divisions. It was found that secondary school students both in Kibera and Kasarani Divisions had very low level of awareness of current and emergent environmental concepts and problems. The study also found that there is no significant difference in the level of participation in environmental activities among students in Kibera and Kasarani Divisions.

Ghosh (2014) conducted a study on environmental awareness among secondary school students in Golaghat District in the state of Assam. The study found that there was no

significant difference in environmental awareness among the secondary school male and female students of Golaghat district in the state of Assam.

Bordhan (2017) conducted a study on the environmental awareness among secondary school students in Kamrup (Metro) District, Assam. The study found that female secondary school students have higher awareness regarding the environment. The study also found that secondary school students studying in Assamese Medium schools have a higher level of awareness regarding the environment.

Dhanya and Pankajam (2017) conducted a study on the environmental awareness among secondary school students in Tamil Nadu. The findings revealed that 26% of the secondary students have low level of environmental awareness, 48% of the secondary students have moderate level of environmental awareness and 26% of the secondary students have high level of environmental awareness.

Barman (2018) conducted a comparative study of environmental awareness among secondary level students in Kamrup district (Metro & Rural), Assam. The study found that male students of rural area, private school and English medium school were found to be more environmentally aware in comparison to female students of rural area, private school and English medium school. The study also revealed that female students belonging to urban area, Government school and Assamese medium school were more aware to the environmental pollution than respective male students. The study also found that there is no significant difference in the level of participation in environmental activities among students in Kibera and Kasarani Divisions.

Design of the Study

The present study has been designed as a descriptive study.

Tools Used for the Study

Questionnaire on Environmental Sustainability Practices developed by the researchers. Personal data sheet prepared by the researchers.

Selection of the Sample

The sample for the study was selected randomly. The sample consisted of 651 people drawn from various places across India.

Statistical Treatment of Data

After the data was collected, it was subjected to statistical test of significance using SPSS package for testing the hypothesis formulated by the investigator. The major functional

variable for analysis and interpretation of the data includes Environmental Sustainability Practices of common public and the personal variables include Gender, and occupation. The following statistical technique was used for analysis and interpretation of data.

Critical Ratio and Anova

Critical ratio was computed to test the difference in Environmental Sustainability Practices with respect to Gender. One way analysis of variance was computed to test the difference in Environmental Sustainability Practices with respect to occupation.

Testing the Hypothesis

Further the data was subjected to appropriate statistical testes for testing the hypotheses.

Table - 1.1

Mean and Standard Deviation of Environmental Sustainability Practices

Variable	Gender	N	Mean	Standard Deviation
Environmental Sustainability Practices	Boys	116	23.66	3.135
	Girls	535	24.67	2.498

Hypotheses 1.1

There is no significant difference in Environmental Sustainability Practices owing to the differences in Gender.

Table 1.2

Table showing the difference in Environmental Sustainability Practices owing to Gender

Variable	Gender	N	Mean	Standard Deviation	Df	t-Value	Significant level
Environmental Sustainability Practices	Boys	116	23.66	3.135	649	3.768	0.000
	Girls	535	24.67	2.498			

From the above table, the significant value 0.000 is less than 0.01 which is significant at 1% level. So, the null hypothesis is not accepted. Hence there is significant difference in Environmental Sustainability Practices with respect to Gender favouring Girls.

Hypotheses 1.2

There is no significant difference in Environmental Sustainability Practices owing to the differences in Occupation of the people.

Table 1.3

Table showing the difference in Environmental Sustainability Practices owing to Occupation of the people.

Variable	Occupation of the People.	N	Mean	Standard Deviation
Environmental Sustainability Practices	Working Professional	120	23.68	2.873
	College Student	456	24.80	2.578
	Others	75	23.87	2.333

Table 1.4

One way ANOVA showing the difference in Environmental Sustainability Practices with respect to the difference in Occupation of the people

Variable		Sum of Squares	df	Mean Square	F	Significant Level
Environmental Sustainability Practices	Between Groups	151.166	2	75.583	11.107	0.000
	Within Groups	4409.473	648	6.805		

From the above table, the significant value 0.000 is Less than 0.01 which is significant at 1% level. So, the null hypothesis is not accepted. Hence there is significant difference in Environmental Sustainability Practices with respect to Occupation of the people.

Major Findings of the Study

- There is a significant difference in Environmental Sustainability Practices with respect to Gender favouring Girls.
- There is a significant difference in Environmental Sustainability Practices with respect to Occupation of the people favouring the College Students.

Educational Implications

It is essential to create awareness among people and make them to understand and value the issue of sustainable development. National Environment Awareness Campaign (NEAC) had been launched by the Ministry of Environment and Forests (MOEF), Government of India. This campaign was initially organized in 1986, with the objective of creating environmental awareness at the national level and since then it has become an annual activity. In this campaign, nominal financial assistance is provided to NGOs, schools, universities, research institutes, army units, etc to raise awareness and action-oriented activities. Therefore, if we want to live in a clean, healthy, safe and secure environment for a long time and wish to hand over a clean and safe earth to our future generations, we must give topmost priority on creating environmental awareness amongst the students through environmental education and encourage Environmental Sustainability Practices among everyone in the society.

Conclusion

This requires participatory teaching and learning methods that motivate and empower learners to change their behavior and take action for sustainable development. ESD consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way.

References

Akhtar, P. R., Sahidullah, F. T., & Das, P. (2010). Environmental and Population Education. Guwahati: Assam Book Depot.

Ali, M. (2016). A Study of Environmental Awareness among the Students of Technical Courses of A.M.U. *International Journal of Advancement in Education and Social Sciences,* 9-16.

Barman, N. (2018). A Statistical Based Comparative Study of Environmental Awareness among the Male and Female Students of Assam. *International Journal for Research in Applied Science & Engineering Technology*, 1769-1771.

Bhartiya, T. K. (2017). Assessment of Environmental Awareness among General Public of Assam (India). *International Journal of Applied Environmental Sciences*, 1359-1365.

Boiyo, K. (2014). Environmental Awareness and Participation Among Secondary School Students: A Comparative Study of Kasarani and Kibera Divisions, Nairobi, Kenya, M.Sc. thesis Department of Environmental Education, Kenyatta University.

Bordhan, S. (2017). A study on the environmental awareness among secondary school students in a district of Assam. International Journal of Advanced Education and Research, *2(2),*17-19

Das,K. (2019). Environmental Education and Environment Protection. In U. Kalita, & P. Sarma, Recent Trends in Education (pp. 182-193). Delhi: Akhand Publishing House.

Dhanya, C & Pankajam, R (2017). Environmental Awareness Among Secondary School Students. International Journal of Research – Granthaalayah, *5(5),*22-26

Ghosh, K. (2014). Environmental Awareness among Secondary School Students of Golaghat District in the State of Assam and their attitude towards environmental education. IOSR Journal of Humanities and Social Science, 30-34. https://unece.org/

Research Article

Attitude towards Smart Board and Learning Style in Relation to Academic Performance among High School Students

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Abstract

This paper reports on Attitude towards Smart Board and Learning Style in Relation to Academic Performance among high school Students. The sample constituted of 456 high school Students. The tools used for the study was – The Perceptual Learning Style inventory prepared and standardized by J.M. Reid (1987). Attitude towards smart board tool. Critical ratio, One way analysis of Variance, Two tailed test, Correlational analysis and Regression analysis were used to analyse the data. There exists a negative correlation between student's attitude towards smart board and academic performance. There exists a positive correlation between dimensions of learning style namely, visual, individual learning and dimensions of attitude towards smart board.

Keywords: Smart board usage, learning style, academic performance, technology integration, student attitude, digital learning

Introduction

Education is the first stepping stone for building a great nation. It has been recognized as a fundamental right and it viewed as a process of human resource development, where the knowledge, skills and capabilities are sharpened to achieve a wide range of objective. According to the great Greek Philosopher Aristotle, "Education is the creation of a sound mind in a sound body". It is the process by which an individual is able to function according to the experience of the society as well as according to his / her capabilities.

"Education is that process of development which consist the passage of human being from infancy to maturity, the process whereby he/she adapts him/herself gradually in various ways to his/her spiritual environment". In addition to this, the world outside academic media is also attracted towards new learning experiences with this kind of new technology. Education according to Will Matt is the apprenticeship of life.

Statement of the Problem

Attitude towards Smart Board and Learning Style in Relation to Academic Performance among high school Students

Objectives of the Study

- To examine the differences in Attitude towards Smart Board and Academic Performance with respect to Gender, Region, Type of Management
- To explore the differences in dimensions of learning styles with respect to Gender, Region, Type of Management
- To examine the relationship, if any, in the attitude towards SMART Board, Learning Styles and Academic Performance among High School Students.

Hypotheses

1. There is no significant difference in the Attitude toward Smart Board and Learning Style dimensions owing to the differences in, Gender, Medium of instruction, Type of School
2. There is no significant difference in Academic Performance owing to the differences in, Gender, Medium of instruction, Type of School
3. There is no significant relationship between Attitude toward Smart Board, Learning Style and Academic Performance.
4. Linear combination of Attitude towards Smart Board, Learning style and Academic Performance.

Method Adopted for the Study

A Survey method of research was adopted for the study.

Sample

The sample for the study was selected randomly. And it consists of 456 students drawn from 6 schools (two government, two government-aided, two private schools).

Statistical Tools Employed for the Study

The Perceptual Learning Style inventory by J.M. Reid (1987), Attitude towards smart board tool was prepared by the investigator, half yearly examination mar k s was taken as the Academic Performance.

Analysis of the Data

Descriptive Analysis, Differential Analysis, Correlation Analysis and Regression Analysis.

'T' Ratios for Dimension of Attitude towards Smart Board Owing to Differences in Selected Personal Variable

Table-1

Table showing the't' ratios for differences in presentation owing to differences in selected personal variables

Variables	Category	N	Mean	SD	t ratio	df	Sig
Gender	Male	228	27.42	1.993	1.831	454	0.068
	Female	228	27.73	1.619			
Region	Rural	228	27.46	1.972	0.771	454	0.441
	Urban	228	27.69	1.651			
Medium	English	304	27.63	1.678	1.313	454	0.190
	Tamil	152	27.47	2.078			
Family type	Joint	145	27.61	1.853	0.241	454	0.809
	Nuclear	311	27.56	1.807			

The obtained value is greater than 'p' value at 95% confidence level (0.05). Thus, there is no significant difference between presentation owing to Gender, Region, family type and medium. Hence, the hypothesis is accepted.

't' Ratios for Dimension of Learning Style Owing to Differences in Selected Personal Variables

Table-2

Table showing the 't' ratios for differences in Auditory Learning style owing to differences in selected personal variables

Variables	Category	N	Mean	SD	t ratio	df	Sig
Gender	Male	228	20.02	3.105	0.418	454	0.676
	Female	228	20.15	3.382			
Region	Rural	228	20.01	3.29	0.476	454	0.634
	Urban	228	20.16	3.19			
Medium	English	304	20.04	3.37	0.459	454	0.646
	Tamil	152	20.18	3.00			
Family type	Joint	145	20.20	3.05	0.514	454	0.607
	Nuclear	311	20.03	3.33			

***P<0.05**

The obtained value is greater than 'p' value at 95% confidence level (0.05). Hence the hypothesis is accepted. Thus, there is no significant difference between male and female students, rural and urban students, English and Tamil medium students. And also, joint and nuclear family does not differ significantly in Auditory learning style.

Multiple Comparison of Academic Performance of the Students within Various Sub Groups Classified on The Basis of Type of School Management

Table-3

Table showing the multiple comparison of Academic Performance of the students within various sub groups classified on the basis of Type of School Management

Variables	Sub groups	Mean difference	Significant Level
Type of School Management	Government Vs Govt Aided	0.803	0.716
	Government Vs Private	0.316	0.209

Govt aided Vs Private	1.789	0.209

***P<0.05**

- Govt. school vs. Govt aided school favouring to government aided schools
- Private schools vs. Govt aided school favouring to government schools.

Hence, it shows that Government school students are found to have better attitude towards smart board than those studying in government aided and private schools

Attitude towards Smart Board and Dimensions of Learning Style for the Whole Sample

Table-4

Pearson's Product Moment Correlation Coefficient between dimensions of Attitude towards Smart Board and dimensions of Learning Style for the whole sample

Dimensions	Auditory		visual		kinaesthetic		Individual Learning		Group Learning	
	R	Sig	R	Sig	R	Sig	R	Sig	R	Sig
Resource	0.376	0.000	0.604	0.001	0.416	0.000	0.404	0.000	0.217	0.000
Environment	0.441	0.001	0.502	0.000	0.265	0.000	0.205	0.000	0.166	0.001
Enhancement	0.323	0.002	0.301	0.002	0.121	0.001	0.103	0.001	0.022	0.002
Management	0.146	0.003	0.453	0.000	0.164	0.000	0.354	0.000	0.165	0.003
Presentation	0.269	0.008	0.598	0.000	0.321	0.002	0.596	0.002	0.222	0.008

The above table shows that there is a significant positive correlation between dimensions of learning style namely, visual, individual learning and dimensions of attitude towards smart board at 0.01 level. A significant negative correlation between dimensions of

learning style namely, Auditory, kinaesthetic, group learning styles and dimensions of attitude towards smart board at 0.01 level

Summary of Regression Analysis on the Effect of Selected Variables on Academic Performance of the Students

Table-5

Model summary of Regression Analysis on the effect of selected variables on Academic Performance of the students

Model	R	R square	Adjusted R Square	Standard Error of the Estimate
1	0.566	0.321	0.300	5.855

ANOVA

Model	Sum of Squares	DF	Mean Square	F value	sig
Regression	6736.20	8	518.17	15.12	0.000
Residual	14259.51	421	34.28		
Total	20995.71	429			

Discussion of the Results

Present study is confirmed to the findings of **Sharma (2017)** who revealed that there is a significant relationship on the impact of learning styles on academic achievement of secondary school male and female students. The present study confirms with the study of **Neetu (2012**) have explored that a positive and significant relationship between learning and thinking styles and academic achievement. And also confirms with **Brecler et all (2011)** that the result had revealed that significant relationship between academic performance and learning styles. This study reveals with the study of **Hemalatha (2013)** that there is no significant difference in their learning on the academic achievement and it contradicts with the study of **Sharma**

(2017) showed that there is a significant relationship on the impact of learning styles on academic achievement of the secondary school male and female students.

Conclusion

The purpose of the present investigation was to study the relation between Attitude towards Smart Board and Learning Style in relation to Academic Performance to some selected variables. The results strongly suggest that recognizing this association between attitude towards smart board, learning styles and academic performance will necessarily lead to both more perceptive teaching and also more responsive learning. Also, the findings are an original contribution to the existing knowledge as it may be found to be useful in the field of education which may also serve as a data base for future research.

References

Awang. (2017). Relationship Between the Learning Styles Preferences and Academic Achievement. *IOP Conference Series: Materials Science and Engineering*, *226.*

Davidovitch. (2017). The Effect of Smart Boards on The Cognition and Motivation of Students. *Higher Education Studies*, *7(1).*

Eda Ustunel. (2014). A Study on The Influence of Smart Board Technology on Student Engagement in and Perception of Classroom Activities. *Retrieved From academicjournals.org*

Hemalatha. (2013). A Study on Learning Styles and Their Influences on Academic Achievement. *Journal on Edu track, 12(5*).

Marcellus. (2017). The Effect of Smart Classroom on Learning and Teaching Effectiveness. *Retrieved From www.researchgate.com*

Pamela. (2016). *Strategies And Techniques for Research in Education*,1st Ed. New Delhi: Neelkmal Publication Pvt.Ltd