M-Learning for Inclusion-A Status Study among the Pre Service Teachers

Submitted by

POORNIMA M
(20PSE008)

Under the Guidance of
Dr. (Mrs). V .MRUNALINI
(Assistant Professor in Special Education)
DEPARTMENT OF SPECIAL EDUCATION

A THESIS SUBMITTED TO THE

AVINASHILINGAM INSTITUTE OF HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN

COIMBATORE – 641043

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF EDUCATION – SPECIAL EDUCATION

(HEARING IMPAIRMENT)

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Signature of the Head of the Department

Signature of the Dean

Signature of the Guide

ACKNOWLEDGEMENT

With the great modesty, I place this thesis at the feet of almighty, I prostrate before him for his external guidance.

My thesis work is based on "M-Learning for Inclusion-A Status Study among the Pre Service Teachers".

The investigator expresses her deep sense of gratitude to **Prof. S. P. Thyagarajan**, Chancellor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, for granting permission to undergo this study.

The investigator expresses her ceaseless thanks to **Dr. (Mrs.) V. Bharathi Harishankar**, Ph. D., FRSA Vice Chancellor, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore for giving opportunity to do this work.

The investigator is very much obliged to express her sincere thanks to **Dr. (Mrs.) S. Kowsalya**, M. Sc., M. Phil, Ph. D, and Registrar. Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore for the kind help and support extended throughout the period of study.

The investigator expresses her noble indebtedness to **Dr.G.Victoria**, M. A., M. Ed. Ph. D Professor and Dean; Faculty of Education, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore for all the timely help rendered by her.

The investigator deems it a pleasure to acknowledge her profound gratitude to her research guide **Dr. (Mrs.) K. Sambath Rani;** M. A., M. Ed. M. Phil. Ph. D., Associate Professor, Head of the Department of Special Education, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore for her able guidance, valuable love, suggestions advice and instant help during the study. She was real friend, Philosopher and Guide in the truest sense.

My deep felt thanks to the **Faculty Members of Department** of **Special Education**, Avinashilingam Institute for Home Science and Higher Education for Women, for their constant encouragement given to bring out this work.

I express my gratitude to the **Authorities and Heads** of various Institutions in and around Coimbatore Districts.

My hearty thanks to **Employees with Different abilities** for rendering their cooperation and responses for this study.

The investigator expresses her heartfelt thanks to the **principals, teachers, and sample with Hearing impairment, Physically Handicapped and Visual Impairment and non-disabled samples** included in the study, as without their willing it would have been impossible and pursue the work.

The investigator also proposes her thanks to the **technical team** in Department of Special Education for their support during the study.

My wholehearted gratefulness to **technocrats** who gave their support at all the time.

The investigator also proposes her thanks to all **non-teaching staffs** in Department of Special Education for their support during the study.

Finally with high regards and great pleasure the investigator extends her sincere thanks to her **parents and all her family members and friends** for their constant support and encouragement throughout her academic pursuit.

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“We try to work on things which billions of people will use every day.”

- Sundar Pichai

1.1 HISTORIC TIMES IN THE DIRECTION OF SEGREGATION, INTEGRATION, AND INCLUSION

In sketching the evolution of edification in India unique wants must instigate along with mainstream schools and its forerunners to what we've seen today insecurely concept “education” way it was perceived and experienced Indians of the past. Consequently most basic The Rig Veda is the earliest documented written system of instruction. It is primarily concerned with system of ethics and instructional practices (generally speaking, Dharma literally means "the understanding.") That's known as the Vedas period in India's scholastic history, and According to the study, it is over 5000 years old.

Children and young adults having impairments continued to be among the most marginalized communities in all of our cultures, as they face social prejudice, limited employment options, and, most importantly, poorer developmental achievements..Teachers should, by earliest time possible, educate the children in the classroom with their peers and in line with the curriculum framework. This common understanding did not come from one period at one time, it emerged over an evenly during a long period of time from the 1960’s the actions to be taken can we examine at two levels: that of system and that of school. (Hegarty, S., & Alur, M. (Eds.). (2002))

In today's society, there is a lot of talk about inclusion—the idea that everyone should be welcomed and accepted regardless of their background or circumstances. But the idea of inclusion is a relatively new one. For hundreds of years, our society was profoundly segregated, with different areas and social circles reserved for different groups of people. Today, we are still far from being a fully inclusive society, but the halls of power have begun to open up to people from a broad range of backgrounds and experiences.

We all want to be part of a community that feels like home. For me, that means a community that is inclusive and welcoming to people from all walks of life. Inclusion means that we respect and value the unique experiences and perspectives that others bring to the table. It means that we listen, learn, and evolve together.

1.2 HISTORIC TIMES OF M-LEARNING

Email is the most popular means of communication on the Internet, and mobile devices, too, are used mostly to communicate on the Internet. This observation confirms the traditional view, long entertained in philosophy, that communicating is a linguistic necessity. Starting from an analysis of the pervasive connection between communication and education, I refer to the intimate relationship between communication and education and the section then examines the issue of the separation between school/academia and society; recalls that in childhood itself is socially constructed; and demonstrates the advantages of a learning environment that contains not only texts but also pictures. In such a situation, the ability to communicate is necessary for interaction and as a result, it is an important requirement. In this communication, communication is the source of m-learning.

M-Learning is among the most important trends in the twenty-first century, essential features of the educational process that has immense the current educational system has ramifications. Nevertheless, an Indian context, m-Learning is one of the methods adopted by educators to provide learning effectively. The aim of m-learning is to make making learning more adaptable, transparent, and individually tailored. Mobile technology is really the process of acquiring any understanding, skills, after that, cellular phone responsibilities. This is the definition of a means of communicating using a mobile phone. With the help of portable devices and other technological tools, interactivity of the learner has been enhanced, learning in the mobile society has been improved. They can update and update their knowledge, as required, in order to satisfy the demands of society, Mobile learning has evolved from a tiny ongoing research to a collection of substantial activities in classrooms, postsecondary learning, businesses, and other settings all around world in the last decades.

M-learning is a form of distance education that is created to fulfil the criteria of people with disabilities. M-learning stands as an education method that is considered to be the most effective way of providing learning for people with disabilities, as it can be carried out anywhere, any time and any place. It is a way of providing learning that is accessible to everyone on an individual basis. M-learning is often confused with e-learning.

1.3 IMPORTANCE OF M-LEARNING

A sprouting teaching methodology in the university system is Mobile learning. The surroundings around creation is shifting fleetly due to exponential development in technology. Field of Edification is also altering due to progression of technology. E-learning is a perception which implant edification with technology. Efficacious combination of mobile learning (m-learning) technologies in enlightenment primarily demands that teacher's perception of such technologies ought to be determined. Mobile literacy or M- Literacy is a volume of E-learning. There's no out there instrument that assesses teachers' perceptions of m-learning. Several portable learning systems, this system provides teachers with real-time response about individual and group learners.

Currently, many investigators emphasise the importance of mobile learning essential fragment the instructional experience as well as the most effective guide gadget for just the current situation. Indeed though M- literacy is subcategory of E-learning there are positive differences among these place of work. M- Literacy can really be summed up as "any kind of learning that happens when the learner isn't at a fixed, destined position, or learning that happens when the learner takes advantage of the literacy openings offered by mobile technologies".

We live in an increasingly mobile culture. We text, we email, we Instagram and we Snap chat. We have the latest gadgets and we have the fastest internet connections. But when it comes to education, we're still stuck in the past.

We've all heard the phrase "learning is a lifelong journey" — but what if we could make that journey more accessible to more people? Mobile learning has been making waves in the education world, and special education is one of the areas that could benefit the most. Whether it's helping a student with a disability access education, or simply providing more mobility to a student with a disability, mobile learning has a lot of potential to help students achieve their highest potential. What mobile learning is, how it can be used to help students with disabilities, and how YOU can incorporate mobile learning into our special education classroom is the focal we focus here.

Mobile literacy (M- literacy) has come a dominant, important approach to educate, and train the world. The mobile bias are precipitously reclaimed by the scholars for educational events. The operations of mobile literacy range extensively, from kindergarten to advanced schooling, commercial literacy a variety of professional

and casual settings literacy to classroom literacy, digital literacy, and field research has looked into preceptors' generalizations cell devices literacy also proposed, school teacher preceptors like to see a smartphone version bias accustomed to the new fullest extent possible eventuality, More sophisticated cultivating is required. Preceptors' assumptions on mobile literacy.

The need for inclusivity and knowledge accessibility has emerged as a challenge that needs immediate fix. By being energetic students, Individuals with disabilities generally feel better about themselves and do not regard their limits as a barrier. It isn't always determined by a person's capabilities of an educator. As a result, possessing essential the availability of gadgets is extremely beneficial. Helpful innovation may be a universal a phrase which has helpful, adaptable, and rehabilitating equipment for people with disabilities for people 'Virtually everything that could be utilised to accommodate for a deficiency of particular talents' is included in the definition for people with a disability (Reed and Bowser, 2005),Mobile learning as substitute to assistive technology devices towards inclusive education. The integrating m - learning in inclusive edification specializes to coach or to practice, and help as well as find studying possible.

Application of mobile devices is not just about learning in the classroom. Is used for other purposes as well. In the educational realm, mobile devices are a major trend and a necessity. This trend is quickly becoming a standard part of our educational system. Educators are not usually given the luxury of choosing what they want to teach and when they want to teach it. Moreover, learning is typically not done in a classroom environment with the opportunity to collaborate with others to solve problems. M-learning allows for highly personalized learning in the classroom (Shulman, 2012).

1.4 EDUCATION

It's true to comprehend which factors These components are important for the growth of more integrative in addition to comprehensive implementation paradigms for sustainable in postsecondary learning organisations and to understand how the implementation of these models can be improved. There is a disconnect in the research between both the relevance of education for long-term sustainability and the actual implementation of its inclusion. Higher education institutions outstanding to the Sustainability education is multidimensional and complicated.

Pleasing avowal from Rig Veda “Edification is something which makes man self-reliant and self-less.” Making education relevant to twenty first-century students is a difficult and vital endeavour. While most of the education system has changed in the last generation, remained unchanged, Educators have been adapting to a new era in their education by using new instructional methods and technologies. Efforts to make education more applicable to today's world students in the A collection of teacher educators, notably instructional technology, would improve the twenty - first century unless they could reach an agreement on matters regarding 21st Century skills and competencies. Professional development, ICT skills, training of teachers, and education reform are all issues that need to be addressed. Its scientists looked into it and provide a summary of every agreement made either by instructional innovators group, discussing each consensus in light of the existing to emphasize exceptional ideas and explain misconceptions in the text, or emphasize appropriate strategy

Learning through games is popularly utilized In India, schooling is free, but higher education is not remained as quick to adopt it. The pandemic situation has required us to use a more technical teaching and learning process, which has transformed teaching and learning processes. Due to the significant challenge there seems to be no documentation mostly on inefficiencies of transferring the conventional process of teaching assistant learning in higher education, first from offline to the online form to internet platforms are available it provides great benefit in technological adaptation - related gameplay that keep teachers and students engaged and motivated throughout their academic experience.

1.5 EXCEPTIONAL EDUCATION

We live in a diverse world where everyone is unique and exceptional. As a result, a child proceeds into the world with its own unique potential of body and mind. Some are fortunate enough to be born with extraordinary potential, while others are averages or even suffer from disabilities since their birth. This gap between the cognitive, social, and emotional abilities and capacities of the children related to their learning, adjustment, and development, as well as the environmental differences encountered by them in their development, may further be widened by the source of these differences.

Special education is a form of education that is highly specialized and specific in environment .It covers all aspects of education for gifted and underprivileged

children. Children, exceptional offspring, and children with mental and physical disabilities. "If students in the same classroom are significantly different, it is difficult for the teacher to provide assistance without special educational services. Schools provide assistance for students who differ from the average". Academic success through a variety of special education services and supports. These services and supports are created to fulfil the unique needs of the children, which may include: seating arrangement, communication style, extended time, etc. to ensure the child's needs are met in the least restrictive environment possible. The goal of special education services is for the child to be ready for the general education curriculum.

Based on the principles of individualized instruction, special education follows the preceding guidelines:

i) Individualized variations: Everyone is different and different, thus each individual possesses different understanding the difference each individual from the other based on their abilities, circumstances, and needs.

ii) There is no rejection: Every student through special needs a free and appropriate education is offered without discriminatory practices of any kind.

iii) Fair and equitable assessment: Each child with special needs must undertake a detailed evaluation individualized evaluation before to placement in an educational program. Testing is also required on a regular framework to evaluate individual progress and academic performance.

iv) Customized Education Program: Students with additional requirements receive an tailored Learning Program, which may consist of a particular class or a resource room within the systematic school, for specific portion of the day.

v) The least constraining surroundings: The situation is important towards allowing individuals with disabilities to learn including children with typical development classrooms without imposing excessive boundaries.

vi) Participation of parents: Special education is a topic that could be effectively implemented if parents actively participate in the special education curriculum for children with disabilities

1.6 INCLUSIVE EDIFICATION

India is home to one of the largest and most diverse school populations in the world. There are thousands of schools, many of which are very rural in nature, serving children who speak dozens of languages, come from different religious and linguistic backgrounds, and have different learning styles. As a result, many schools in India face significant challenges when it comes to inclusivity, particularly when it comes to teaching children with special needs. India also lags behind many other nations when it comes to inclusive education legislation, leaving many children with special needs without access to the supports they need to learn.

India represents over a billion people, it is now the globe's second - largest republic. One-sixth of the world's public school-aged children attend public schools in India. However, it is estimated that only 1-in-10 children with disabilities are enrolled in these schools. This is in part due to a lack of awareness about the benefits of inclusive education among teachers, parents, and policy makers.

Inclusive Education is not just a term defined by the individuals in the field of Education in India .It is the term filled with emotions, passion of each and every single special educator and general educator prayer towards "including children with disabilities" now "regular" classrooms for children without disabilities. Pleasant and helpful .The teaching assistant sits next to the child with hearing loss and smiles. The parent-assistant compliments this child and offers assistance to the others. The teacher sits next to and smiles at the child with hearing impairment .The parent-helper praises this child and assists the children.

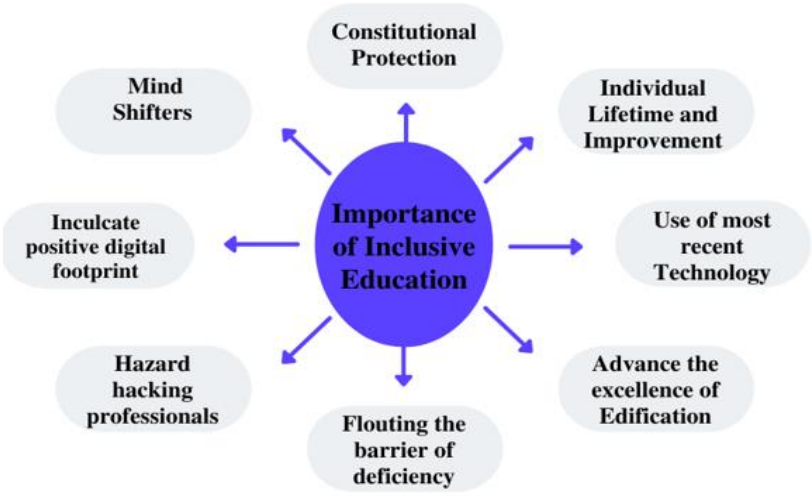
Inclusion in the classroom setting is necessary in a successful Process of attempting to teach. Mobile Education promotes creativity and accessibility number of students, which encourages learning. It is beneficial to students cope with stress and pressure of academic success. It promotes learning speed. It is within their abilities it motivates kids to succeed intellectually to persevere. According to researchers, mobile as "It is an inexpensive, user-friendly, simple, productive, flexible, handy, compact, efficient and personal", and explained this technology as "very useful in our daily lives". That could improve their academic excellence, talents, understanding, and intelligence by using it. It can promote Educational outcomes and inclusiveness .A performance review for educational outcomes which represents what when student has learned being carried out as

shown in a set of instructions. It faces significant struggle in maintaining good academic performance.

1.7 CHARACTERISTICS OF INCLUSIVE EDUCATION

- Identifying and accepting diversity.
- Edification is a fundamental right of all.
- Edification for all and school for all.
- Recognition and provision to children having exceptional personal and educational needs.
- Handier link between general and special education.
- Need based instructional strategies.
- Planning and policies are strong.
- Involvement of parents and community.
- Educator's as a role model.
- Teaching strategies and curriculum are flexible.
- A child centered approach.
- Diversity is an experiment.
- It strengthens general edification system.
- Achieve social equality
- Developing enterprising citizens

1.8 IMPORTANCE OF INCLUSIVE EDUCATION



IMPORTANCE OF INCLUSIVE EDUCATION

FIGURE-1

1.9 BENEFITS OF INCLUSIVE EDUCATION

This is the best way to develop personality. It is no secret that education is the key to success. The only way to achieve our goals is through education and have been shown to improve retention rates, boost student achievement, and reduce dropout rates. Inclusive education also helps ensure that all children, including those with disabilities, are given the opportunity to learn and grow. Fits of inclusive education provide equal access to the materials and resources needed to learn. This helps students from marginalized communities succeed in school.

1.10 ONLINE EDIFICATION

Online edification is the future of schooling. Online edification has originated through an extensive technique in the past few eras. Online education is the delivery of education and training services wholly or partially delivered over the internet. E-learning is also referred to as online education, digitally acquiring knowledge, and website studying and web-based instruction. It is also sometimes called "distance education" or "continuous education" when referring to the delivery of education without requiring the student to be present in a classroom or other facility.

Online education is a great way to expand your education without taking time away from your other commitments. Whether you want to learn something new, build on what you already know, or earn a degree, online courses can provide a convenient and flexible way to learn. They can also offer a cost-effective way to expand your education, without sacrificing quality or the opportunity to learn from expert teachers and experts in their fields.

There’s a lot of talk about diversity, inclusion and creating an atmosphere of equality in the workplace. But what does that really mean? To me, inclusion means creating a culture where everyone feels welcome, valued and respected. It’s about creating a space where people can be themselves and feel comfortable being vulnerable in front of their colleagues. Online education encourages inclusion.

So how is internet distance so important in erudition? And why now? Online segregation erudition satisfies the importance of an ever-increasing populace among individuals who are unable or unwilling to do so contribute in the conventional schoolroom surroundings. Several students’ people who would be unable to be present at

conventional classes who are unable to find work specific they reside in the selected organisation's class who work full-time and can only study at or near inaccessible sites afterward profession, including those who humbly wish to study self-sufficiently.

The fundamental standard for scholars towards contributing access to a computer is required for an education platform. Internet, and the inspiration to be successful in an unconventional environment. Digital developments offer an example exceptional routine towards the development unbound by time or position allowing for user-friendliness towards edification available at a given time, through location. Students are finding the digital environment to be a convenient way to fit academics into their heavy workload. For many of today's students, the ability to take a course from anywhere with Internet connectivity, 24 hours a day, seven days a week, is a huge motivator.

1.11 NEED- SPECIAL EDUCATION REQUIRES ONLINE EDUCATION?

- ***Online Learning Stimulates Accessibility:***

The World Wide Web, as the preferred means for digital training, provides impaired researchers with the opportunity to be instructed. Scholars who are materially challenged no longer have to go significant distances and overload up with prospective conflicts over it, including being stressed for time and constantly coping with trauma, thanks to computer-based information. In fact, investigation shows 90% of disabled youngsters do not even attend school. A lot of individuals already do not have the capability or funds to travel long distances, let alone our disabled scholars.

- ***Online Learning Eliminates Discouragement:***

Due to the convenience provided by online learning, learners feel freer to participate more, as opposed to being in a loud or noisy environment that would affect their concentration. Online learners also have direct access to the resources they need, which can positively impact their performance. It is also worth noting that online educators are constantly striving to remove barriers to encourage participation in online classrooms.

1.12 HOW PANDEMIC HAS INFLUENCED AND CREATED SUDDENLY THE NEED FOR ONLINE TEACHING AND LEARNING

It is of the highest importance that teachers be prepared to throughout inclusive classrooms, interact with a range of students. The sudden global shift to a virtual

teaching method, as a result of the COVID-19 epidemic posed the concern whether a virtual learning approach might impart the essential modifications in pre-service professionals to promote inclusive competency. In General education and special education, instructors had to adapt swiftly transit to digital or distant instruction, as they were faced with limited access to public schools and universities was during epidemic of COVID-19. For learners, instructors, authorities, and families all over the globe, the quick transformation in learning was a problem. Due to the physical separation of students and educators caused by the epidemic, one of the most difficult issues was keeping kids motivated throughout open and distance learning. The following three primary themes emerged from the several articles released on digital active learning during COVID-19: Pedagogical methodology for engaging online learners, student demographics in multiple academic contexts, and specific choosing of learner engagement tactics and resources throughout this crucial online or remote learning transition.

It's been reading and listening to partners since March 2020, inquiring about the numerous stressors they encounter. Furthermore, several forms of recent discrimination, economic instability, and environmental calamity. Environmental modification is associated with the long result or situation of a number of quick, unexpected, and harmful atmospheric circulation generated by human intervention. And use this description as a guide, it can be proposed as the protracted influence of unanticipated socioeconomic, historical, and socio-political on teacher development is unknown. an open question. In addition to the intermediary aspects that are critical for enhancement attempts, key problems comprise:

(1) Educational interventions for community college and teaching assistants are at odds,
(2) The importance of teachers,
(3) Continuing professional and innovation, and
(4) In education systems, accessibility, diversification, and inclusiveness are important.

1.13 FUTURE OF ONLINE LEARNING AND M-LEARNING

Online education is a rapidly growing field, but with it comes a wealth of opportunities and challenges. In the past five years, the number of online courses has grown at an incredible rate. Today, millions of people worldwide are taking online Education is a rapidly growing field, but with it comes a wealth of opportunities and

challenges. In the past five years, the number of online courses has grown at an incredible rate. Online education has come a long way since the first web courses were offered over a decade ago. Today, millions of students are taking courses taught by world-class faculty through massive open online courses (MOOCs) and other digital platforms. The future of online education is even brighter with new technologies and platforms on the horizon.

The future of mobile learning is inextricably tied to the future of education. As new technologies emerge, so do the expectations of the students and the teachers. The future of mobile learning is inextricably tied to the future of education. As new technologies emerge, so do the expectations of the students and the teachers.

1.14 STATEMENT OF PROBLEM

The problem selected for the present inspection is

"**M-Learning for Inclusion –A Status Study among the Pre Service Teachers".**

Definition of Technical Terms:

M-learning:

The emergence of a new educational modalities, mobile-learning (m-learning), was well-defined as "the processes of knowing and understanding throughout discussions across different settings between persons and individual interactive devices" by these concluding methods and broadcasting (Sharples, Taylor, & Vavoula, 2007: 224).

Inclusive Education:

Inclusive practice entails placing all children in the same classrooms and schools. It implies authentic learning possibilities for populations that have previously been left out - not just disabled children, but also presenters of marginalized languages and dialects.

- United Nations International Children's Emergency Fund

According to Mishra, 2002 making programmes for impaired students as an essential component of something like the mainstream schools rather than a system with general education is what inclusive education is all about.

Special Education:

Special Education states in particular design instructions or approaches should fulfil its exceptional requirements for exceptional individuals who have dedicated materials and resources accessible.

Google Meet:

Google meet is well-defined as “the video communication tool”.

Google Slides:

Google slides is defined as “an online presentation application”.

Google Classroom:

Google classroom is well-defined as “a free blended learning platform”.

Google Forms:

Google forms is defined as “the free online software that allows you to create surveys, quizzes” and etc.

Jam board:

Jam board is defined as “the digital interactive whiteboard”.

WhatsApp:

WhatsApp is defined as “the learning tool that supports free voice and video calls so teachers and students can stay in touch, even outside stipulated study periods”.

Quiz:

Quizizz is defined as “a gamified student engagement platform”.

Screen Recorder:

It is defined as "Screen capture software which converts screen output into a video for teaching a programmed or displaying capabilities to increase the brand awareness."

1.15 THE STUDY'S NECESSITY

As Educators we have to consider the higher education platform to be strong enough to promote the future generation with all modernising elaborate evidence in the field serving the children with special needs as it promotes inclusive education. Higher education has to inculcate their understanding and participation towards technology where it builds the technological world completely.

As educationalists, specialists and instructors in the field of special education we have encountered through a thought-provoking system of online learning which chains inclusive education completely .Children with any kind of disability will be accessible through mobile learning with appropriate supervision and acquaintances.

B.Ed scholars are the gate keepers for stimulating inclusive education where they construct innovative pathways to endorse the children with different abilities in the inclusive setup.M.Ed scholars are the hazard hackers to cultivate new research where traditional and technological learning can stimulate and blend children with disabilities into inclusive education. Ph.D scholars are the narrators. Hence all the stated scholars are the effective correspondents to astound the importance of mobile learning through safekeeping and promote inclusive education all over the globe.

1.16 THE STUDY'S OBJECTIVES

- To assess the B.Ed, M.Ed. and Ph.D scholars regarding the usage of mobile learning in the field of edification.
- To find out the confidence level of B.Ed, M.Ed. and Ph.D scholars taking into account the utilisation of mobile educational tools

According to the survey and the literature review

- To select mobile learning applications that are highly useful, handy and mobile friendly to foster teaching and learning and this promote inclusion.
- To sensitize the reason aspects of the selected mobile learning tools to the needy through survey and intervention.
- To study the effectiveness of the intervention given.

1.17 SCOPE OF THE STUDY

- The study highlights that children with special needs are not left anymore behind in an general classroom they will access in the mobile friendly classrooms in the future where successfully showcase NEP-2020 has successfully implemented inclusive education all over India with the help of m-learning.
- The study promotes the pre service teacher trainees to shadow appropriate mobile learning tools to promote the future edification into inclusive setup.
- The study supports to understand that the traditional classroom teaching is really the value of Knowledge Park, but years and years of intensive programmes are materialized to promote inclusive education in India still it lacks. With the help of technology blended in the traditional classrooms through the upcoming higher educational professionals paves the way to effective inclusive atmosphere. Where we all have the guide gadget (mobile phones) in our hands. "It's time to teach with **mo**bile and bo**ok** known as mook learning".
- The study paves the way for digital teaching and learning.
- The study flaunt the social interaction features among the collaborative workers (pre service teacher trainees).

1.18 THE STUDY'S ORGANIZATION

The problem selected for the present inspection is **"M-Learning for Inclusion- A Status Study among the Pre Service Teachers".**

- The First chapter includes Introduction, Statement of the problem and definition of the technical terms, Prerequisite of the study, Purposes of the study and opportunity of the study.
- Similarly Second Chapter presents the Review of literature to encourage this topic.
- The Third Chapter discusses the methodology employed in the study. It covers the sample selection ,tools used with selected samples
- The Fourth Chapter highlights the Results and Discussions. In the well-lit of the findings, appropriate interpretations have been made.
- The Fifth Chapter deals with the Summary of the findings discussion, recommendations, suggestions and Conclusion.

CHAPTER II

REVIEW OF LITERATURE

2.1 INTRODUCTION

“Your literature review will inform your question, theory, and methods, and your question, theory, and methods will help set the parameters of your literature review. This is a cyclical process.” (O’Leary 2010, p.83)

"Technology can become the “wings” that will allow the educational world to fly farther and faster than ever before—if we will allow it."

A reviewed literature is a compilation of papers related to a certain field of study. It identifies and summarizes all relevant studies on a particular subject. It is essential that your research study remain focused. "Doing serious, comprehensive, knowledgeable study required a fundamental, comprehensive and detailed, professional existing literature." (Boote and Baile, 2005). Research articles serve as a quick reference for a single issue.

According to Kochhar, West, and Taymans (2000), inclusion is defined as children with disabilities participating in the very same environment as their peers who do not have impairments, even if their learning objectives are unique, and current iteration their peers who do not have special needs. Inclusiveness also refers to the scheduling of school programmes and activities for students with disabilities in order to optimize their opportunities to engage.

2.2 PURPOSE OF LITERATURE REVIEW

While beginning the actual study, a reviewed literature builds acquaintance with each other and comprehension of recent findings in a certain topic. Performing an existing literature should likely determine whether investigation has indeed been performed about particular issue and determine what would be undiscovered.

2.3 M-LEARNING

This study presents a mobile exploration activity that guides student at elementary school level to learn during a social science activity with digital support from mobile devices and wireless communication. An inquiry-based mobile learning approach to students support cognitive learning and increase their inquiry learning ability (Ju-Ling

Shih, Chien-Wen Chuang and Gwo-Jen Hwang, 2010).

Paul Williams and Mary J. Granger (2008) have explained mobile learning is no longer a novelty. Thousands of post-secondary education institutions and millions of workforce and distance education students worldwide consider m-learning as mainstream, pervasive, learning delivery mode. It is different and alternate approach to face-to-face, distance learning (D-learning) and Electronic learning (E-learning). A gap exists in the literature regarding the effectiveness of m-learning. It is important to evaluate this learning delivery mode against face-to-face learning. This study examines M-learning effectiveness vis-à-vis Face-to-face and investigates the extent to which students accept the delivery of learning conducted through this new paradigm. A quasi-experimental research design is proposed to determine the impact to m-learning on student performance and to uncover factors that influence user acceptance of m-learning. The study is a quasi-experimental non-equivalent control group research design with control group (face-to-face) and treatment group (m-learning) population. The control group receives a face-to-face lecture, while the treatment group has unlimited access to an m-learning MP3 file recording of the face-to-face lecture. After the face-to-face lecture, the control group takes a pre-test (quiz1) after a week of unlimited access to MP3 file; the treatment group also takes a pre-test (quiz1). Both groups will then have unlimited access to the MP3 file for one week, during next week, both groups will take part a post-test (quiz2). Seven sections of an undergraduate information systems required core course participated in this study. Course sections are paired – one control and one treatment group per pair. The remaining sections are randomly assigned to a control or treatment group. Survey data from the questionnaire, survey and quizzes are collected by the investigator. The investigator is the primary coder and is responsible for assessing coding consistencies, scale reliability, anomalies and for identifying outliers.

A.H.Muhamad Amin has developed a management tool for mobile learning, which includes four main phases' viz., planning, analysis, design and implementation. It has four core modules viz., course, schedule, grade and assignment. Each of these modules has been built on mobile web form, which is different from the normal web form. Each mobile web form can have multiple forms. This application has adopted Microsoft.NET architecture and uses Microsoft Visual Studio as the development tool. This research was aimed at the understanding interaction experience in m-learning and aspects of m-learners

and their environment. In achieving this, acceptance study has been adopted. The user acceptance study for m-learners has been categorized into mains areas interaction experience in the mobile learning environment as well as the usability of mobile learning management tool. In mobile learning environment three characteristics were examined: understanding of the mobile learners (their characteristics, psychological and physical capability), understanding of the mobile learning environment (motivations and circumstances of mobile device usage and adoption) and understanding of mobile experience which differs from desk computing (A.H.Muhamad Amin, A.K.Mahmud, A.I. Zainal Abidin and M.A. Rahman, 2006).

The research explores the aspects that drive university students' mobile learning continuation from a web - based learning viewpoint, depending upon applications, sensory pleasures philosophy, and literature linked to perceived integration. A study model was created and tested using data from 261 Chinese college students who use an online flipped learning platform for M - learning. The proposed model was validated using structural equation modelling (SEM), and the SEM results were used as inputs for a neural network technique to explain mobile learning persistence. The findings reveal that students' extrinsic reward (social need) and internal gratifications influence mobile learning persistence both directly and indirectly (affective need and entertainment need). Affective need is the most important component determining mobile learning persistence, followed by social need and amusement need, in order of standardized relevance (Zhang, M, Chen, Y, Zhang, S, Zhang, W, Li, Y, & Yang, S. (2022))

J. Banerjee and I. Bose (2011) published a paper titled "Higher Education through Mobile Learning: An Analysis of Kolkata Students." They aimed to identify persons who are interested in M-learning as a mode of management education, as well as the rationale for their preferences for mobile-based education over traditional schooling. It was shown that 80% of participants knew M-learning platform; 56% of responders were interested to attend management courses via M-learning provided it’s available. The overall findings revealed that there is a high level of awareness about M-learning. According to the findings, a large number of people are willing to attend courses via M-learning. It was also shown that the average preference for a management course delivered via M-learning is higher than usual.

A study named "Attitude of Post Graduate Students towards Mobile Learning" was conducted by Fouzdar, K. and Behera, K.S. in 2017. Students do not need to be a specific age, gender, or member of a specific group or area to participate in learning opportunities since mobile learning is a revolutionary educational strategy that supports flexibility. A total of 150 students (male and female) from Semesters 2 and 4 were chosen as a representative sample of the entire population. The data was gathered using an attitude scale. The CR (Constructed-Response) test was used to determine whether there was a significant difference between the means of both groups. There is no substantial difference in the attitudes of PG male and female students about mobile learning, according to the findings. It has been discovered that PG students in India have a neutral attitude regarding mobile earning, i.e. a satisfactory or average attitude toward mobile learning.

Ali Mugahed & Al-Rahmi (2022). Acceptance of mobile technologies and M-learning by university students: An empirical investigation in higher education. In recent years, mobile-learning (M-learning) apps have expanded in popularity and demand, and they have become commonplace in modern educational institutions. The study's main goal was to identify the important elements that influence university students' intentions and actual use of mobile learning in their studies. This study used the technology acceptance model (TAM) to look into the effects of numerous aspects discovered in the literature on students' adoption of M-learning systems in higher education. A paper questionnaire was used to collect data from 176 university students. The SEM technique was used to analyse the data. Students' acceptance of M-learning is mostly driven by perceived mobile value (PMV), academic relevance (AR), and self-management of M-learning (SML), according to the findings. The implementation of M-learning programmes. The findings of this study provide critical information on how higher education institutions can improve students' acceptance of M-learning in order to promote students' attitudes toward it (ATT) and behavioural intentions (BIM) to use it in the teaching and learning process. These findings have major consequences for M-adoption learning's and application.

2.4 PRODUCTIVITY OF ERUDITION

When universities introduce operational educational programmes, participants must understand the instructional techniques to m - learning, as according Lindsay (2016). (Gordon, 2014; Muafi, 2012). Topala (2014) claims that productive

knowledge is gained when genuine feelings and individual advancement are established. Individualized education interests, smartphone capacities, and convenience evaluations all play a vital part in users' behaviour when it comes to embracing collaboration m-learning platforms, according to Alnabhan & Aljaraideh (2014).

According to Al-Adwan et al. (2018), a variety of factors influence an individual's decision to use information in school, including the expected objectives of using relevant data in school, the complexity of technologies, and the sociological impact of technological, and this study backs up their claim. In Alnabhan & Aljaraideh's study, the effects of its ease of use, subjective standards, and overall conviction in the behaviour intention to utilise collaborative M-learning were documented (2014). "The significance of interest-based curriculum development for achieving educational goals," according to Surjanti et al. (2018).

2.5 ROLE OF TECHNOLOGY IN EDUCATION DURING PANDEMIC

Mobile technology has the potential to increase the freedom of people with disabilities. The generated library of accessible mobile applications could be a useful tool for delivering information on a larger range of apps to new mobile users. The creation of a collection of mobile useful codes and their application using the data gathered gave essential information to the first mobile users with vision impairment. The intrinsic accessibility choices of apps that were initially built for the final public are a positive step towards inclusion by app makers. Similarly, all new apps should be made accessible for people with disabilities in accordance with the standards set forth by the online Content Accessibility guidelines. (B. Christy and A. Pillai, 2021)

Millions of kids around the world have been affected by the COVID-19 pandemic. During the COVID-19 epidemic, the study looked into people's impressions of the technology education and modifications provided to deaf students in online distance learning. Researchers questioned a convenient sampling of Fifteen deaf students and associated teachers (n = 3) during June 2020 and examined the answers conceptually. During COVID-19, the findings indicated five primary themes connected to deaf students' experiences with online distance learning. The following are the themes: provided educational contents, technological, delivery mechanism, rating scales, and interpersonal relationships. (A. Alshawabkeh, M. L. Woolsey, and F. F. Kharbat (2021)

Echeng, Usoro &Majewski (2013) conducted a case study on the acceptance of Web2.0 as a social networking tool in learning in higher education in Nigeria. It was found that the utilization and acceptance of technology was not much popular, hence researchers conducted the study to fill the gap by working on perceptions, attitude and acceptance of Web2.0 technology in learning. A conceptual model, Technology Acceptance Model (TAM), consists of 9 variables and associated hypotheses was designed by reviewing the literature and previous studies. Perceived ease of use and perceived usefulness were taken as the fundamental variables of acceptance of technology. The variables were Prior Knowledge (PK), social factors (SF), Perceived usefulness (PU), Performance expectancy (PE), Motivation (MtU), Perceived Ease of use (PEoU), Facilitating conditions (FC), Actual use(AU), Behaviour intention (BI). To check the effectiveness of prepared model, a questionnaire was used. The data was collected from 317 students from 5 universities. Study revealed that the all variables except Motivation had an impact on intention to utilize Web2.0 in Nigeria, if used in Learning Management System. Perceived usefulness and prior knowledge were the two validated variables. It was clear from the analysis of the study that integrating Web2.0 tools would enhance students‟ learning. The correlation between Behavioral Intention (BI) and perceived Usefulness was 0.549, significantly high.

Yusof, Daniel, Low, and Aziz, "Educators' View of Mobile Edutainment for Special Needs Learners: The Malaysian Case" (2014). The study's purpose was to see if M-learning in Malaysian studies is still in its early stages. The study's key concerns were: are teachers willing to use mobile technology into their teaching tools, or do they perceive mobile technology as strictly personal communication devices? The questions were about special needs students' ability to use mobile devices efficiently in order to profit from m-learning. Data could previously only be retrieved via desktop computers, whether at work, at home, or in libraries. This means that enlightenment can be delivered to individuals who are unable to attend class. Because of rapid improvements in information and dispatch technology, educational institutions must continually reevaluate their approaches to physical and virtual 'classroom' training. Designers don't understand what mobile methods are used for, thus the phone has been present a few times with little regard for its inevitable for learning.

Diane Bell Jaudon Foiret (2020), conducted a study to find out the effectiveness on “A rapid review of the effect of assistive technology on the educational

performance of students with impaired hearing". School children with a hearing impairment to be intelligent to receive high-quality AT that will improve their informative success, more evidence-based research on the effectiveness of hearing AT needs to be piloted, especially as newer technologies emerge in this technical era. And highlighted certain implications for rehabilitation such as the use of appropriate hearing assistive technology (AT) is a key facilitator within the educational environment and has a positive impact on the educational outcomes for students.

Ravinder Singh (2020), investigated Video conferencing apps have become a daily necessity in recent years, not just for people who work but also for those who conduct online interviews. The significant rise in traffic to these apps has both advantages and disadvantages. Many popular video conferencing services now have many ups and downs in terms of security and privacy. As a result, this article will compare and contrast several video conferencing solutions, with a particular focus on Google Meet, Zoom, Microsoft Teams, Cisco WebEx Teams, and GoToMeetings.

2.6 DIGITAL INCLUSION

M. Shanmugapriya and A. Tamilarasi (2013) published "Developing a Mobile Courseware for ICT Students Using a Problem Based Learning Approach." To see if problem-based learning pedagogies can be used in a mobile learning environment for ICT students. The problem-based learning approach used in the mobile learning environment aids in the achievement of an integrated approach when designing the course, improves problem-solving skills, improves object-oriented programming principles while writing programmes to create objects and functions during coding, provides a unique approach for individuals to solve the same programme in different ways, and improves communication, group discussion, and collaborative learning skills. The instructor can use this method to provide an interactive educational experience for motivated students and to develop peer-to-peer learning models.

Woodward, Jillian (2017) studied "A Quasi-Experimental Study of the Effects of Teacher Training on Attitudes towards Inclusion Settings". Children with disabilities are taught alongside non-disabled children in a least restrictive environment (LRE). These children have not been identified as pupils with disabilities. Students with impairments are integrated into normal education settings to create the least restrictive environment possible. Inclusion settings for disabled children have become the norm in K-

12 public schools around the country. The goal of this quantitative, quasi-experimental study is to look into the effects of district Collaborative Teaching training for elementary teachers on ESE and changes in attitudes regarding inclusion settings in the elementary classroom. 32 teachers from a west central Florida science, technology, engineering, arts, and math (STEAM) elementary magnet school volunteered to participate in the pre-conference. Thus the study failed to reject the null hypothesis. Further recommendations for the study include training all school teachers in order to have a better support system and cohesive understanding of inclusion as well as focusing on the impact of the training on teachers attitudes.

Nisa, Zarif, Saleem and Aniqa (2014) studied "Exploring The Use Of ICT In Supporting Teaching And Learning Of Reading And Writing Skills For Children With Hearing Impairment In An Inclusive School". The purpose of research was to explore the use of Information and Communication Technology (ICT) in teaching and learning of reading and writing skills to/by children with hearing impairment in an inclusive school in Karachi, Pakistan. The study will focus that 'what are the ways in which ICT might be used for teaching and learning of reading and writing skills to/by children with hearing impairment in an inclusive school. Embedded in the qualitative paradigm, action research was used to explore research question. Classroom observations, semi-structured interviews, document analysis, reflective journal, video recording of classroom teaching, field notes were used as data collection. Four students (two with hearing impairment and two without hearing impairment , the class teacher and assistant teacher were selected as participants on the basis of a criteria. It was found that in order to address the learning needs of children with Special Education Needs (SEN), the use of multiple pedagogies and methodologies were helpful in keeping all the students engaged in the learning process. ICT allowed the teacher to use pre-existing interesting activities. However, the teacher's knowledge and skills of teaching children with hearing impairment posed a number of challenges. The findings have implication as to how ICT can be used in teaching/learning of reading and writing in an inclusive setting in Pakistan. Further exploration of this innovation in education in special schools has been recommended.

2.7 M-LEARNING IN TEACHING AND LEARNING TOWARDS INCLUSIVE EDUCATION

Sette-de-Souza, P. H. (2020) conducted a study on "Motivating learners in pandemic period through WhatsApp and Google Meet". The rate of transmission of

COVID-19, universities around the world temporarily ceased face-to-face classes. With no possibility of attending face-to-face activities, it was essential to think of ways to motivate students to learn to retain their mental health while maintaining their course content. Thus, online platforms were used to adapt the curriculum wherever possible to expand attendance rates and determine the quality of education. Discussions via WhatsApp and weekly meetings at Google Meet. Online discussions via WhatsApp were held with 20 students. According to the participants, it was a time of learning and respite, making the period of social distancing easier, as fellow students and academics obtained a real sense of community, and improved their learning environment.

Muhammad (2022) points out Study on Acceptance of Google Meet as a Learning Platform among Students in Higher Education Preliminary. For online classes, Google Meet is the primary teaching tool. However, few studies have looked at the platform's utilisation from the standpoint of students (Diaz-Nunez et al., 2021). Using the Unified Theory of Acceptance and Use of Technology (UTAUT) approach, this study aims to better understand students' perceptions of Google Meet as a learning platform in higher education. Purposive sampling was used to get 108 responses from students for this quantitative investigation. DATA tab software was used to perform descriptive statistical (mean, standard deviation) analysis of the collected data. The findings suggest that the most critical factor influencing their use of Google Meet was effort expectancy (EE). Students, on the other hand, viewed performance expectancy (PE) as the least affecting element. Finally, kids thought of Google Meet as a simple classroom .technology. However, during online learning, educators should not rely solely on it and should combine other extra apps to boost learning efficacy.

Chang & Benson (2022) studied on Jigsaw teaching method for collaboration on cloud platforms .This research looks on a jigsaw-based learning method for cloud collaboration. On a Masters course with 42 students from 17 countries, we implement and test the method. The jigsaw approach influenced individual learning in the group, the usefulness of Google Classroom and slides influenced group learning, and cultural differences influenced collaboration, according to regression analysis results. Collaboration influenced the classroom community as well. Teachers can use our findings to increase their use of the jigsaw method and cloud platforms to enhance collaborative learning. Furthermore, teachers can use cultural differences to their advantage and assist

pupils in strengthening social bonds. Furthermore, increased collaboration could benefit the classroom community.

2.8 FUTURE TRENDS IN INCLUSIVE EDUCATION

Russell, Scriney, & Smyth (2022) observed "Educator Attitudes towards the Inclusion of Students with Autism Spectrum Disorders in Mainstream Education". The success of inclusive education is influenced by educator attitudes. Because attitudes vary depending on the SEN cohort, this is the first systematic review to focus entirely on students with autistic spectrum disorders (ASD). Thirteen items were found after searching seven databases. The majority of educators expressed good opinions regarding ASD inclusion, however the measurements utilised varied greatly. The impact of training and experience on attitudes was mixed, but stronger self-efficacy was linked to positive attitudes where it was measured. In conclusion, educator attitudes regarding ASD inclusion are typically supportive, but we emphasise the need for more consistent attitudinal metrics. To get data on opinions regarding SEN groups other than those with ASD, more study is needed.

Tuncay & Kizilaslan (2022).investigated on the topic "Pre-service teachers' sentiments, attitudes and concerns about inclusive education in Turkey". This study looked into the feelings, attitudes, and worries of pre-service teachers in Turkey about inclusive practises. In this study, 406 students from various departments of a university school of education took part. Pre-service teachers' engagement with and views of inclusion were measured using the Sentiments, Attitudes, and Concerns about Inclusive Education Revised (SACIE-R) scale, which was used to analyse the rationales underlying their opinions about and support for the practise. According to the findings, there is a substantial variation between departments in terms of pre-service teachers' attitudes, concerns, and sentiments about inclusion, as well as respondents' levels of confidence in teaching children with disabilities. Inclusion was viewed more positively by pre-school education teacher applicants. Pre-service teachers need additional opportunities to connect with and teach kids with special needs during their school practicums, according to the research.

Michael Methlagl (2022) studied "Mapping inclusive education 1980 to 2019: A bibliometric analysis of thematic clusters and research directions". The value of inclusive education is well acknowledged. The current study examines 8398 papers

published between 1980 and 2019 that deal with inclusive education. The goal of this study is to learn more about scientific output, international collaboration, and the conceptual structure of this field of study. To create a complete knowledge map of inclusive education research, descriptive analyses, co-authorship collaboration analysis, and co-word analysis were used. The findings reveal a rapidly expanding corpus of research in inclusive education over the years, as well as extensive worldwide collaboration patterns. Six research clusters were discovered. Disability issues, teacher professionalization, teacher practises, attitudes toward inclusive education, social processes, support, curricular issues, student perspective, parent perspective, intercultural education, policy, and other topics have all been extensively researched. Inclusionary education from a queer viewpoint, bullying, stigmatisation, digital education, and emerging technologies in inclusive settings are all underrepresented in research and should be emphasised in future studies.

Geraldine, Scanlon (2022) investigated "Attitudes of teachers in Bulgarian kindergartens towards inclusive education". The goal of this study was to examine the readiness of Bulgarian kindergarten instructors in light of upcoming inclusion-driven educational reforms. The views of 922 kindergarten teachers regarding inclusion were studied across three domains (cognitive, affective, and behavioural), as well as their worries and self-efficacy. Despite not feeling particularly enthusiastic about inclusion, instructors indicated being willing to change their behaviour to support it in their classroom. Across all three categories, inclusion-related training, which is crucial for teachers to meet the demands of reforms, was a strong, positive predictor of teachers' attitudes.

2.9 CONCLUSION

The previous study suggests that the hearing-impaired student's lacks in the knowledge and awareness about the alphabets and its sounds. And they also lack in writing the learnt content independently.

CHAPTER - III

METHODOLOGY

3.0.0 INTRODUCTION

Every new innovative thinking starts by questioning and searing for the purpose. India with its massive higher education group is really diverse in nature which is operated at diverse degrees. There raises lots of confusion and contradictions even though there exists transparency. The higher education mission is always to consider the sustainable improvement and overall development of the society through edification by providing advanced practiced graduates to satisfy the human activity, inspiring, and broadcasting knowledge throughout the research. Research can be well-defined as thoughtful reflection of education concerning tricky data using disciplined methods. It is a developed procedure of the discipline. It is the superlative in nature turning the concern into a question, with the strong-minded research to response to the question. Implementing evidence based methodology lights the betterment to adopt every approaches systematically.

Methodology enhances research with appropriate pathway to be followed by others. It seeks the betterment towards edification. Methods are unique in nature by providing outcomes by means of diverse steps included in research methodology.

This section transacts with methodology of conducting the research work on **"M-Learning for Inclusion-A Status Study among the Pre Service Teachers".**

Under the following headings, the methodology of the current investigation is discussed:

3.1 Study's Design

3.2 The Study's Procedure

3.3 The Tool's Description

3.4 Administration of the Tool

3.5 According to the Jury's Opinion

3.6 A Preliminary Investigation/Pilot Study

3.7 The Study's Description

3.8 The Study's Sample

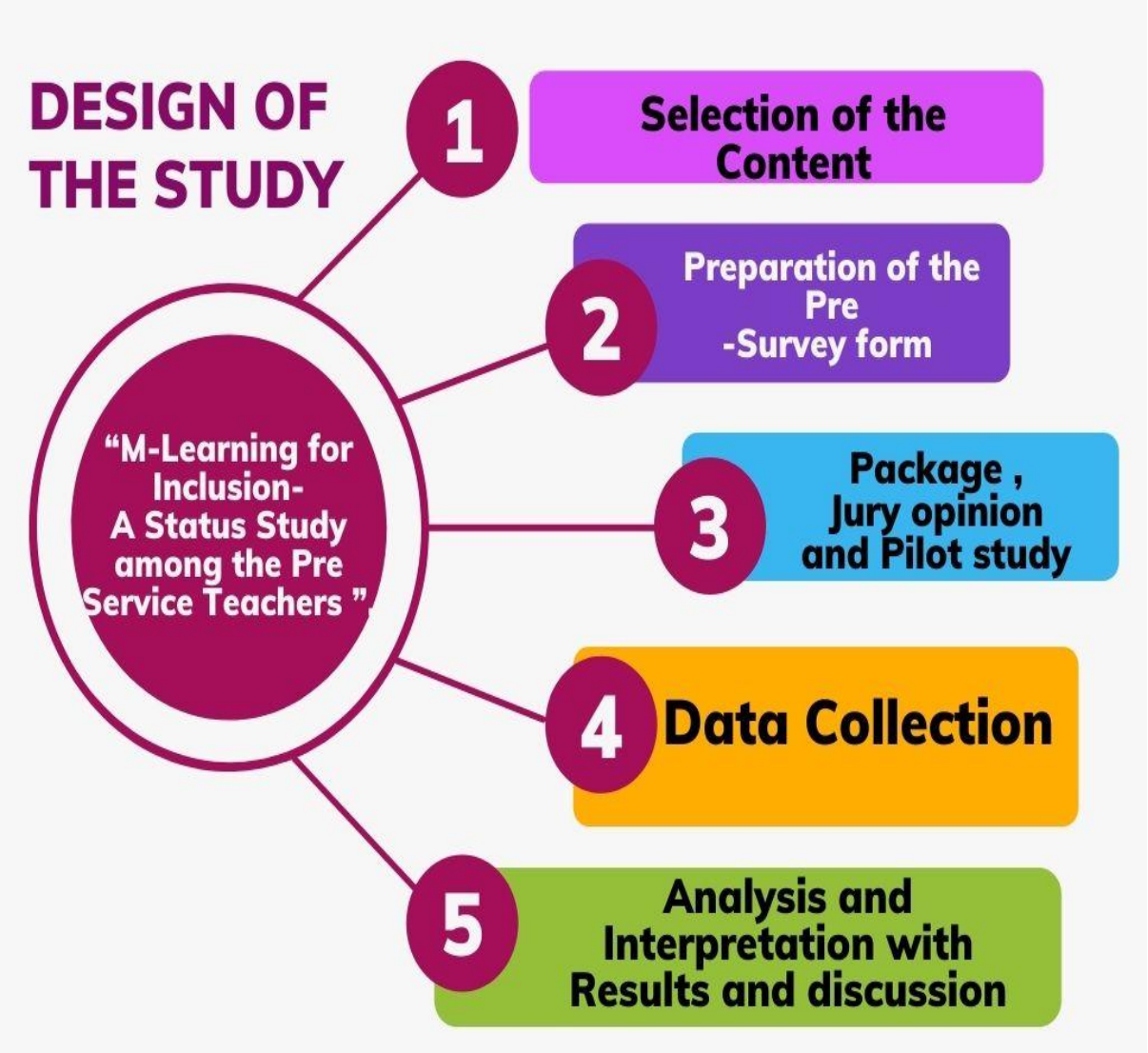
3.9 The Study's Variables

3.10 Procedure for Calculating Scores

3.11 Data Analysis Procedure

3.12 Conclusion

3.1 STUDY'S DESIGN



DESIGN OF THE STUDY

FIGURE-2

3.2 THE STUDY'S PROCEDURE

The researcher aimed at locating/identifying the mobile learning tools that are widely used and the status of usage among the teacher trainees. The proposed study used a survey ("the gathering of data from a group of people through their responses to questions") methodology with the random sample strategy to select pre-service teacher trainees from various locations in Tamil Nadu. The research has been carried out in four stages.

The steps followed in the conduct of research are given below.

Gate –I

Exploration of Mobile Learning Tools for Teaching and Learning

The inclusion is the need of the future and mobile learning is a fostering factor. This pandemic has forced the educations to go online in managing their teaching and learning needs. The literature review, experiences shared with teachers and special educators has ended up in developing a survey among teacher fraternity. As the researcher felt that this will go a long run if we catch the youngsters that too who are planning to become teachers. Hence a survey was developed (***Annexure –II***) and given to pre service teacher training. It aimed to locate the widely used mobile learning adapted for inclusiveness in teaching and learning.

Gate –II

Primary Survey

Pre-service teachers were given a quick poll on the most often used M-Learning software. Is there any real rationale for them to use mobile learning to promote inclusion, as we investigated?

Gate –III

Package

The results of the initial survey explained the need for strengthening the various aspects of mobile learning applications .The researcher limited herself to the applications that are spelt as commonly used in the survey (Google Meet, Google Slides, Google Classroom, and Google jam board, WhatsApp, Quizizz and Screen Recorder).

A package was prepared where the samples were asked to express their level of confidence in the usage of the mobile learning applications for inclusive teaching and learning.

When the respondent click a low level of confidence (from 4-1 out of 5 ratings) were redirected to remedial teaching and learning and tested using a posttest.

Gate –IV

Pre Test, Remedial Intervention and Post Test

A package was developed. A pretest was given to find out the level of confidence of the sample in using the widely used mobile learning applications. If

individuals show a lack of confidence, (4-1 out of 5 levels) intervention was initiated and the efficacy of the intervention was tested through posttest.

The package was created in the form of a video recording, pamphlet, concept map, and mind map, all of which provide a short recap of how to use the applications for effective inclusive pedagogy.

3.3 THE TOOL'S DESCRIPTION

- ***Personally Identifiable information Bank***

  To gather general information about the participants, such as their gender, type of programme, location. A personally identifiable information bank was created and managed. Before administering the pre-test, the investigator obtained some personal details from the samples that have been chosen for the study. ***(Annexure I)***

- ***Construction of the tool***

  The package was designed to assess pre-service teacher trainees' confidence levels in using M-Learning tools for teaching and learning. A total of 17 questions were chosen to cover the eight components of the M-learning application. To determine the performance of pre-service teacher trainees, the same tool was used for pre-test and post-test. ***(Annexure II)*** and ***(Annexure III a &b)***

3.4 ADMINISTRATION OF THE TOOL

3.4.1 PRE –TEST

A pretest was conducted with the proposed questionnaire to determine pre-service teacher trainees' confidence levels in using M-Learning technologies for teaching and learning. The test was conducted online by the investigator, and the results of the samples were recorded. The test took 20 minutes to complete.

3.4.2 REMEDIAL INTERVENTION:

The intervention aimed at introducing/sensitizing various aspects of the selected mobile learning applications for inclusive pedagogy. The remedial intervention was presented towards the samples on an electronic basis .Self learning material was prepared through video tutorial, animated video, concept map, Mindmap, and pamphlets as. Three weeks were allotted for the M-learning remedial intervention, and allowed pre-service teacher trainees to self-learn and remediate themselves as much as possible using Google forms.

TABLE 1

PACKAGE-COMPONENTS OF M-LEARNING APPLICATIONS

S.NO	COMPONENT	NO OF QUESTIONS	NO OF SUB QUESTIONS	METHOD USED FOR THE INTERVENTION
1.	Google Meet	01	05	VIDEO
2.	Google Slides	01	05	CONCEPT MAP
3.	Google Classroom	01	05	CONCEPT MAP
4.	Google Forms	01	05	CONCEPT MAP
5.	Jam board	01	05	VIDEO
6.	WhatsApp	01	05	PAMPHLET
7.	Quizizz	01	05	CONCEPT MAP
8.	Screen Recorder	01	05	CONCEPT MAP

To boost the level of confidence the intervention has been planned on various platform different forms on digital content.

3.4.3 POSTTEST

A posttest was conducted on the samples using the same questionnaire (pretest) used to determine the impact of remedial intervention, and the responses were recorded in order to determine the effectiveness. The posttest was carried out using an electronic survey, and the data analyzed.

3.5 ACCORDING TO THE JURY'S OPINION

The M-learning Remedial Intervention were sent to six professionals in the field of special education and general education by the investigator. The suggestions was carried out in accordance with their thoughts, opinions, and suggestions**.**

3.6 A PRELIMINARY INVESTIGATION/ PILOT STUDY

It's a remake of the original study. A pilot research was conducted with participants. They were requested to participate in a survey to assess the use of mobile learning apps in teaching and learning. The tools were deemed dependable enough to be implemented on the whole collection of samples, which included 10 B.Ed students, 5 M.Ed scholars, and 2 Ph.D scholars. Before the survey was implemented, comments were offered and certain items were subsequently revised.

B.Ed Students	**5-** Avinashilingam Institute for Home Science and Higher Education for Women. **3-** Ramakrishna Mission Vivekananda Educational and Research Institute-Faculty of Disability Management and Special Education (FDMSE). **2-** Sri Sundareswari College of Education, Malli, Srivilliputhur
M.Ed Scholars	**3-** Avinashilingam Institute for Home Science and Higher Education for Women **2-** Sri Sundareswari College of Education, Malli, Srivilliputhur
Ph.D Scholars	**2-** Avinashilingam Institute for Home Science and Higher Education for Women.

3.7 THE STUDY'S DESCRIPTION

This research is conducted exclusively online. All the teachers are expected to encourage inclusion. It is imperative that we catch them young before they fail. Hence the pre service teacher trainees were selected for the study to know the level of mobile learning usage/status by them. Sixteen institutions in and around Coimbatore City participated in this study.

They are:

- Bharathiar University
- Composite Regional Centre-Kozhikode
- Government College of Education for Women, Coimbatore.
- Holy Cross College of Education
- Mother Teresa Women's University, Chennai
- NKT National College of Education for Women
- P.S.R College of Education, Sevalpatti.
- Ramakrishna Mission Vivekananda Educational and Research Institute-Faculty of Disability Management and Special Education (FDMSE)
- Sri Avinashilingam Institute for Home Science and Higher Education for Women
- Sri Padmavati Mahila Vishvavidhyalayam, Tirupathi
- Sri Sundareswari College of Education, Malli, Srivilliputhur
- Sri Venkiteshwara University
- T.D College, Jaunpur

- Tamilnadu Open University
- Tamilnadu Teacher Education University
- Vidya Vikas College of Education.

3.8 THE STUDY'S SAMPLE

The selection of a sample is a fundamental aspect of any research venture. The sample was drawn using a basic random sampling procedure. The study's sample comprised 403 pre-service teacher trainees, comprising of males and females, varying ages from 20 to 55 years old.

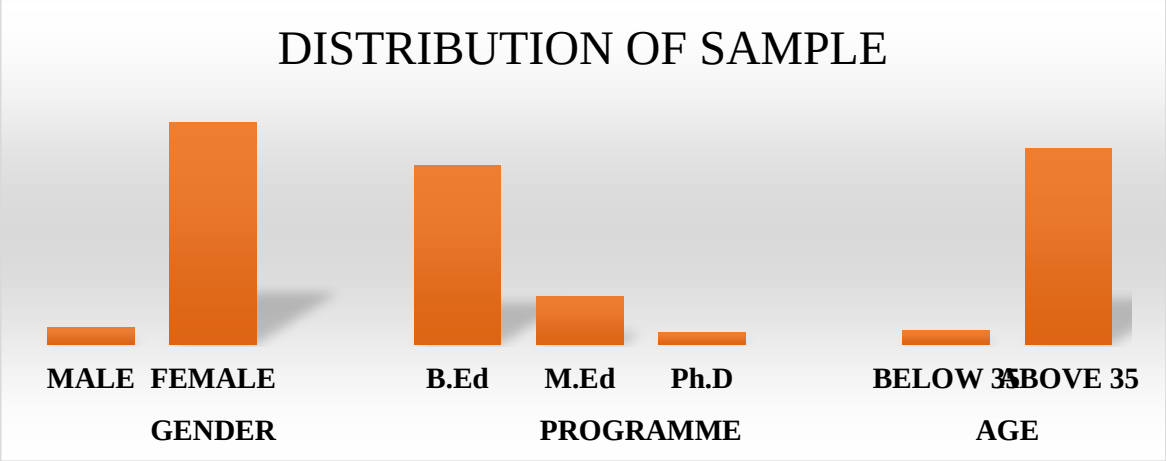
Random Sampling:

The sample strategy whereby each samples seems to have an equal chance of being chosen is known as random sampling. A random sample is supposed to be an accurate representative of the entire population.

TABLE 2

AGE, GENDER AND PROGRAMME WISE DISTRIBUTION OF THE SAMPLE

S .No	Age	Gender		Total	Programme			Total
		Male	Female		B.Ed	M.Ed.	Ph.D	
1.	20-25	6	224	230	205	25	0	230
2.	26-30	11	49	60	27	31	2	60
3.	31-35	6	58	64	38	17	9	64
4.	36-40	4	21	25	17	4	4	25
5.	41-45	0	12	12	8	1	3	12
6.	46-50	1	8	9	5	2	2	9
7.	51-55	0	3	3	2	1	0	3
Total		28	375	**403**	302	81	20	**403**
Percentage (%)		7	93	**100**	75	20	5	**100**



AGE, GENDER AND PROGRAMME WISE DISTRIBUTION OF THE SAMPLE

FIGURE 3

The above table gives a glimpse of the sample. There were 403 sample selected and out of which 28 were male and 375 were female; 302 were pursuing B.Ed, 81, M.Ed. and 20 Ph.D.

TABLE 3

DISTRIBUTION OF SAMPLE BASED ON THE TYPE OF DISABILITY

DISABILITY	TYPE OF DISABILITY			PERCENTAGE (%)
	H.I	V.I	P.H	
YES	1	2	5	2
NO	395			98
TOTAL	403			100

- **H.I-Hearing Impairment**
- **V.I-Visual Impairment**
- **P.H-Physically Handicapped**
- **N.D-Non Disabled**

Most of the sample did not have any bench mark disabilities (98%) 1, H.I, 2 V.I and 5 P.H totally 2% of the sample had bench mark disabilities.

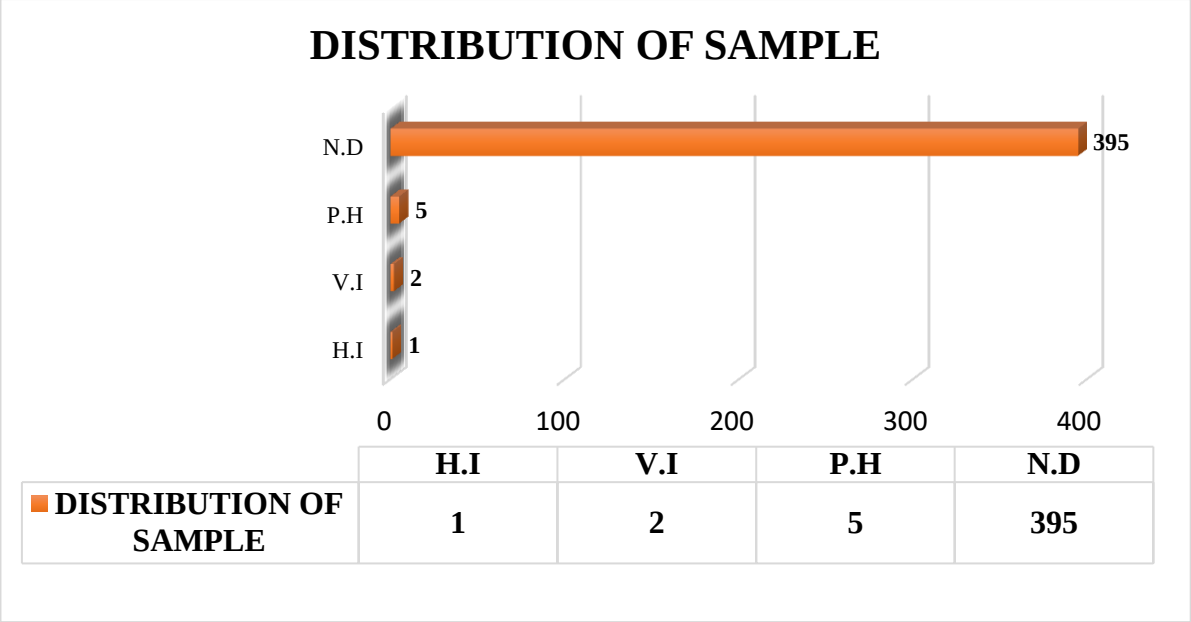


Figure 4: Distribution of Sample Based on the Type of Disability

TABLE 4

DISTRIBUTION OF THE SAMPLE BASED ON THE LOCALITY

LOCALITY	NUMBER OF STUDENTS	PERCENTAGE (%)
URBAN	198	49.1
RURAL	205	50.9

The sample were drawn from rural and urban with almost equal weightage.

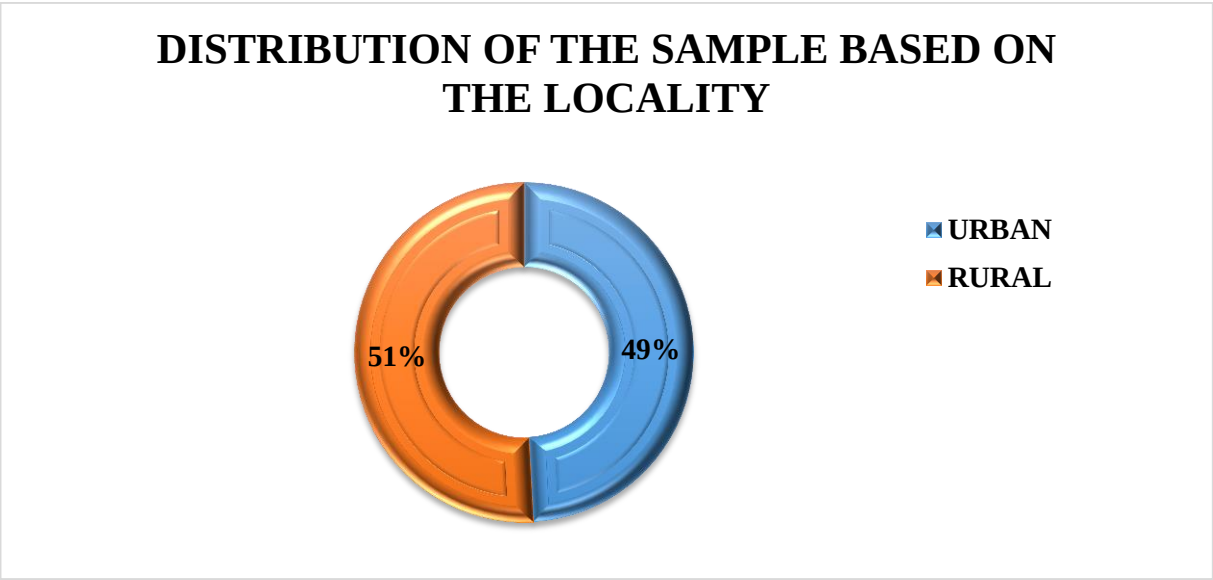


Figure 5: Distribution Of The Sample Based On The Locality

3.9 THE STUDY'S VARIABLES

A good research largely relies on the proper selection of variables. Identifying the appropriate variables promotes the study's quality and enables to make inferences from the sample. There seem to be two different kinds of variables in this study: dependent and independent variables.

The study includes eight dependent variables such as Google Meet, Google Slides, Google Classroom, Google Forms, and Jam board, WhatsApp, Quizizz and Screen Recorder.

The Independent variables included in the study were Gender, Age, Locality and Programme.

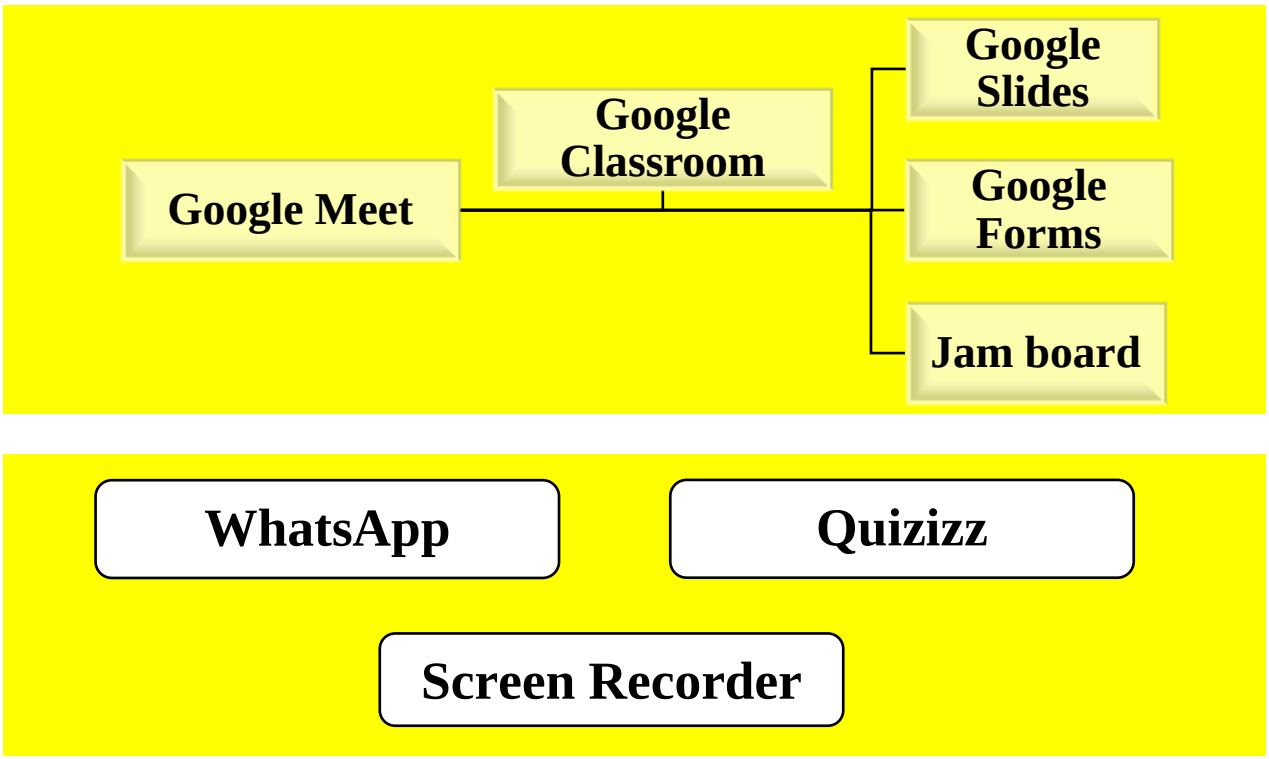


Figure 6: Dependent Variable Of The Study

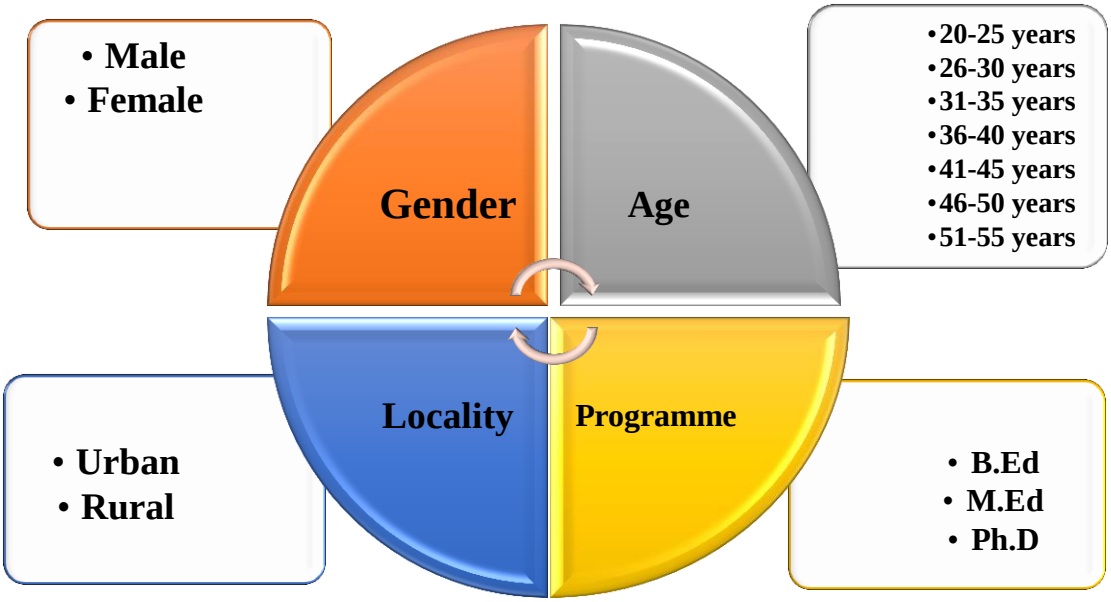


Figure 7: Independent Variable

3.10 PROCEDURE FOR CALCULATING SCORES

Google Meet, Google Classroom, Google Slides, Google Forms, Jam board, WhatsApp, Quizizz, and Screen Recorder are the eight components of the tool. Extremely Confident, Very Confident, Moderately Confident, Slightly Confident, and Not Confident all were scored using a five-point Likert scale**.**

TABLE 5

SCORING PROCEDURE

RESPONSE	SCORE
Extremely Confident	**5**
Very Confident	**4**
Moderately Confident	**3**
Slightly Confident	**2**
Not Confident	**1**

3.11 DATA ANALYSIS PROCEDURE

The information was gathered, processed, tabulated, and the results were interpreted in the table. The collected data were analyzed using both qualitative and

quantitative analysis test techniques. In the following chapter IV, the study's findings are explored and interpreted in depth. The significant difference between both the pre- and post - tests were compared using the‘t’ test.

According to Strain (2000), data collecting requires methodical integration of information in order to reach the intended outcome and scientific interpretation. The following test was used to consolidate, tabulate, and statistically evaluate the data:

1. Percentage Analysis
2. Mean
3. Standard Deviation
4. Test of Significance ‘t’ test
5. ANOVA

3.12 CONCLUSION

This chapter has a detailed description of the process, tools, sampling strategy, variables chosen, and tool administration. It contains valuable information for the researcher to conduct further research and follow the steps to achieve the study's goal.

CHAPTER - IV

ANALYSIS AND INTERPRETATION

4.0.0 INTRODUCTION

4.1.0 THE PRIMARY SURVEY

4.1.1 THE USAGE OF MOBILE LEARNING

4.1.2 PURPOSE OF USING MOBILE LEARNING

4.1.3 THE VIDEO CONFERENCING APPLICATIONS

4.1.4 THE MOBILE LEARNING TOOLS

4.1.5 MOBILE LEARNING TOOLS FOR ASSESSMENT

4.2.0 GOOGLE SERVICES USAGE STATUS-PRE TEST.

4.2.1 WHATSAPP, QUIZIZZ AND SCREEN RECORDER – USAGE STATUS-PRETEST

4.2.2 GOOGLE SERVICES USAGE STATUS- POST TEST.

4.2.3 WHATSAPP, QUIZIZZ AND SCREEN RECORDER –USAGE STATUS POSTTEST.

4.2.4 COMPARSION OF PRE TEST AND POST TEST - GOOGLE SERVICES USAGE STATUS - TEACHING AND LEARNING

4.3.1 COMPARISON OF PRE-TEST AND POST-TEST - GOOGLE MEET

4.3.2 COMPARISON OF PRE-TEST AND POST-TEST - GOOGLE SLIDES

4.3.3 COMPARISON OF PRE-TEST AND POST-TEST - GOOGLE CLASSROOM

4.3.4 COMPARISON OF PRE-TEST AND POST-TEST - GOOGLE FORMS

4.3.5 COMPARISON OF PRE-TEST AND POST-TEST - GOOGLE JAMBOARD

4.3.6 COMPARISON OF PRE-TEST AND POST-TEST – WHATSAPP

4.3.7 COMPARISON OF PRE-TEST AND POST-TEST - QUIZIZZ

4.3.8 COMPARISON OF PRE-TEST AND POST-TEST – SCREEN RECORDER

4.4.1 COMPARISON OF PRE- TEST AND POST TEST SCORES OF GOOGLE SERVICES WITH RESPECT TO GENDER

4.4.2 COMPARISON OF PRE- TEST AND POST TEST SCORES OF-WHATSAPP, QUIZIZZ AND SCREEN RECORDER WITH RESPECT TO GENDER.

4.4.3 COMPARISON OF PRE- TEST AND POST TEST SCORES OF-GOOGLE SERVICES WITH RESPECT TO AGE.

4.4.4 COMPARISON OF PRE- TEST AND POST TEST SCORES OF WHATSAPP, QUIZIZZ AND SCREEN RECORDER WITH RESPECT TO AGE.

4.4.5 COMPARISON OF PRE- TEST AND POST TEST SCORES OF-GOOGLE SERVICES WITH RESPECT TO LOCALITY

4.4.6 COMPARISON OF PRE- TEST AND POST TEST SCORES OF WHATSAPP, QUIZIZZ AND SCREEN RECORDER WITH RESPECT TO LOCALITY

4.4.7 COMPARISON OF PRE- TEST AND POST TEST SCORES OF-M-LEARNING APPLICATIONS WITH RESPECT TO PROGRAMME

4.0.0 INTRODUCTION

Data analysis is the process of using statistical or logical approaches to explain, illustrate, describe, summaries, and quantify data in a scientific and methodical way. Several analytic or systematic methodologies, according to Shamoo and Resnik (2003), give a way to draw inductive interpretation. Data analysis, according to Marshall and Rossman (1999), is the process of determining the order, meaning, and structure of acquired data. It's been described as chaotic, ambitious, and time-consuming, but it's also a creative and enchanting process. This chapter focuses on statistical investigation of the data and explanation of the results, which was covered in the preceding chapter on methodology.

Data analysis is the process of giving meaning to gathered data and determining a conclusion by revealing the significance and hypothesis of the findings. It entails determining the values of unknown population criterion and testing hypotheses in order to make conclusions. Data analysis is the most important aspect of any study. Data analysis summarizes the information gathered. It entails the use of analytical and logical reasoning to data in order to identify patterns, correlations, and trends.

The results of a descriptive study on M-Learning for Inclusion-A Status Study among Pre-Service Teachers are presented in this chapter. The study's major goal is to determine the level of confidence pre-service teachers have in using m-learning applications across eight categories. Quantitative techniques were used to handle and analyze data relevant to the identification of Levels of Confidence of selected samples.

Quantitative and qualitative data analysis, according to Kreuger and Neuman (2006), provides a useful link and similarity between quantitative and qualitative data analysis methodologies. It reveals four similarities between quantitative and qualitative data analysis, including:

- Suggestion – making assumptions to draw a conclusion based on proof;
- A public process – revealing the study of design in any way;
- A central process of comparison – identifying patterns or aspects that are similar or different; and striving to avoid errors, false conclusions, and misleading inferences.

The major goals of the result and discussion section are to allow you to analyze data from questionnaires.

- Enables you to review data from interviews.
- You can use it to analyze data from observational studies.
- Determine some common problems with data analysis, interpretation, and presentation.
- Enable you to analyze and communicate your findings in a relevant and appropriate manner.

4.1.0 THE PRIMARY SURVEY

A Survey conducted at the primary stage to check the widely used mobile learning applications that has been tabulated and analyzed here under:

4.1.1 THE USAGE OF MOBILE LEARNING

TABLE 6

THE USAGE OF MOBILE LEARNING

THE USAGE OF MOBILE LEARNING	**RESPONSE**	
Are you using M-Learning/Usage of M-Learning?	**Yes**	**%**
	132	95
	No	**%**
	7	5

A survey intended to find the usage of mobile learning applications for inclusion has been conducted for pre service teachers. Most of the sample (132 out of 139) responded ‘yes’ to this question. This helps us to understand that mobile learning for inclusion is a known component among the sample.

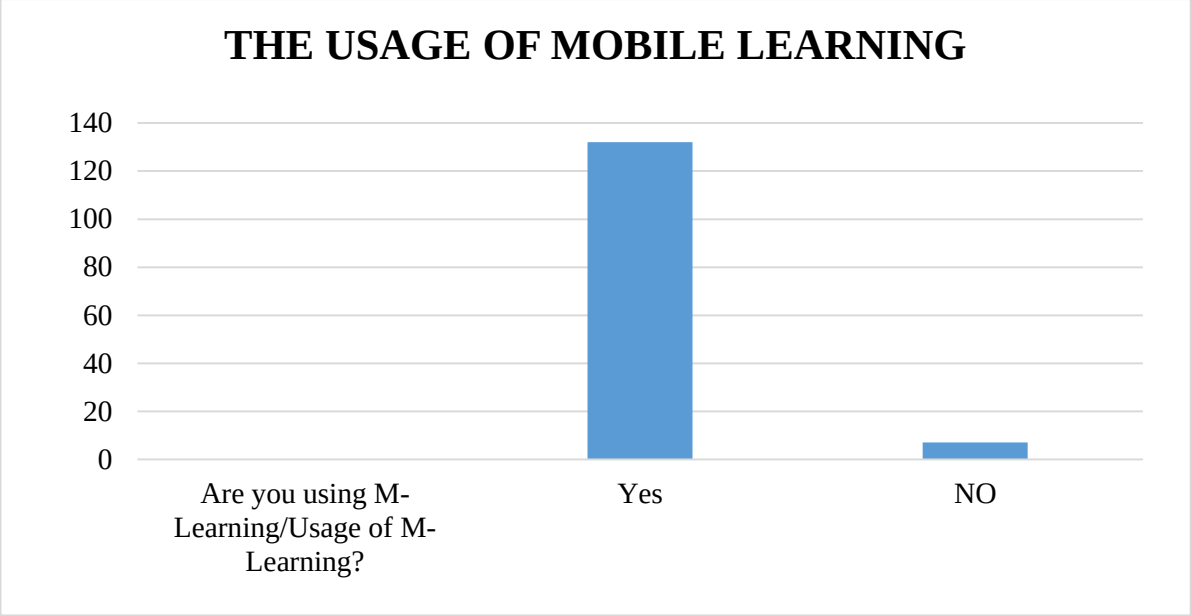


FIGURE-8

THE USAGE OF MOBILE LEARNING

Table 6 and figure 8 gives a sight on the usage of mobile learning for teaching and learning

4.1.2 PURPOSE OF USING MOBILE LEARNING

TABLE 7

PURPOSE OF USING MOBILE LEARNING

PURPOSE OF USING MOBILE LEARNING	RESPONSE	%
To learn the curriculum	**90**	**64.7**
To update current affairs	**64**	**46**
To learn beyond the curriculum	**60**	**43.2**
To teach Students/Children	**50**	**36**
To clarify /equip /understand a particular issue	**41**	**29.5**
Others	**3**	**2.16**

The purpose of mobile learning for the sample has been to learn their curriculum (65%) and to update current affairs (46%), to learn beyond the curriculum (43.2%) to update the current affairs has been the second priority in the usage. Almost 36

percent of the sample use mobile learning to teach students'/children. Almost (30%) of the sample use mobile learning for clarifications/equip/understand a particular issue. And mobile learning was rarely used for other purposes by (2%) percent of the sample.

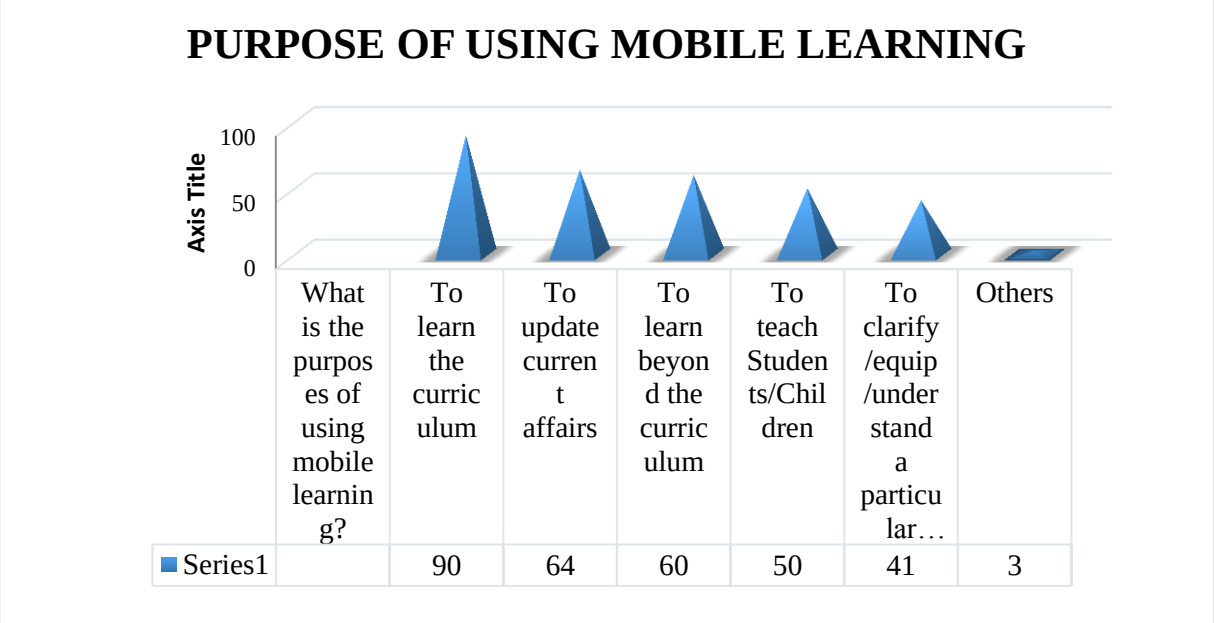


FIGURE 9

PURPOSE OF USING MOBILE LEANING

Table 7 and figure 9 gives a sight on the purpose of using mobile learning for teaching and learning.

4.1.3 THE VIDEO CONFERENCING APPLICATIONS

TABLE 8

THE VIDEO CONFERENCING APPLICATIONS USED

THE VIDEO CONFERENCING APPLICATIONS USED	RESPONSE	%
Google Meet	**134**	**96.4**
Zoom	**55**	**39.6**
Skype	**7**	**5**
Microsoft Teams	**18**	**12.9**
WebEx	**0**	**0**
WhatsApp	**97**	**69.8**
YouTube	**87**	**62.6**

The video conferencing applications that was the most common among the sample (96.4%) for video conferencing was ‘Google Meet’. The WhatsApp (70%) takes the 2nd position and YouTube is just behind WhatsApp as it has been rated as useful among (63%) of the sample. Zoom takes 4th position as it has been rated useful by (55%) of the sample. Teams and Skype are new learnt apps as it’s rated useful by (13% and 5%) of this sample respectively.

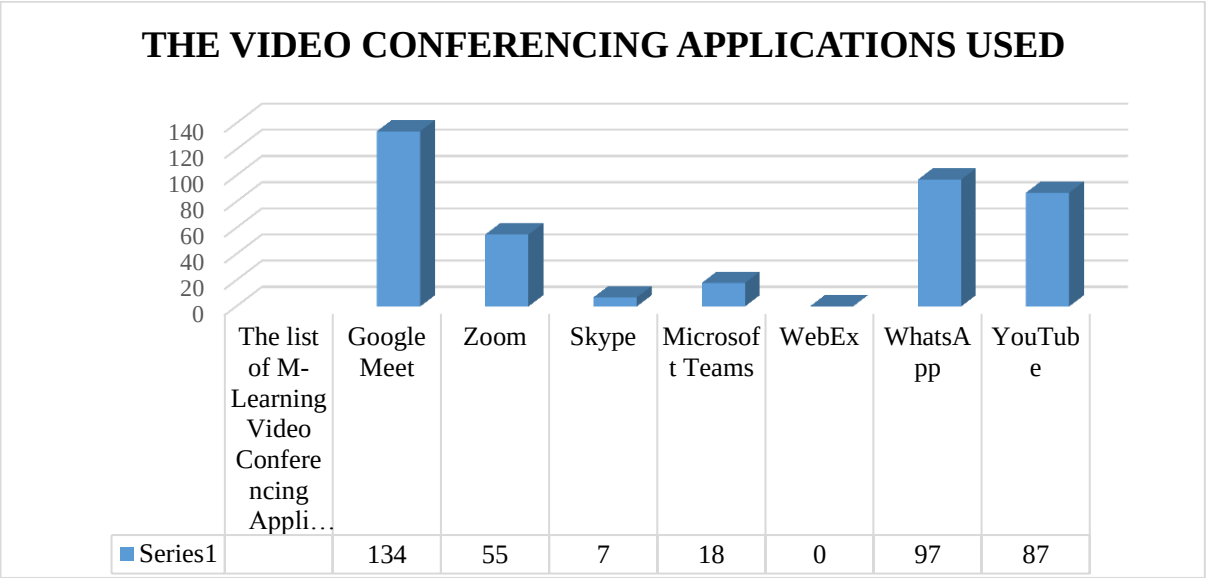


FIGURE 10

THE VIDEO CONFERENCING APPLICATIONS USED

Table 8 and figure 10 gives a sight on the video conferencing applications used for teaching and learning.

4.1.4 THE MOBILE LEARNING TOOLS

TABLE 9

THE MOBILE LEARNING TOOLS

THE MOBILE LEARNING TOOLS	RESPONSE	%
Google Classroom	126	90.6
WhatsApp	111	79.9
Google Docs	104	74.8
Google Slides	93	66.9
Swayam	73	52.5
Screen Recorder	68	48.9
Telegram	56	40.3
Coursera	45	32.4
Canva	28	20.1
Kinemaster	28	20.1
Jam board	16	11.5
Prezi	13	9.4
Diksha	9	6.5
Others	3	2.16
Padlet	1	0.7

The sample were asked about the mobile learning tools use. Majority (90.6%) of the sample use Google Classroom &WhatsApp (80%).Google Docs & Slides are common among (75%&67%) of the sample, Swayam courses are spelt as useful mobile learning tool by (53%),Screen Recorder ,Telegram &Coursera catches the next positions by (50%),(40%) &(32%) as spelt by the sample Canva,Kinemasters and following applications.

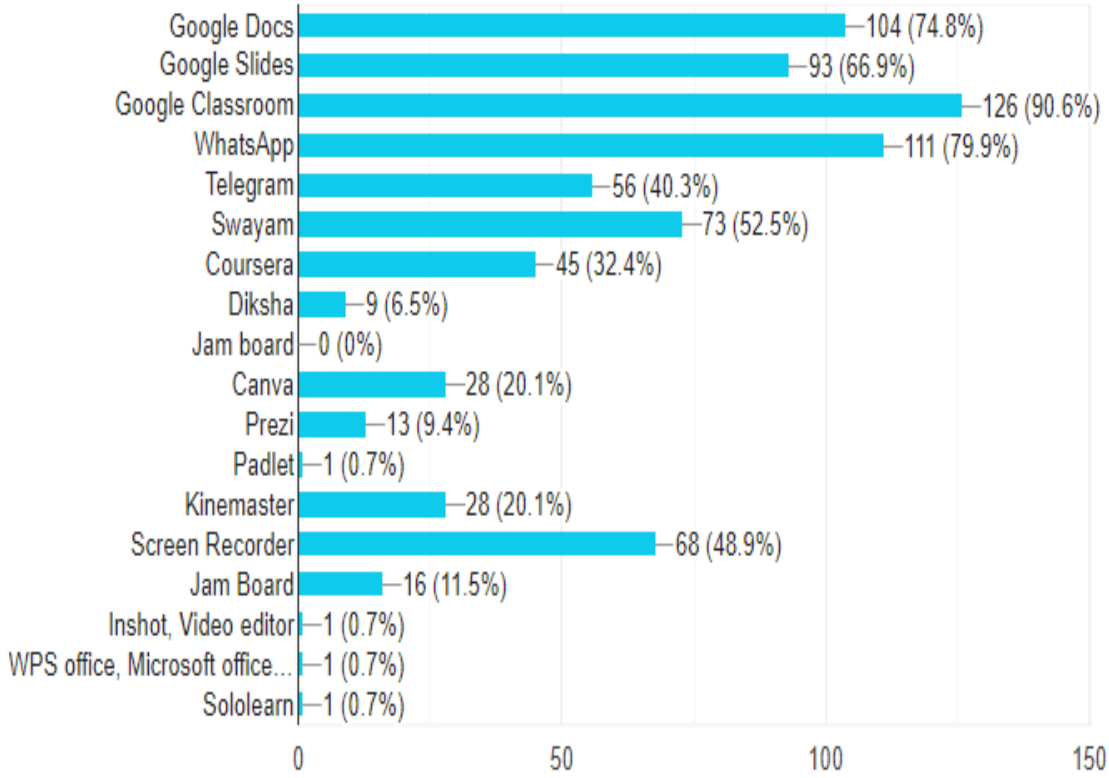


FIGURE 11

THE MOBILE LEARNING TOOLS

Table 9 and figure 11 gives a sight on the mobile learning tools used for teaching and learning.

4.1.5 MOBILE LEARNING TOOLS FOR ASSESSMENT

TABLE 10

MOBILE LEARNING TOOLS FOR ASSESSMENT

MOBILE LEARNING TOOLS FOR ASSESSMENT	RESPONSE	%
Google Forms	136	97.8
Mentimeter	17	12.2
Kahoot	7	5
Edpuzzle	5	3.6
Nearpod	3	2.2

Google Forms is the widely used application for educational purpose as stipulated by the majority of the sample (98%), mentimeter is used around 12%of the sample and Kahoot, Edpuzzle and Nearpod are rarely used as stated by 5%, 3.6% and 2.2% of the sample respectively. Kahoot, Edpuzzle and Nearpod are rarely used as only some of the sample have pronounced it as useful for educational assessment. This envisages that more such tools are to be sensitized for better usage of mobile learning for inclusion.

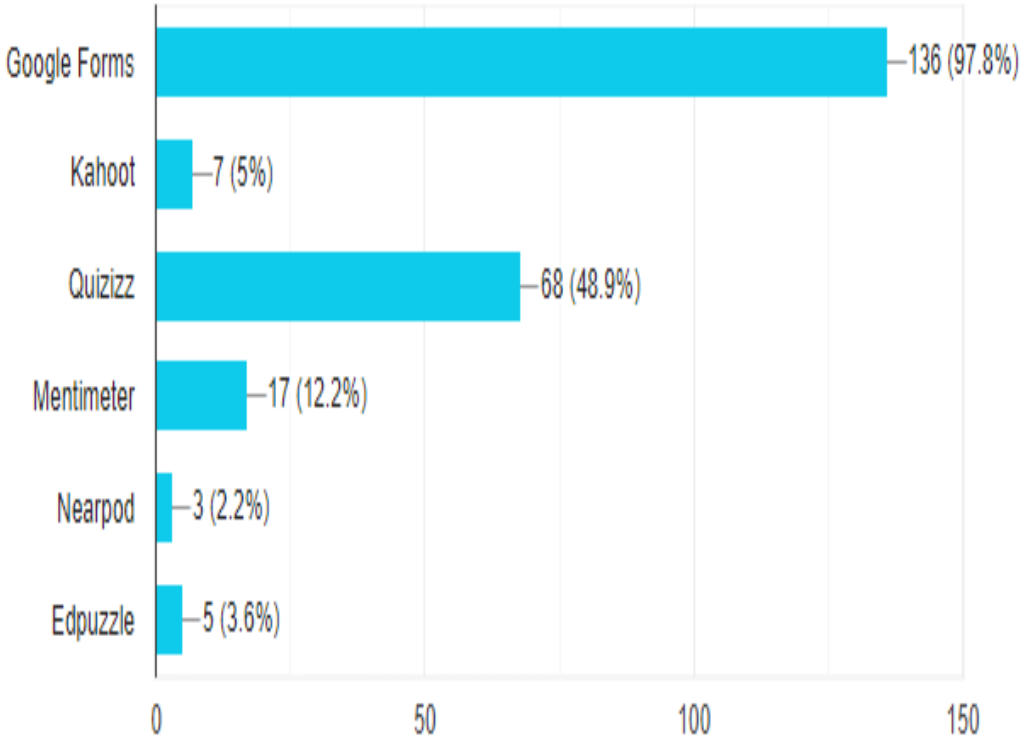


FIGURE 12

THE MOBILE LEARNING APPLICATIONS FOR ASSESSMENT

Table 10 and figure 12 gives a sight on the mobile learning applications used for assessment in teaching and learning.

4.2.0 GOOGLE SERVICES USAGE STATUS-PRE TEST.

TABLE 11

Applications	4 (N=403)	%	3 (N=403)	%	2 (N=403)	%	1 (N=403)	%
Google Meet	98	24	285	71	-	-	20	5
Google Slides	67	17	291	72	26	6.5	19	4.5
Google Classroom	82	20	273	68	17	4	31	8
Google Forms	97	24	255	63	26	7	25	6
Jam board	51	13	228	57	50	12	74	18

The level of confidence in using the Google services for inclusive pedagogy has been tabulated here. No one was totally confident as none has ticked 5 on '1-5' scale of confidence level. Google meet and Google Forms has been the most familiar apps with greater level of confidence (98%&97%).Google Classroom ,Google Slides &Jam board were the other applications spelt as good with an user level of confident at 4 out of 5 scale by 82%,67% &51% respectively.

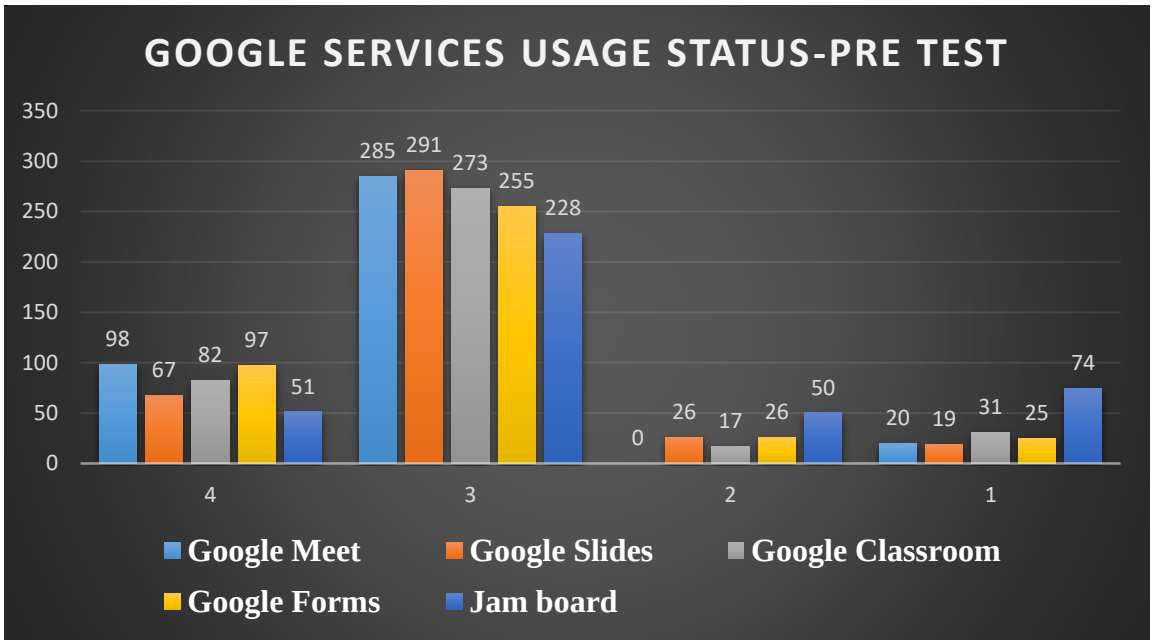


FIGURE-13

GOOGLE SERVICES USAGE STATUS-PRE TEST

Table 11 and **figure 13** gives a sight on pretest level of confidence in using the Google services for teaching and learning.

4.2.1 WHATSAPP, QUIZIZZ AND SCREEN RECORDER –USAGE STATUS-PRE TEST

TABLE 12

Applications	4 (N=403)	%	3 (N=403)	%	2 (N=403)	%	1 (N=403)	%
WhatsApp	130	32	239	59	14	4	20	5
Quizizz	79	20	214	53	77	19	33	8
Screen Recorder	66	16	224	56	85	21	28	7

The pre service teachers were queried about the mobile learning applications that they are confident in using. Most of the sample were confident with WhatsApp, Quizizz &Screen Recorder has been the least ones as expressed by 20% & 16% of the sample respectively with greater level of confidence. It's also imperative to note that no one has selected '5' level of confidence here with the pre-test.

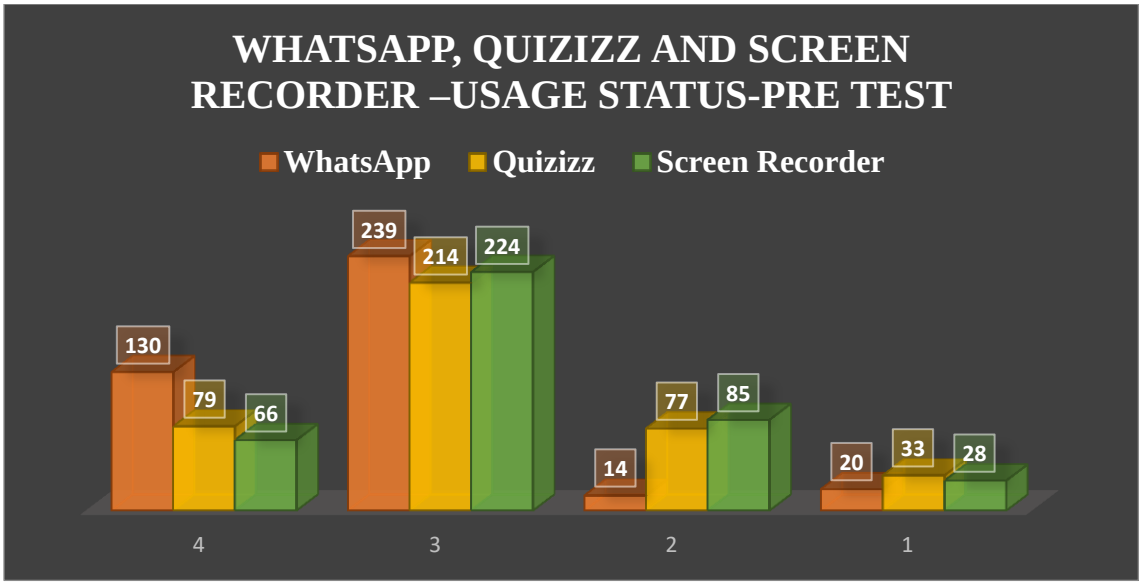


FIGURE-14

WHATSAPP, QUIZIZZ AND SCREEN RECORDER USAGE STATUS-PRE TEST

Table 12 and **figure 14** gives a sight on pretest in using the WhatsApp, Quizizz and screen recorder for teaching and learning

4.2.2 GOOGLE SERVICES USAGE STATUS- POST TEST.

TABLE 13

Applications	5 (N=403)	%	4 (N=403)	%	3 (N=403)	%	2 (N=403)	%	1 (N=403)	%
Google Classroom	137	34	165	41	85	21	13	3	3	1
Google Forms	128	32	150	37	103	26	17	4	5	1
Google Meet	118	29	179	44	94	23	10	3	5	1
Google Slides	100	24	185	46	103	26	13	3	2	1
Jam board	87	21	147	36	131	33	31	8	7	2

This graph shows the amount of confidence in using Google services for inclusive pedagogy. The sample showed some improvement in the post test, as all of the participants used the rating scale, which was somewhat higher than 5 out of 5. Google Classroom was utilised with extreme confidence by 34% of the sample, and the rating scale was used by the same amount (41 percent, 21 percent, 3 percent and 1 percent). Jam board, Google Forms, Google Meet, and Google Slides all had their own ranking systems.

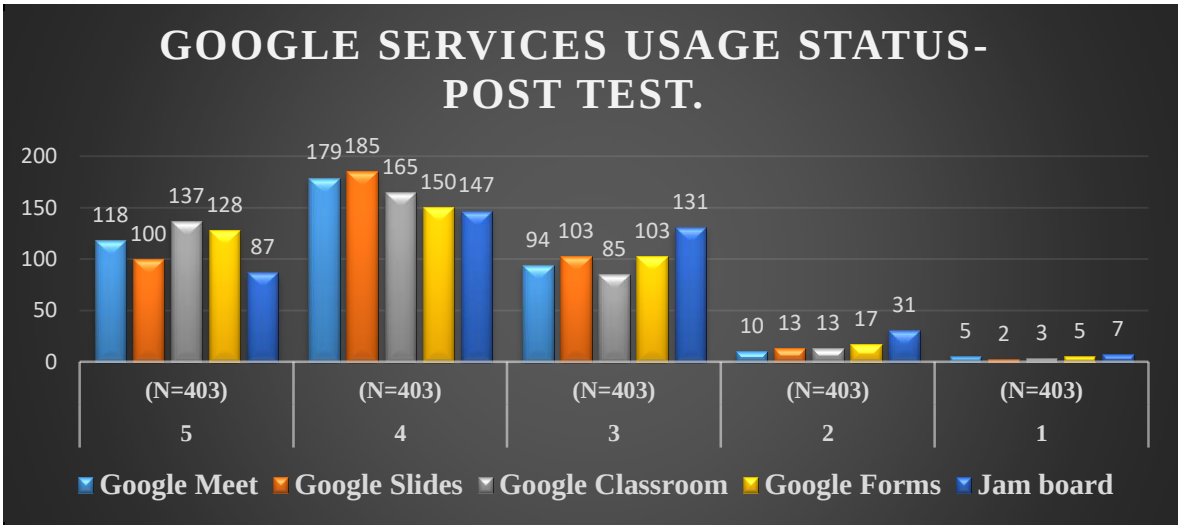


FIGURE-15

GOOGLE SERVICES USAGE STATUS-POST TEST

Table 13 and **figure 15** gives a sight on posttest level of confidence in using the Google services for teaching and learning.

4.2.3 WHATSAPP, QUIZIZZ AND SCREEN RECORDER –USAGE STATUS-POST TEST.

TABLE 14

Applications	5 (N=403)	%	4 (N=403)	%	3 (N=403)	%	2 (N=403)	%	1 (N=403)	%
WhatsApp	163	40	129	32	87	22	20	5	4	1
Quizizz	123	31	159	39	95	24	17	4	9	2
Screen Recorder	112	27	140	35	112	28	31	8	8	2

This graph shows the amount of confidence in using Google services for inclusive pedagogy. The sample showed some improvement in the post test, as all of the participants used the rating scale, which was somewhat higher than 5 out of 5.Followed by the position WhatsApp (40%, 32%, 22%, 5% and 1%), Quizizz (31%, 39%, 24%,4% and 9%)and finally Screen recorder (27%,35%,28%,8%and 2%).

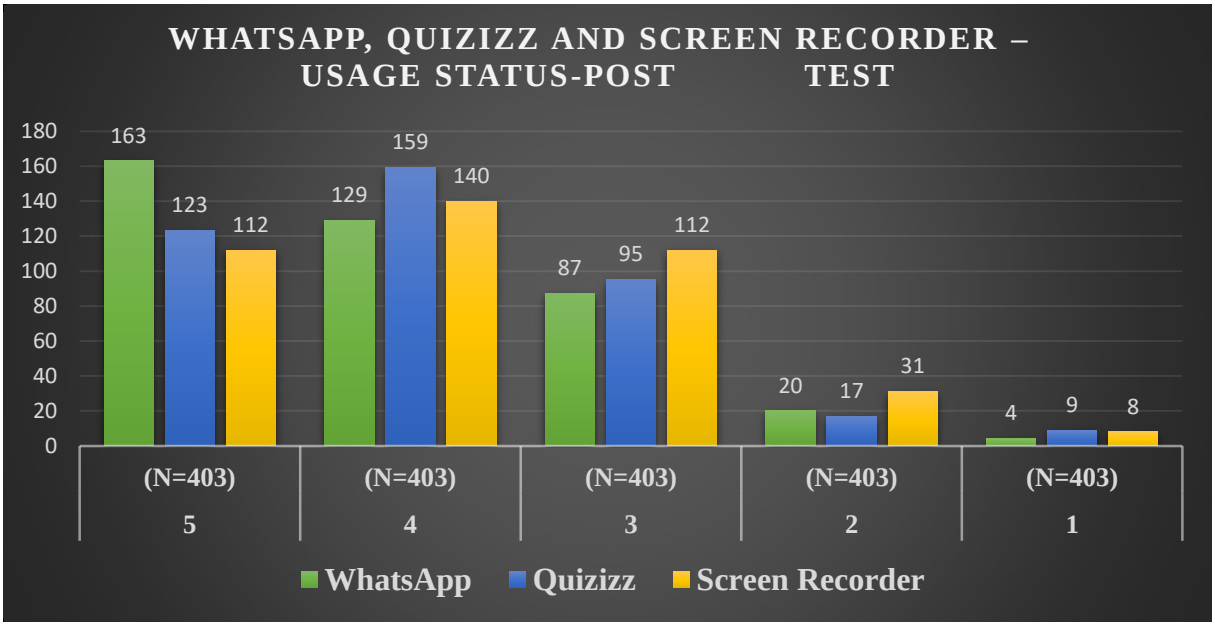


FIGURE-16

WHATSAPP, QUIZIZZ AND SCREEN RECORDER-USAGE STATUS-POST TEST

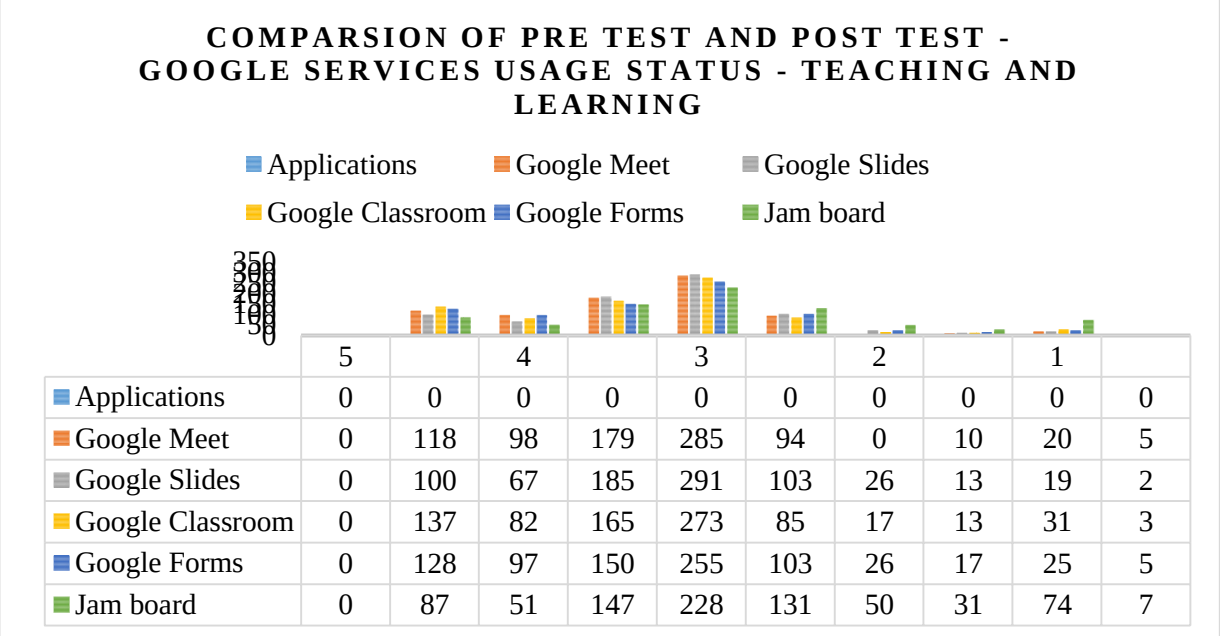
Table 14 and **figure 16** gives a sight on posttest level of confidence in using WhatsApp, Quizizz and screen recorder for teaching and learning.

4.2.4 COMPARSION OF PRE TEST AND POST TEST - GOOGLE SERVICES USAGE STATUS - TEACHING AND LEARNING

TABLE 15

Applications	5				4				3				2				1			
	Pre Test		Post Test		Pre Test		Post Test		Pre Test		Post Test		Pre Test		Post Test		Pre Test		Post Test	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Jam board	0	0	87	21	51	13	147	36	228	57	131	33	50	12	31	8	74	18	7	2
Google Slides	0	0	100	24	67	17	185	46	291	72	103	26	26	7	13	3	19	4	2	1
Google Meet	0	0	118	29	98	24	179	44	285	71	94	23	0	0	10	3	20	5	5	1
Google Classroom	0	0	137	34	82	20	165	41	273	68	85	21	17	4	13	3	31	8	3	1
Google Forms	0	0	128	32	97	24	150	37	255	63	103	26	26	7	17	4	25	6	5	1

After the pretest, the Google services showed modest improvement. No one was completely confident because no one scored a 5 on the confidence scale during the pre-test. The post-test gradually predicted that the sample would improve.



	5		4		3		2		1	
Applications	0	0	0	0	0	0	0	0	0	0
Google Meet	0	118	98	179	285	94	0	10	20	5
Google Slides	0	100	67	185	291	103	26	13	19	2
Google Classroom	0	137	82	165	273	85	17	13	31	3
Google Forms	0	128	97	150	255	103	26	17	25	5
Jam board	0	87	51	147	228	131	50	31	74	7

FIGURE-17

COMPARSION OF PRE TEST AND POST TEST - GOOGLE SERVICES USAGE STATUS - TEACHING AND LEARNING

Table 15 and **figure 17** gives a sight on comparison of pretest and posttest level of confidence in using the Google services for teaching and learning.

4.3.1 COMPARISON OF PRE-TEST AND POST-TEST - GOOGLE MEET

TABLE 16

Variables	Particulars	N	Test	df	Mean	S.D	t-score
M-Learning Applications	Google Meet	403	Pre test	402	3.144	.6496	14.697*
		403	Post test	402	3.973	.8591	

***-Significant at 5 per cent level**

Inclusion entails creating an environment in the classroom where all students are accepted, valued, and offered the ability to reach their full potential. The Universal Design Learning (UDL) standards provide several ways to include mobile devices into teaching and learning. The pre service teacher trainees were tested for the confidence level as the large samples were unable to respond extremely confident hence there was a need to provide remedial intervention in which the samples can self-introspect themselves in encouraging their confidence level among M-learning application (Google Meet) and to find the efficacy of the intervention given post-test was provided .

And therefore it may be revealed that there is a significant improvement on remedial intervention used among the samples. It means that there was a significant impact on understanding the pre service teacher trainee's confidence level in using Google Meet, because Google meet is one of the important tools that is widely popular among teaching and learning environment to promote inclusive education.

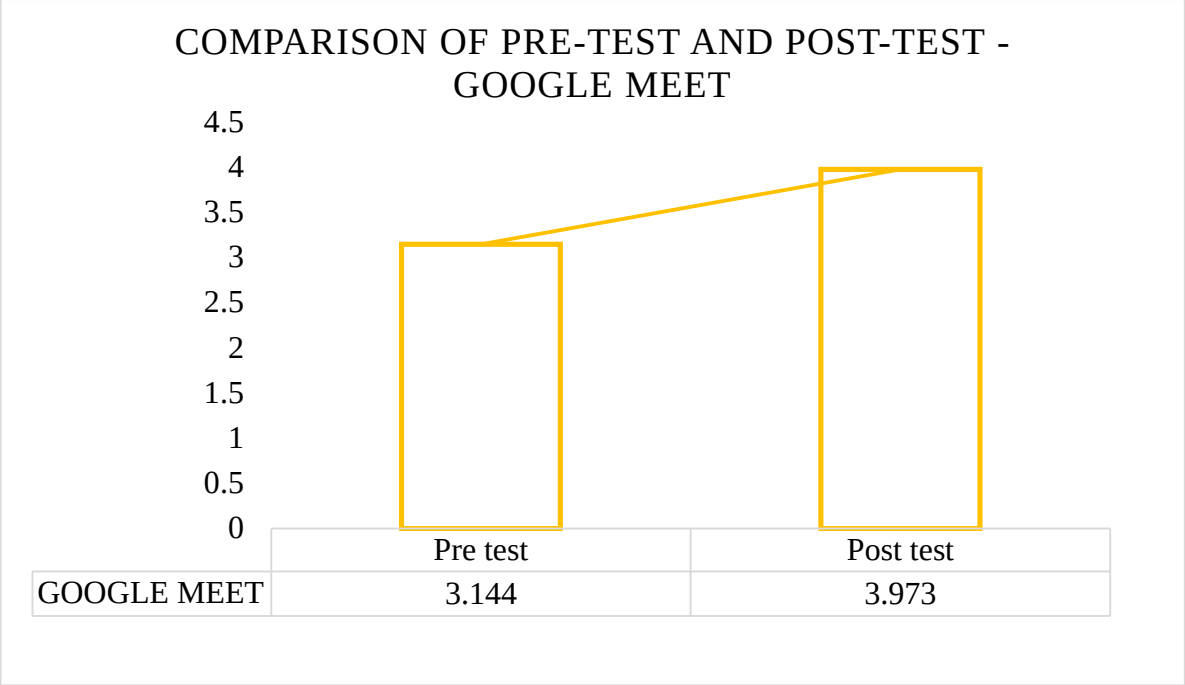


FIGURE-18

COMPARSION OF PRE TEST AND POST TEST –GOOGLE MEET

Table 16 and **figure 18** gives a sight on comparison of pretest and posttest mean scores level of confidence in using the Google meet for teaching and learning.

4.3.2 COMPARISON OF PRE-TEST AND POST-TEST - GOOGLE SLIDES

TABLE 17

Variables	Particulars	N	Test	df	Mean	S.D	t-score
M-Learning Applications	Google Slides	403	Pre test	402	3.007	.6483	17.410*
		403	Post test	402	3.913	.8195	

***-Significant at 5 per cent level**

In response to technological improvements, the use of smartphone platforms is fast evolving. As a result of these breakthroughs, human behaviours, concepts, and lives have all changed. Inclusion has beneficial and worthwhile outcomes, but they aren't huge. The level of confidence of pre-service teacher trainees was assessed because large samples were unable to react with extreme confidence, necessitating a remedial intervention in which the samples could identity in order to encourage their level of confidence within the M-learning application (Google Slides), and a post-test was offered to quantify the effect of the intervention.

As a result, it may be discovered that the restorative intervention utilised in the samples has significantly improved. It means that there was a significant impact on determining the pre-service teacher trainee's level of confidence in using Google Slides, and since Google Slides is one of the most widely used tools in the teaching and learning environment, and it is well-known for promoting inclusive education through real-time collaboration.

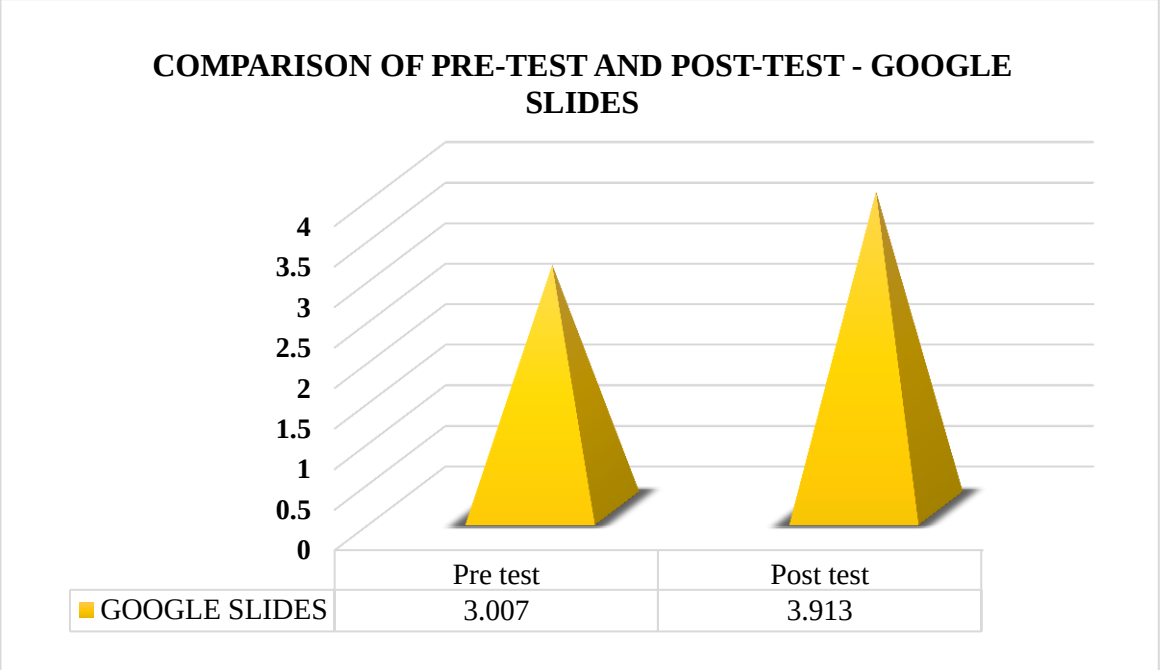


FIGURE-19

COMPARSION OF PRE TEST AND POST TEST –GOOGLE SLIDES

Table 17 and **figure 19** gives a sight on comparison of pretest and posttest mean scores level of confidence in using the Google slides for teaching and learning.

4.3.3 COMPARISON OF PRE-TEST AND POST-TEST - GOOGLE CLASSROOM

TABLE 18

Variables	Particulars	N	Test	df	Mean	S.D	t-score
M-Learning Applications	Google Classroom	403	Pre test	402	3.007	.7448	18.451*
		403	Post test	402	4.042	.8643	

***-Significant at 5 per cent level**

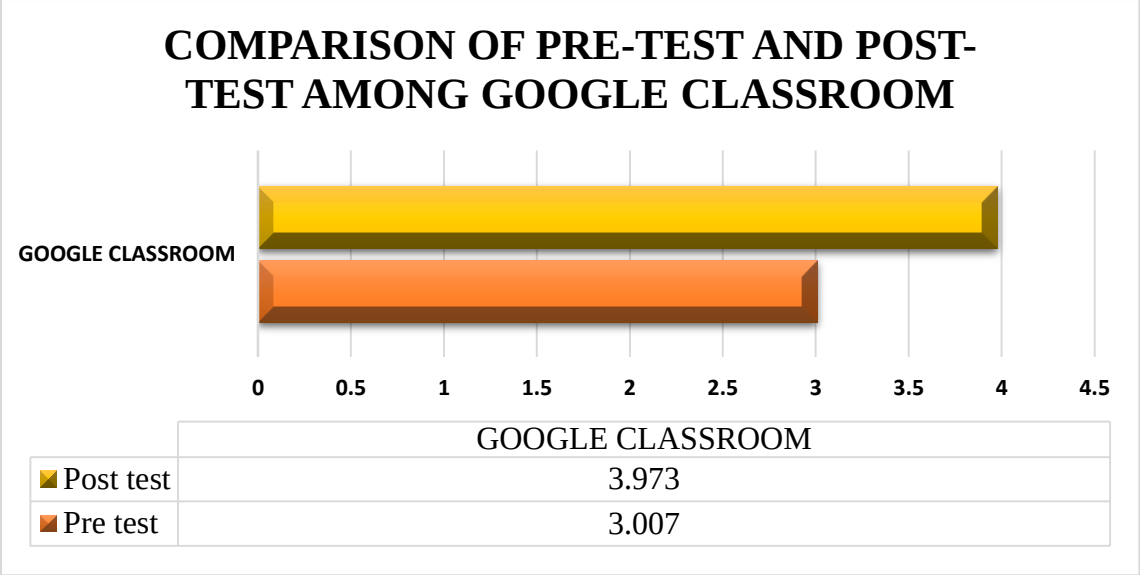


FIGURE 20

COMPARSION OF PRE TEST AND POST TEST AMONG GOOGLE CLASSROOM

Table 18and **figure 20** gives a sight on comparison of pretest and posttest mean scores level of confidence in using the Google meet for teaching and learning.

4.3.4 COMPARISON OF PRE-TEST AND POST-TEST - GOOGLE FORMS

TABLE 19

Variables	Particulars	N	Test	df	Mean	S.D	t-score
M-Learning Applications	Google Forms	403	Pre test	402	3.052	.7430	15.532*
		403	Post test	402	3.940	.9231	

***-Significant at 5 per cent level**

As a result, it's possible that the sampling' remedial impact has greatly enhanced. It means that there was a significant impact on determining the pre-service teacher trainee's level of confidence in using Google Classroom, and since Google Classroom provides sample with timely feedback on their confidence level, and it is well-known for promoting inclusive education by assisting teachers and pre-service teacher in streamlining cumulative and comprehensive assessments, this means that there was a significant impact on determining the pre-service teachers' level of confidence in using Google Classroom.

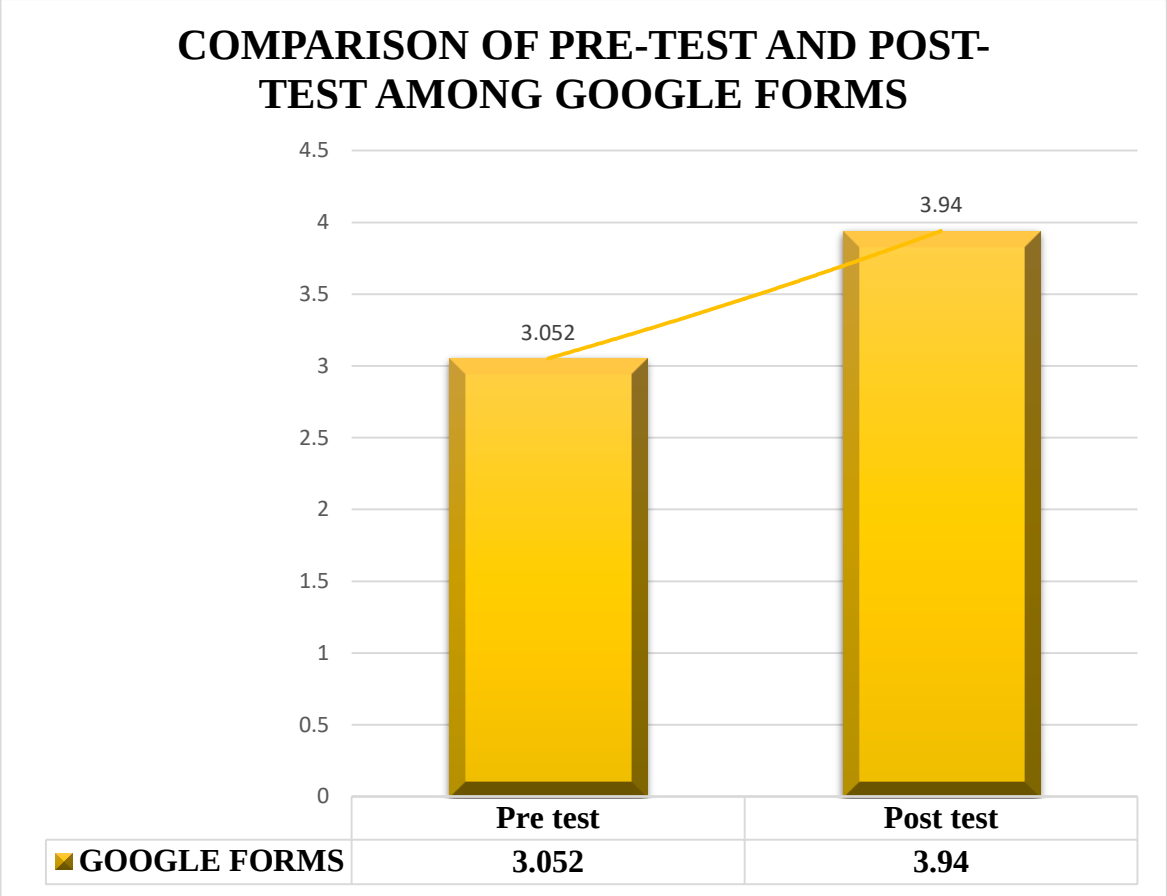


FIGURE 21

COMPARSION OF PRE TEST AND POST TEST AMONG GOOGLE FORMS

Table 19 and **figure 21** gives a sight on comparison of pretest and posttest mean scores level of confidence in using the Google Forms for teaching and learning.

4.3.5 COMPARISON OF PRE-TEST AND POST-TEST - GOOGLE JAMBOARD

TABLE 20

Variables	Particulars	N	Test	df	Mean	S.D	t-score
M-Learning Applications	Google Jam board	403	Pre test	402	2.635	.9242	16.583*
		403	Post test	402	3.685	.9476	

***-Significant at 5 per cent level**

As just an end result, the remedial impact of the sampling have significantly increased. It appears that the pre-service teacher trainee's level of confidence in using Jam board, which is well-known for supporting inclusive education by assisting instructors and pre-service instructors in addressing learning and teaching through digital interaction, had a significant influence.

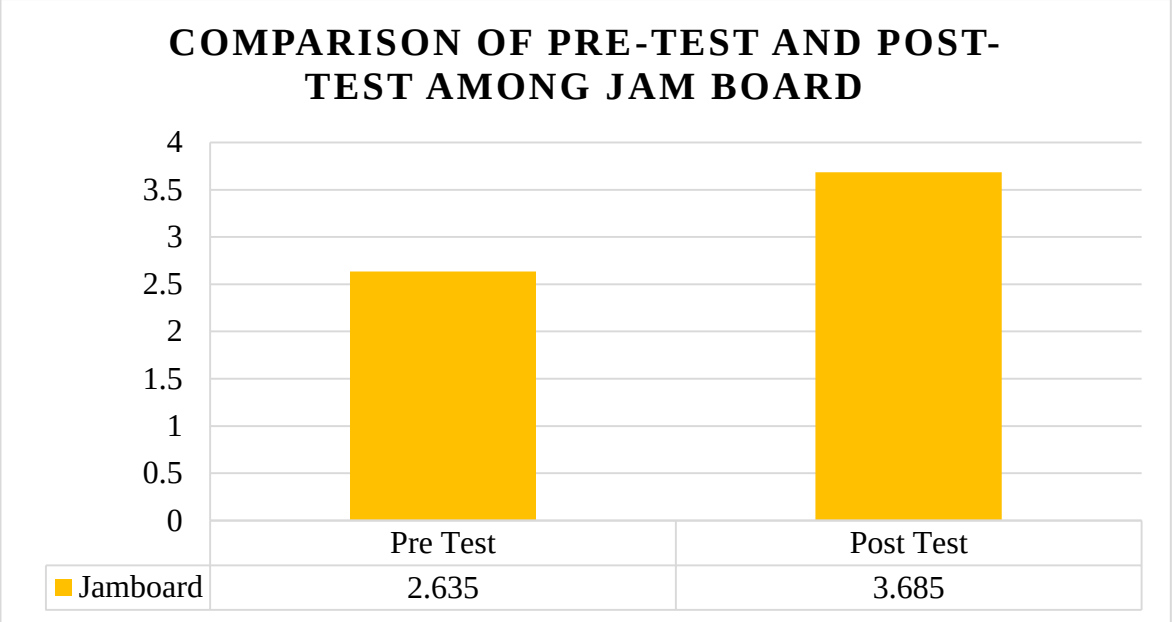


FIGURE 22

COMPARSIONS OF PRE TEST AND POST TEST AMONG JAMBOARD

Table 20 and **figure 22** gives a sight on comparison of pretest and posttest mean scores level of confidence in using the Google Jam board for teaching and learning.

4.3.6 COMPARISON OF PRE-TEST AND POST-TEST - WHATSAPP

TABLE 21

Variables	Particulars	N	Test	df	Mean	S.D	t-score
M-Learning Applications	WhatsApp	403	Pre test	402	3.189	.7222	14.719*
		403	Post test	402	4.060	.9523	

***-Significant at 5 per cent level**

WhatsApp use in academia is already causing a stir in the industry. In the next years, WhatsApp in academia will help democratization learning by empowering educators and educational institutions to reach out to more students than the conventional, in-person education system could ever reach. A post-test was performed since the significant samples were unable to reply with extreme confidence, necessitating a remedial intervention in which the samples may self-reflect in order to stimulate their confidence level among M-learning applications (WhatsApp) and to successfully find the results. The sample, there's a major improvement in the remedial intervention. It indicates that there was a considerable impact on comprehending the pre-existing condition.

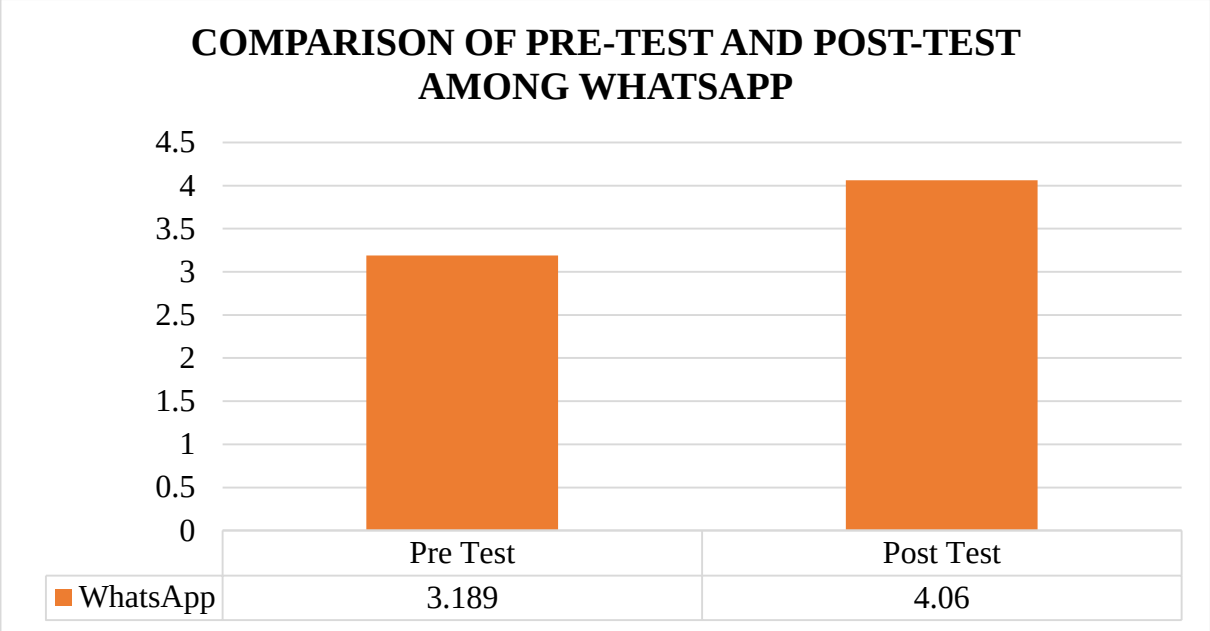


FIGURE-23

COMPARISON OF PRE-TEST AND POST-TEST AMONG WHATSAPP

Table 21 and **figure 23** gives a sight on comparison of pretest and posttest mean scores level of confidence in using the WhatsApp for teaching and learning.

4.3.7 COMPARISON OF PRE-TEST AND POST-TEST - QUIZIZZ

TABLE 22

Variables	Particulars	N	Test	df	Mean	S.D	t-score
M-Learning Applications	Quizizz	403	Pre test	402	2.841	.8313	16.890*
		403	Post test	402	3.918	.9520	

***-Significant at 5 per cent level**

Teachers and students have benefited from the inclusion of web-based gaming or mobile learning languages since it has improved the effectiveness of teaching and learning. The sampling's remedial impact may have been considerably enhanced. The results were significant and it suggests that there was a considerable impact on assessing the pre-service teacher trainee's degree of confidence in using Quizizz.

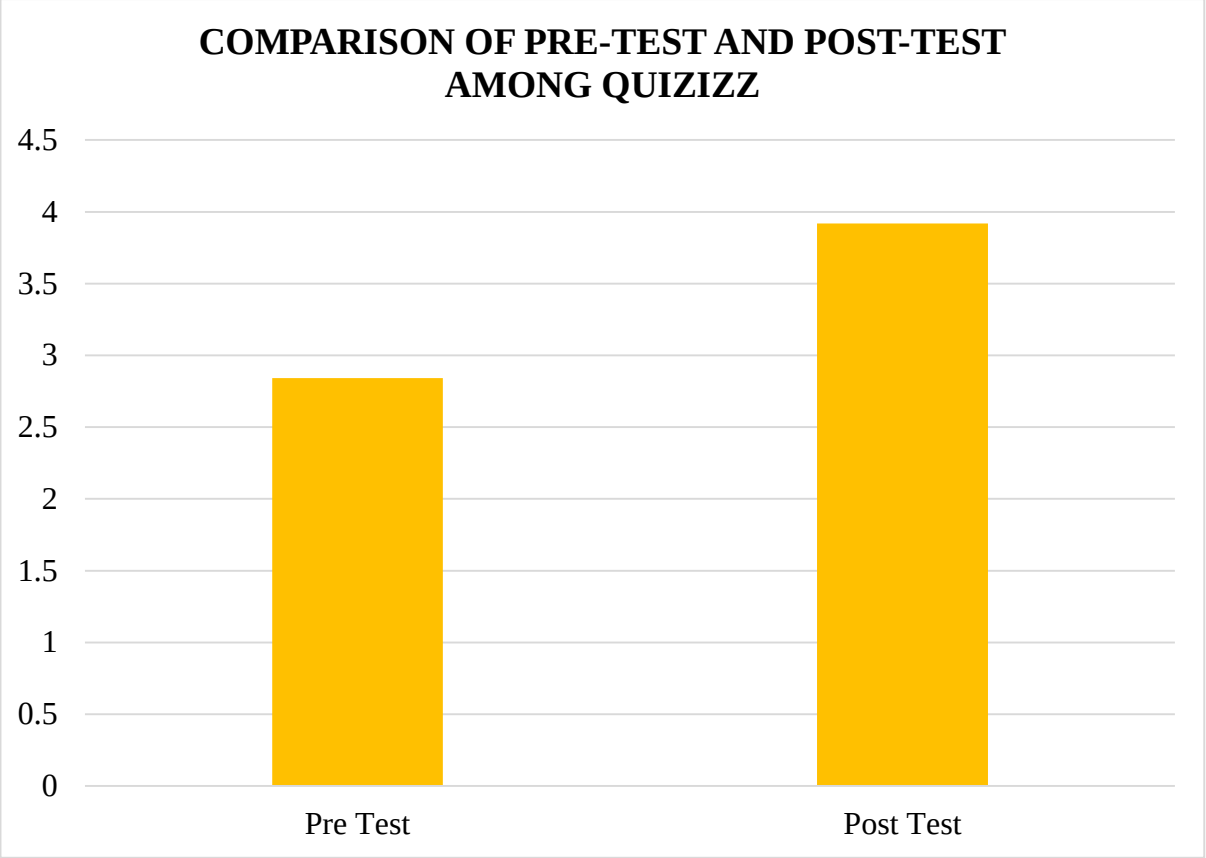


FIGURE 24

COMPARSION OF PRE TEST AND POST TEST AMONG QUIZIZZ

Table 22 and **figure 24** gives a sight on comparison of pretest and posttest mean scores level of confidence in using Quizizz for teaching and learning.

4.3.8 COMPARISON OF PRE-TEST AND POST-TEST – SCREEN RECORDER

TABLE 23

Variables	Particulars	N	Test	Df	Mean	S.D	t-score
M-Learning Applications	Screen Recorder	403	Pre test	402	2.814	.7871	14.707*
		403	Post test	402	3.787	.9996	

***-Significant at 5 per cent level**

The large groups of pre-service teacher trainees were unable to react with complete confidence in screen recorder , a remedial intervention was required in which the samples could identify in order to increase their level of confidence in M-learning application fields (Screen Recorder), and a post-test was provided to quantify the intervention's

effect.The sampling's remedial impact may have been significantly increased. The outcomes were substantial, implying that the pre-service teacher trainee's level of trust in utilising Screen Recorder had a significant impact.

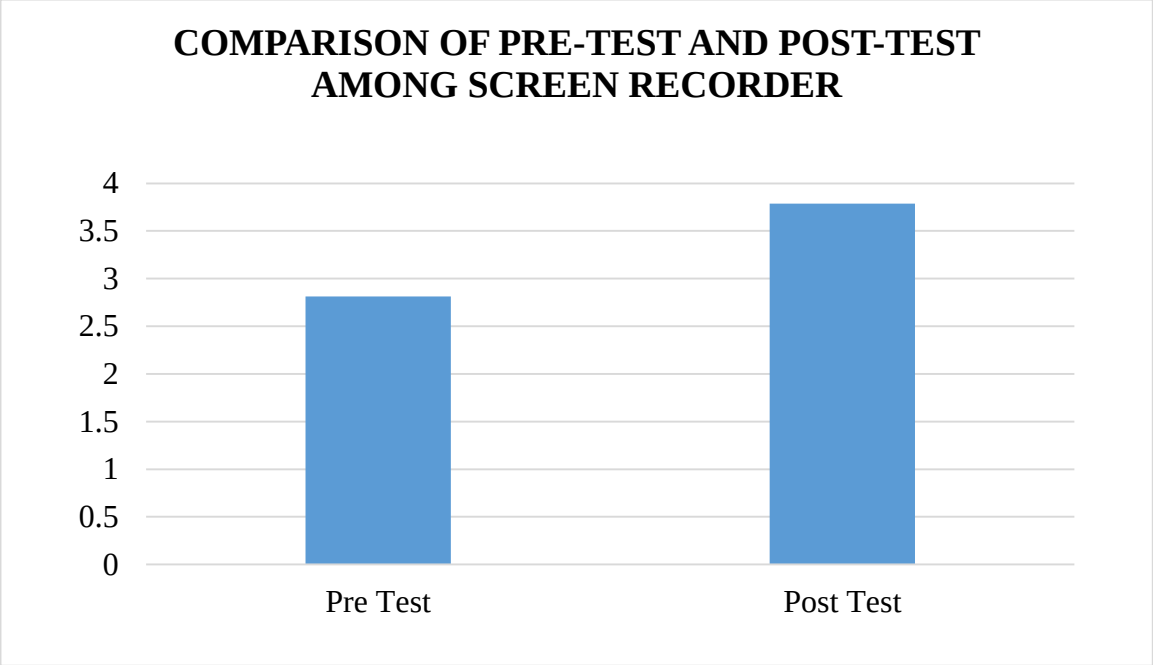


FIGURE-25

COMPARSION OF PRE TEST AND POST TEST AMONG SCREEN RECORDER

Table 23 and **figure 25** gives a sight on comparison of pretest and posttest mean scores level of confidence in using the Screen Recorder for teaching and learning.

4.4.1 COMPARISON OF PRE- TEST AND POST TEST SCORES OF GOOGLE SERVICES WITH RESPECT TO GENDER

TABLE 24

VARIABLE	TEST	MEAN	STANDARD DEVIATION	t - Score	
				Pre test	Post test
Google Meet	Pre Test M(28) F(375)	3.2857	0.6560	0.97332	0.2331
		3.1333	0.4046		
	Post Test M(28) F(375)	3.9285	1.10582		
		3.976	0.7133		
Google Slides	Pre Test M(28) F(375)	3.035714	0.702381	0.18786	0.1278*****
		3.005333	0.401041		
	Post Test M(28) F(375)	3.892857	0.765873		
		3.914667	0.666496		
Google Classroom	Pre Test M(28) F(375)	3.035714	0.776455	0.1779	0.6199
		3.005333	0.540078		
	Post Test M(28) F(375)	3.928571	1.031746		
		4.050667	0.727373		
Google Forms	Pre Test M(28) F(375)	3	0.66667	0.35233	0.06455*
		3.056	0.544984		
	Post Test M(28) F(375)	3.928571	1.031746		
		3.941333	0.841469		
Google Jam Board	Pre Test M(28) F(375)	2.214286	1.137566	2.18619*	0.6266
		2.666667	0.821747		
	Post Test M(28) F(375)	3.571429	0.994709		
		3.693333	0.892335		

***-Significant at 5 per cent level**; **NS-Not Significant**

Whether the gender had an influence on the level of awareness and confidence in using mobile learning applications for inclusion has been checked with the response of male (28) and female (375) in the pre and post-test using‘t’ test .

The result reveal that

1. The Google Meet usage was at an average confidence level of 3.2 and 3.1 among the male (28) and female (375) sample respectively. And gender had no influence .The post-test level of confidence for both male and female is at 3.9 and did not have any significant difference.

2. The Google Slides were widely used by the pre service trainees. Gender had no influence in the pre-test. The intervention had almost equal outcome by both female and male at 3.9 (avg) level of confidence and no role for gender.

3. Gender had no role to play in the level of confidence of the sample in the pre as well as post-tests in using Google classroom .Both female and male could use it with greater confidence for their inclusive pedagogy.

4. Google forms usage had been at same level of confidence among all the selected sample . Female sample were found to be more confident than male in the posttest.

5. Jam board usage was not so common among the sample and they were not confident in the usage of Jam board for inclusive pedagogy Female sample had more confidence than that of male in the pre-test wherein the intervention could boost the confidence level of both to the equal level.

These interpretation help us come to a conclusion that mostly gender had no role to play in the pre &post-test: Though we find significant difference in 3 columns of the above value (Google Slides, Google Forms and Google Jam board),as the sample is not so large to come to conclusion, this requires further study.

4.4.2 COMPARISON OF PRE- TEST AND POST TEST SCORES OF- WHATSAPP, QUIZIZZ AND SCREEN RECORDER WITH RESPECT TO GENDER.

TABLE 25

VARIABLE	TEST	MEAN	VARIANCE/STANDARD DEVIATION	t-SCORE	
				Pre test	Post test
WhatsApp	Pre Test	3	0.592593	1.35NS	0.26NS
	Pre Test	3.202667	0.514966		
	Post Test	4.1071	0.988095		
	Post Test	4.056	0.903273		
Quizizz	Pre Test	3.25	0.268519	4.1NS	1.0729*****
	Pre Test	2.81	0.710046		
	Post Test	3.714286	1.100539		
	Post Test	3.933333	0.891266		
Screen Recorder	Pre Test	3.071429	0.587302	1.84NS	1.03NS
	Pre Test	2.794667	0.618153		
	Post Test	3.607143	0.914021		
	Post Test	3.8	1.005348		

***-Significant at 5 per cent level; NS –Not Significant**

1. WhatsApp for inclusive pedagogy did not have any significant difference between male and female in the pre-test. The level of confidence could raise from 3 to 4 in the pre-test among all the sample. Therefore, the gender did not influence the level of confidence in the usage of WhatsApp for inclusive classes.

2. Quizizz platform was used with 3.25 (average) &2.81(average) level of confidence by male and female respectively in the pre-test. The post test (average) levels of confidence has been boosted from 3.25(average) to 3.7(average) and 2.81(average) to 3.9(average) for the male and female sample respectively. The post-test had a significance difference

between the male and female sample where the female could gain better from the intervention.

3. Screen recorder has been used at 2.8 (average) and 3.6 (average) levels of confidence in the pre-test and in the post test at 3.6 and 3.8 (average) level of confidence by male and female respectively for inclusive pedagogy. Both pre &posttest did not have any influence on gender.

4. We come to a conclusion that gender does not limit/boost the confidence levels of the pre service trainees in using mobile learning tools for inclusive classes. However due to the sample limitations this requires further deeper study and analysis.

4.4.3 COMPARISON OF PRE- TEST AND POST TEST SCORES OF- GOOGLE SERVICES WITH RESPECT TO AGE.

TABLE 26

AGE	N	VARIABLE	TEST	MEAN	VARIANCE/ STANDARD DEVIATION	t-SCORE	
						Pre test	Post test
Below 35	354	Google Meet	Pre Test	3.149718	0.416615	0.46NS	0.4NS
Above 35	49			3.102041	0.468537		
Below 35	354		Post Test	3.966102	0.695732		
Above 35	49			4.020408	1.062075		
Below 35	354	Google Slides	Pre Test	2.99435	0.419231	1.1NS	0.51NS
Above 35	49			3.102041	0.426871		
Below 35	354		Post Test	3.923729	0.580568		
Above 35	49			3.836735	1.347789		
Below 35	354	Google Slides	Pre Test	2.99435	0.419231	-1.08NS	0.51NS
Above 35	49			3.102041	0.426871		
Below 35	354		Post Test	3.923729	0.580568		
Above 35	49			3.836735	1.347789		
Below 35	354		Pre	3.008475	0.541004		

AGE	N	VARIABLE	TEST	MEAN	VARIANCE/ STANDARD DEVIATION	t-SCORE	
						Pre test	Post test
Above 35	49		Test	3	0.66667	0.01NS	0.91NS
Below 35 Above 35	354	Google Classroom	Post Test	4.062147	0.647685		
	49			3.895833	1.499557		
Below 35 Above 35	354	Google Forms	Pre Test	3.039548	0.548007	-0.89NS	1.06NS
	49			3.142857	0.583333		
Below 35 Above 35	354		Post Test	3.963277	0.772019		
	49			3.77551	1.427721		
Below 35 Above 35	354	Google Jam board	Pre Test	2.646893	0.869296	0.72NS	1.14NS
	49			2.55102	0.752551		
Below 35 Above 35	354		Post Test	3.70904	0.830116		
	49			3.510204	1.380102		

***-Significant at 5 per cent level**; **NS-Not Significant**

The influence of age on the level of confidence in using the mobile learning applications for inclusive pedagogy is analyzed using‘t’ test. The sample has been divided into 2 categories below and above 35 years. There were 35 years between 35 and 49 sample above 35 .The Google Meet was a useful pedagogical support for the pre service teachers below 35 than that of the sample of age above 35.

The post-test did not have the influence of age. The intervention could do justice to all. The Google Slide usage level of confidence was better to the sample below 35 age group than that of above 35 in the pre-test wherein the intervention could bridge the gap. Google Classroom, Google form, Google Jam board, WhatsApp, Quizizz and Screen recorder did not have the influence of age in both pre and post-test.

To conclude we have to look into the sample limitation and go for a detailed study with appropriate proportion of age sample. Hence the question on influence of age on mobile learning for inclusion classes remains unanswered.

The sample participated from both rural and urban location. Hence to check the influence of locality on the usage level of confidence among pre service teachers for inclusive classes has been tabulated for both pre & post-tests in the above table.

Just a glimpse of the table gives a clear picture that the locality had no role to play in the level of confidence among the pre service teachers in using mobile learning for inclusion.

4.4.4 COMPARISON OF PRE- TEST AND POST TEST SCORES OF WHATSAPP, QUIZIZZ AND SCREEN RECORDER WITH RESPECT TO AGE.

TABLE-27

Below 35 Above 35	354	WhatsApp	Pre Test	3.19209	0.512572	0.25NS	0.13NS
	49		Pre Test	3.163265	0.597789		
Below 35 Above 35	354		Post Test	4.062147	0.874314		
	49		Post Test	4.040816	1.164966		
Below 35 Above 35	354	Quizizz	Pre Test	2.847458	0.68488	0.39NS	2.22NS
	49		Pre Test	2.795918	0.74915		
Below 35 Above 35	354		Post Test	3.968927	0.7894		
	49		Post Test	3.55102	1.627551		
Below 35 Above 35	354	Screen Recorder	Pre Test	2.824859	0.6038	0.69NS	1.8NS
	49		Pre Test	2.734694	0.740646		
Below 35 Above 35	354		Post Test	3.830508	0.872041		
	49		Post Test	3.469388	1.837585		

***-Significant at 5 per cent level**; **NS-Not Significant**

The prepost responses pertaining to WhatsApp, Quizizz and Screen Recorder has been pooled & tabulated above. It is visible that both pre & post-tests did not have age as an influential factor.

4.4.5 COMPARISON OF PRE- TEST AND POST TEST SCORES OF-GOOGLE SERVICES WITH RESPECT TO LOCALITY

TABLE-28

LOCALITY	N	VARIABLE	TEST	MEAN	VARIANCE/STANDARD DEVIATION	t-SCORE	
						Pre test	Post test
Rural	205	Google Meet	Pre Test	3.2	0.396078	1.76NS	1.32NS
Urban	198		Pre Test	3.0858	0.444368		
Rural	205		Post Test	3.917073	0.801313		
Urban	198		Post Test	4.030303	0.669128		
Rural	205	Google Slides	Pre Test	3.02439	0.435677	0.53NS	1.36NS
Urban	198		Pre Test	2.989899	0.405989		
Rural	205		Post Test	3.858537	0.690674		
Urban	198		Post Test	3.969697	0.648823		
Rural	205	Google Classroom	Pre Test	2.995122	0.553898	0.34NS	0.65NS
Urban	198		Pre Test	3.020202	0.557965		
Rural	205		Post Test	4.014634	0.710569		
Urban	198		Post Test	4.07707	0.786853		
Rural	205	Google Forms	Pre Test	3.063415	0.569488	0.31NS	2.69NS
Urban	198		Pre Test	3.040404	0.53643		
Rural	205		Post Test	3.819512	0.864323		
Urban	198		Post Test	4.065657	0.812926		
Rural	205	Google Jam Board	Pre Test	2.717073	0.782305	1.8NS	0.67NS
Urban	198		Pre Test	2.550505	0.918756		
Rural	205		Post Test	3.653659	0.874558		
Urban	198		Post Test	3.717172	0.924678		

***-Significant at 5 per cent level**; **NS-Not Significant**

The sample were drawn from both rural and urban areas. To check whether the area had an influence on the level of confidence of the sample in using mobile learning for inclusion has been analyzed using‘t’ test for both pre & post-test.

It is inferred from the table that the locality did not have a specific significant influence on the usage of mobile learning for inclusiveness with respect to locality.

4.4.6 COMPARISON OF PRE- TEST AND POST TEST SCORES OF WHATSAPP, QUIZIZZ AND SCREEN RECORDER WITH RESPECT TO LOCALITY

TABLE -29

Rural Urban	205	WhatsApp	Pre Test	3.204878	0.477427	0.45NS	3.6NS
	198		Pre Test	3.171717	0.569348		
Rural Urban	205		Post Test	3.892683	0.949211		
	198		Post Test	4.232323	0.808696		
Rural Urban	205	Quizizz	Pre Test	2.834146	0.697848	0.17NS	0.23NS
	198		Pre Test	2.848485	0.687587		
Rural Urban	205		Post Test	3.907317	0.859015		
	198		Post Test	3.929293	0.959442		
Rural Urban	205	Screen Recorder	Pre Test	2.834146	0.619417	0.52NS	1.62NS
	198		Pre Test	2.792929	0.621879		
Rural Urban	205		Post Test	3.707317	0.933525		
	198		Post Test	3.868687	1.058811		

***-Significant at 5 per cent level**; **NS-Not Significant**

WhatsApp, Quizizz and Screen Recorder were already popular among the rural and urban population. With their sensitization on their usage for inclusive pedagogy could do more justice? Any how the earlier learning and the later through the intervention seemed to be equal between the rural & the urban sample helping us come to a conclusion that as far as their particular aspect is concerned ,there is no rural urban divide.

4.4.7 COMPARISON OF PRE- TEST AND POST TEST SCORES OF M-LEARNING APPLICATIONS WITH RESPECT TO PROGRAMME

TABLE-30

Variable	Test	Groups	Sum of Squares	Df	Mean Square	F
Google Meet	Pre test	Between Groups	0.124	2	.062	.147NS
		Within Groups	169.528	400	.424	
	Post test	Between Groups	4.096	2	2.048	2.799NS
		Within Groups	292.604	400	.732	
Google Slides	Pre test	Between Groups	.243	2	.121	.288NS
		Within Groups	168.735	400	.422	
	Post test	Between Groups	6.206	2	3.103	.010NS
		Within Groups	263.754	400	.659	
Google Classroom	Pre test	Between Groups	.880	2	.440	.793NS
		Within Groups	222.097	400	.555	
	Post test	Between Groups	2.407	2	1.203	1.616NS
		Within Groups	297.876	400	.745	
Google Forms	Pre test	Between Groups	.075	2	.038	.068NS
		Within Groups	221.831	400	.555	
	Post test	Between Groups	1.202	2	.601	.704NS
		Within Groups	341.369	400	.853	
Google Jam board	Pre test	Between Groups	2.795	2	1.398	1.642NS
		Within Groups	340.584	400	.851	

Variable	Test	Groups	Sum of Squares	Df	Mean Square	F
	Post test	Between Groups	3.324	2	1.662	1.859NS
		Within Groups	357.654	400	.894	
WhatsApp	Pre test	Between Groups	1.691	2	.845	1.626NS
		Within Groups	207.977	402	.520	
	Post test	Between Groups	2.686	2	1.343	1.484NS
		Within Groups	361.885	402	.905	
Quizizz	Pre test	Between Groups	5.559	2	2.780	4.084NS
		Within Groups	272.277	402	.681	
	Post test	Between Groups	4.768	2	2.384	2.652NS
		Within Groups	359.530	402	.899	
Screen Recorder	Pre test	Between Groups	3.664	2	1.832	2.986NS
		Within Groups	245.379	402	.613	
	Post test	Between Groups	2.483	2	1.241	1.244NS
		Within Groups	399.165	402	.998	

***-Significant at 5 per cent level**; **NS-Not Significant**

The mobile learning applications for inclusive Pedagogy as it been a recent trend due to the pandemic to go online seems to be of same level of confidence among the pre service teachers irrespectively of their course of study.

The B.Ed, M.Ed and Ph.D students took part in the study on mobile learning for inclusion. Their level of confidence in the usage has been collected in the pretest and the needy given intervention and then tested using posttest.

The collected data has been classified and tested for the influence of the course study on the mobile learning usage level of confidence.

The analysis arrived out using Anova clearly explains that there is no influence of course o study &level of confidence in using mobile learning for inclusion. As Pandemic

has forced all educational institutions to go online irrespective of our limitations and resources almost all of us sail on the same boat.

4.5.1 CONCLUSION

In the following chapter, the research findings are summarized and presented.

CHAPTER - V

SUMMARY AND CONCLUSION

5.1 INTRODUCTION

5.2 THE MAJOR FINDINGS

5.3 SUGGESTIONS FOR FURTHER STUDY

5.4 RECOMMENDATIONS

5.5 CONCLUSION

5.1 INTRODUCTION

In today's society, there is a lot of talk about inclusion—the idea that everyone should be welcomed and accepted regardless of their background or circumstances. M-Learning is one of the methods adopted by educators to provide learning effectively. The aim of M-learning is making learning more adaptable, transparent, and individually tailored. Mobile technology is really the process of acquiring any understanding, knowledge & skills.Learning through games is popularly utilized. In India, schooling is free, but higher education is not as quick to adopt it. The pandemic situation has necessitated technical teaching and learning process, which has transformed teaching and learning processes.

B.Ed scholars are the gate keepers for stimulating inclusive education where they construct innovative pathways to endorse the children with different abilities in the inclusive setup. M.Ed scholars are the hazard hackers to cultivate new research where traditional and technological learning can stimulate and blend children with disabilities into inclusive education. Ph.D scholars are the narrators. Hence all the stated scholars are the effective correspondents to astound the importance of mobile learning through safekeeping and promote inclusive education all over the globe.

Pre-service teachers were given a quick poll on the most often used M-Learning software. Is there any real rationale for them to use mobile learning to promote inclusion? The initial survey explained the need for strengthening the usage of various aspects of mobile learning applications .The researcher limited herself to the applications that are spelt as commonly used in the survey (Google Meet, Google Slides, Google Classroom, and Google jam board, WhatsApp, Quizizz and Screen Recorder).

A package was prepared where the samples were asked to express their level of confidence in the usage of the mobile learning applications for inclusive teaching and learning. When the respondent click a low level of confidence (from 4 -1 out of 5 ratings) was redirected to remedial teaching and learning and tested using a posttest. The package was created as a mixture of video recording, pamphlet, concept map, and mind map; all of which provide a short recap of how to use the applications for effective inclusive pedagogy.

The package was designed to assess pre-service teacher trainees' confidence levels in using M-Learning tools for teaching and learning. A total of 17 questions were chosen to cover the eight components of the M-learning application. To determine the performance of pre-service teacher trainees, the same tool was used for both pre-test and post-test.

The M-Learning package were prepared, refined through pilot study and jury opinion .The pre service teachers were evaluated on the rating scale postulated by the 5 point rating scale.

5.2 THE MAJOR FINDINGS

1. The use of mobile learning by pre-service teachers was examined in the primary survey. It was also required to determine the preservice teachers' degree of comfort in implementing mobile learning for inclusion.
2. The survey intended to find the usage of mobile learning applications for inclusion has and has been conducted for preservice teachers. Most of the sample have given positive response to this question. This helps us to understand that mobile learning for inclusion is a well-known component among the sample.
3. The purpose of mobile learning for the sample has been to learn their curriculum (65%) and to update current affairs (46%), beyond the curriculum (43.2%) has been the second priority in the usage. Almost (30%) of the sample use mobile learning for clarifications/equip/understand a particular issue.
4. The video conferencing applications that won the most common among the sample (96.4%) for video conferencing was 'Google Meet'. The WhatsApp (70%) takes the 2^{nd} position and YouTube is just behind WhatsApp as it has been rated as useful among (63%) of the sample. Zoom takes 4^{th} position as it has been rated useful by (55%) of the sample. Teams and Skype are new learnt applications as it's rated useful by (13% and 5%) of this sample respectively.
5. Google Forms is the widely used application for educational purpose as stipulated by the majority of the sample (98%), mentimeter is used around 12%of the sample and Kahoot, Edpuzzle and Nearpod are rarely used as stated by 5%, 3.6% and 2.2% of the sample respectively. Kahoot, Edpuzzle and Nearpod are rarely used as only some of the sample have pronounced it as useful for educational assessment. This envisages that more such tools are to be sensitized for better usage of mobile learning for inclusion.

6. The pre-test scores provided by the pre service teachers were not so confident enough .Hence intervention package could raise most of the pre service teachers to attain the highest standards in terms of confidence level in using mobile learning.
7. The level of confidence in using the Google services for inclusive pedagogy has been tabulated here considering the pre-test. No one was totally confident as none has ticked 5 on '1-5' scale of confidence level. Google meet and Google Forms has been the most familiar apps with greater level of confidence(98%&97%).Google Classroom ,Google Slides &Jam board were the other applications spelt as good with an user level of confident at 4 out of 5 scale by 82%,67% &51% respectively.
8. The pre service teachers were queried about the mobile learning applications that they are confident in using. Most of the sample were confident with WhatsApp; Quizizz & Screen Recorder has been the least ones as expressed by 20% and 16% of the sample respectively with greater level of confidence. It is also imperative to note that no one has selected '5'level of confidence here with pre-test.
9. The sample showed some improvement in the post test, as all of the participants used the rating scale, which was somewhat higher than 5 out of 5. Google Classroom was utilised with extreme confidence by 34% of the sample, and the rating scale was used by the same amount (41 percent, 21 percent, 3 percent and 1 percent). Jam board, Google Forms, Google Meet, and Google Slides all had their own ranking systems.
10. The sample showed some improvement in the post test, as all of the participants used the rating scale, which was somewhat higher than 5 out of 5.Followed by the position WhatsApp (40%, 32%, 22%, 5% and 1%), Quizizz (31%, 39%, 24%,4% and 9%)and finally Screen recorder (27%,35%,28%,8%and 2%).
11. Inclusion entails creating an environment in the classroom where all students are accepted, valued, and offered the ability to reach their full potential. The Universal Design Learning (UDL) standards provide several ways to include mobile devices into teaching and learning. The pre service teacher trainees were tested for the confidence level as the large samples were unable to respond extremely confident hence there was a need to provide remedial intervention in which the samples can self-introspect themselves in encouraging their confidence level among M-learning application (Google Meet) and to find the efficacy of the intervention given post-test was provided . And therefore it may be revealed that there is a significant improvement on remedial intervention used among the samples. It means that there was a significant impact on understanding the pre service teacher trainee's confidence level in using

Google Meet, because Google meet is one of the important tools that is widely popular among teaching and learning environment to promote inclusive education.

12. In response to technological improvements, the use of smartphone platforms is fast evolving. As a result of these breakthroughs, human behaviours, concepts, and lives have all changed. Inclusion has beneficial and worthwhile outcomes, but they aren't huge. The level of confidence of pre-service teacher trainees were assessed because large samples were unable to react with extreme confidence, necessitating a remedial intervention in which the samples could identity in order to encourage their level of confidence within the M-learning application (Google Slides), and a post-test was offered to quantify the effect of the intervention. As a result, it may be discovered that the restorative intervention utilised in the samples has significantly improved. It means that there was a significant impact on determining the pre-service teacher trainee's level of confidence in using Google Slides, and since Google Slides is one of the most widely used tools in the teaching and learning environment, and it is well-known for promoting inclusive education through real-time collaboration.
13. As a result, it's possible that the sampling' remedial impact has greatly enhanced. It means that there was a significant impact on determining the pre-service teacher trainee's level of confidence in using Google Classroom, and since Google Classroom provides sample with timely feedback on their confidence level, and it is well-known for promoting inclusive education by assisting teachers and pre-service teacher in streamlining cumulative and comprehensive assessments, this means that there was a significant impact on determining the pre-service teachers' level of confidence in using Google Classroom.
14. As just an end result, the remedial impact of the sampling may have been significantly increased. It appears that the pre-service teacher trainee's level of confidence in using Jam board, which is well-known for supporting inclusive education by assisting instructors and pre-service instructors in addressing learning and teaching through digital interaction, had a significant influence.
15. WhatsApp use in academia is already causing a stir in the industry. In the next years, WhatsApp in academia will help democratization learning by empowering educators and educational institutions to reach out to more students than the conventional, in-person education system could ever reach. A post-test was performed since the significant samples were unable to reply with extreme confidence, necessitating a remedial intervention in which the samples may self-reflect in order to stimulate their

confidence level among M-learning applications (WhatsApp) and to successfully find the results. The sample, there's a major improvement in the remedial intervention. It indicates that there was a considerable impact on comprehending the pre-existing condition.

16. Teachers and students have benefited from the inclusion of web-based gaming or mobile learning languages since it has improved the effectiveness of teaching and learning. The sampling's remedial impact may have been considerably enhanced. The results were significant and it suggests that there was a considerable impact on assessing the pre-service teacher trainee's degree of confidence in using Quizizz
17. The large groups of pre-service teacher trainees were unable to react with complete confidence in screen recorder , a remedial intervention was required in which the samples could identify in order to increase their level of confidence in M-learning application fields (Screen Recorder), and a post-test was provided to quantify the intervention's effect. The sampling's remedial impact may have been significantly increased. The outcomes were substantial, implying that the pre-service teacher trainee's level of trust in utilising Screen Recorder had a significant impact.
18. The Google Meet usage was at an average confidence level of 3.2 and 3.1 among the male (28) and female (375) sample respectively. And gender had no influence .The post-test level of confidence for both male and female is at 3.9 and did not have any significant difference.
19. The Google Slides were widely used by the preservice trainees. Gender had no influence in the pretest.The intervention had almost equal outcome by both female and male at 3.9(avg) level of confidence and no role for gender.
20. Gender had no role to play in the level of confidence of the sample in the pre as well as post-tests in using Google classroom .Both female and male could use it with greater confidence for their inclusive pedagogy.
21. Google forms usage had been at same level of confidence among all the selected sample. But female could become more confident than male in the post test.
22. Jam board usage was not so common among the sample and they were not so confident in the usage of Jam board for inclusive pedagogy Female sample had more confidence than that of male in the pre-test wherein the intervention could boost the confidence level of both to the equal level.
23. These interpretation help us come to a conclusion that mostly gender had no role to play in the pre &post-test: Though we find significant difference in 3 columns of the

above value (Google Slides, Google Forms and Google Jam board),as the sample is not so large to come to conclusion, this requires further study.

24. WhatsApp for inclusive pedagogy did not have any significant difference between male and female in the pre test.The level of confidence could raise from 3 to 4 in the pre-test among all the sample. Therefore, the gender did not influence the level of confidence in the usage of WhatsApp for inclusive classes.
25. Quizizz platform was used with 3.25 (average) &2.81(average) level of confidence by male and female respectively in the pre-test.The post test (average) levels of confidence has been boosted from 3.25(average) to 3.7(average) and 2.81(average) to 3.9(average) for the male and female sample respectively. The post-test had a significance difference between the male and female sample where the female could gain better from the intervention.
26. Screen recorder has been used at 2.8(average) and 3.6 (average) levels of confidence in the pre-test and in the post test at 3.6 and 3.8(average) level of confidence by male and female respectively for inclusive pedagogy. Both pre &post-tests did not have any influence on gender.
27. We come to a conclusion that gender does not limit/boost the confidence levels of the pre service trainees in using mobile learning tools for inclusive classes. However due to the sample limitations this requires further deeper study and analysis.
28. The mobile learning applications for inclusive Pedagogy as it been a recent trend due to the pandemic to go online seems to be of same level of confidence among the pre service teachers irrespectively of their course of study.
29. The B.Ed, M.Ed and Ph.D students took part in the study on mobile learning for inclusion. Their level of confidence in the usage has been collected in the pretest and the needy given intervention and then tested using posttest.
30. The collected data has been classified and tested for the influence of the course study on the mobile learning usage level of confidence.
31. The analysis arrived out using Anova clearly explains that there is no influence of course o study &level of confidence in using mobile learning for inclusion. As Pandemic has forced all of us go online irrespective of our limitations and resources almost all of us sail on the same boat.

5.3 SUGGESTIONS FOR FURTHER STUDY

Based on the experience the researcher felt the need for suggesting areas for the further study and are listed below:

1. An introspective analysis can be made under each dependent variable (Google Meet, Google Slides, and Google Classroom, Google Forms, Google jam board, WhatsApp, Quizizz and Screen Recorder) to make the study more exclusive for inclusive classroom teaching and learning.
2. How mobile learning tools can be adopted for individualistic needs of various disabilities.
3. The limitations imposed upon the children due to the disabilities in teaching and learning has to be ideally matched with the technology available to support them overcome their barriers and access education better.
4. A curriculum adaptation module shall be developed to foster UDL and facilitate better inclusion.
5. Mobile learning shall help in recording curriculum transaction and then support in further research of answer how & why of the adaptations to study the relationship better.
6. Promote peer tutoring and mobile learning
7. How Inclusive Education shall be made more successful through mobile learning?
8. How mobile learning can aid in bridging the gap due to individual differences.
9. Mobile learning for the education in Indian context to be studied in detail.
10. A structured and rigorous longitudinal study can help research in this field blossom.

5.4 RECOMMENDATIONS

5.4.1 TO THE TEACHER TRAINING INSTITUTIONS:

- Teacher training institution shall encourage the students to take up mini projects in the area of mobile learning for promoting inclusion with the technical supporters involved in machine learning and artificial intelligence.
- The teacher education institution shall compile a list of educational gadgets for children with special needs and disseminate the information.

5.4.2 TO THE ADMINISTRATORS

- Shall ensure the children the availability of all the teaching and learning resources.

- Neither overprotection nor carelessness is acceptable.
- Treat everyone equally
- Prepare to handle technical problems.
- Make connections and advocate for your children's needs.

5.4.3 TO THE RESOURCE TEACHERS

- Shall Support and equip themselves in mobile learning.
- Shall maintain positive relationships with educators and technical supporters in general.
- Volunteerism to be supported.
- Encourage positive attitudes among mobile learning consumers.

5.4.4 TO THE CLASSROOM TEACHERS

- Maintain a non-discriminatory classroom environment
- Shall modify the digital instructional strategies to accommodate mobile learning

5.4.5 TO THE PSYCHOLOGISTS

Emphasize the value of mobile learning in the realm of inclusion to the parent. Raise awareness in order to better care for these youngsters.

5.4.6 TO THE TLM DEVELOPERS

- Ensure that TLM is accessible to Digi users, with appropriate adaptations and supplements.
- Its resourcefulness in use makes it imaginative.

5.4.7 TO THE PARENTS

- Will increase the children's self-assurance.
- Neither overprotection nor carelessness are acceptable.
- Treat everyone equally
- Prepare yourself for technical problems.
- Make connections and advocate for your children's needs**.**

5.5 CONCLUSION

It does not take long to transform a classroom into an inclusive environment. Inclusion does not imply that kids with disabilities should be placed in general education classes. This requires a significant transformation in how the community supports and

responds to each child's individual needs. Because all instructors are multi-talented by nature, the supplements offered to them in regular classrooms are less approachable. This study is a modest fire towards the worldwide trends that must happen in the future. Learning can be done anywhere, anytime, at any cost, and in any situation thanks to the digital era's guide gadget (Mobile phone). Throughout the Indian educational system, mobile learning has zero rejection.

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ANNEXURE - I

PERSONALLY IDENTIFIABLE INFORMATION BANK		
Email		
Name		
Age		
Gender	Male	Female
Persons with Disability .If yes kindly mention your disability	Yes	No
Name of the Institution you are Studying		
Programme	B.Ed	
	M.Ed	
	Ph.D	
Area of Specialization	B.Ed Mathematics	
	B.Ed English	
	B.Ed Physical Science	
	B.Ed Biological Science	
	B.Ed Economics	
	B.Ed Home Science	
	B.Ed Special Education (Hearing Impairment)	
	B.Ed Special Education (Visual Impairment)	
	B.Ed Special Education (Intellectual Disability)	
	B.Ed Special Education (Learning Disability)/SLD	
	M.Ed (General Education)	
	M.Ed (Special Education)	
	Others	
Have you handled students' with disabilities	Yes	No
Location	Urban	Rural

ANNEXURE-II	
GENERAL INFORMATION	
Email	
Name	
Age	Below 35 Above 35
Gender	Male Female
PROGRAMME	B.Ed Mathematics B.Ed English B.Ed Physical Science B.Ed Biological Science B.Ed Special Education (Hearing Impairment) B.Ed Special Education (Visual Impairment) B.Ed Economics B.Ed Home Science M.Ed General Education M.Ed Special Education Ph.D Scholars
PROGRAMME YEAR	2020-2022 2021-2023
Location	Rural Urban
SURVEY ON M-LEARNING/MOBILE LEARNING	
Are you using M-Learning	Yes No
If Yes, What are the purposes?	To learn the curriculum To learn beyond the curriculum To teach Students/Children To update current affairs To clarify /equip /understand a particular issue Others

The list of M-Learning Video Conferencing Applications you use	Google Meet Zoom Skype Microsoft Teams WebEx Whatsapp YouTube Others
The list of M-Learning Tools you use	Google Docs Google Slides Google Classroom WhatsApp Telegram Swayam Coursera Diksha Jam board Canva Prezi Padlet Kinemaster Screen Recorder Others
The list of M-Learning Tools for Assessment you use	Google Forms Kahoot Quizizz Mentimeter Nearpod Edpuzzle

ANNEXURE –III(a)

Name:

Programme:

SECTION -1

GOOGLE MEET

The Video Communication Tool

1. How confident are you in using Google Meet for teaching and learning?

Extremely Confident –Go to Section -II

Very Confident-Go to next Section –I(a)

Moderately Confident- Go to next Section –I(a)

Slightly Confident- Go to next Section –I(a)

Not Confident- Go to next Section –I(a)

SECTION -1(a) (Remedial Package)

Google Meet -Remedial Package (Video Link –Own YouTube Channel)

SECTION –II

GOOGLE SLIDES

An online presentation app

2. How confident are you in using Google Slides for teaching and learning?

Extremely Confident –Go to Section -III
Very Confident-Go to next Section –II(a)
Moderately Confident- Go to next Section –II(a)
Slightly Confident- Go to next Section –II(a)
Not Confident- Go to next Section –II(a)

SECTION -1I (a)

SECTION –III

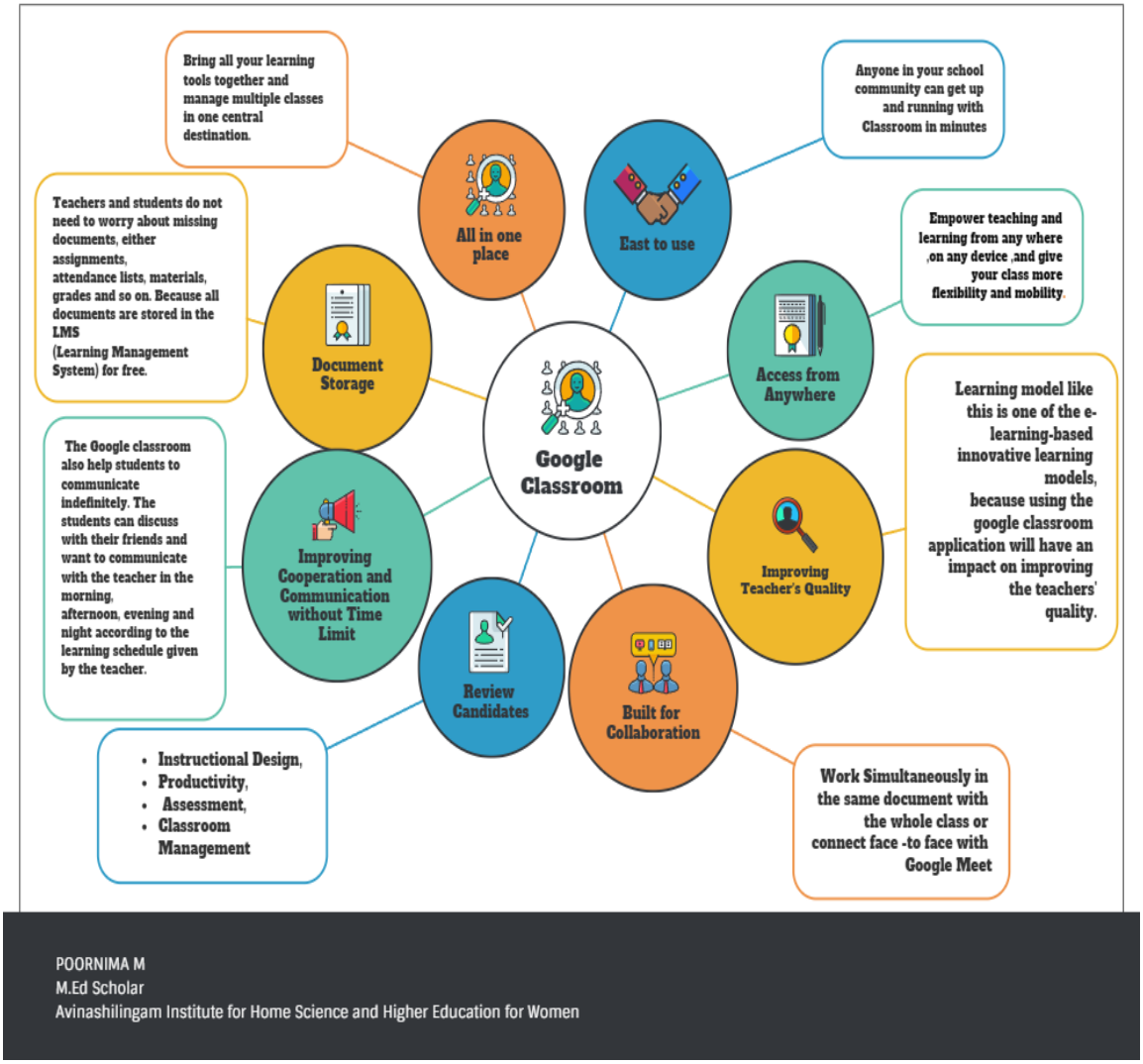
GOOGLE CLASSROOM

Google Classroom is a free blended learning platform.

3. How confident are you in using Google Classroom for teaching and learning?

Extremely Confident –Go to Section -IV
Very Confident-Go to next Section –III(a)
Moderately Confident- Go to next Section –III(a)
Slightly Confident- Go to next Section –III(a)
Not Confident- Go to next Section –III(a)

SECTION –III (a)



SECTION –IV

GOOGLE FORMS

Google Forms is free online software that allows you to create surveys, quizzes.

4. How confident are you in using Google Forms for teaching and learning?

Extremely Confident –Go to Section -V

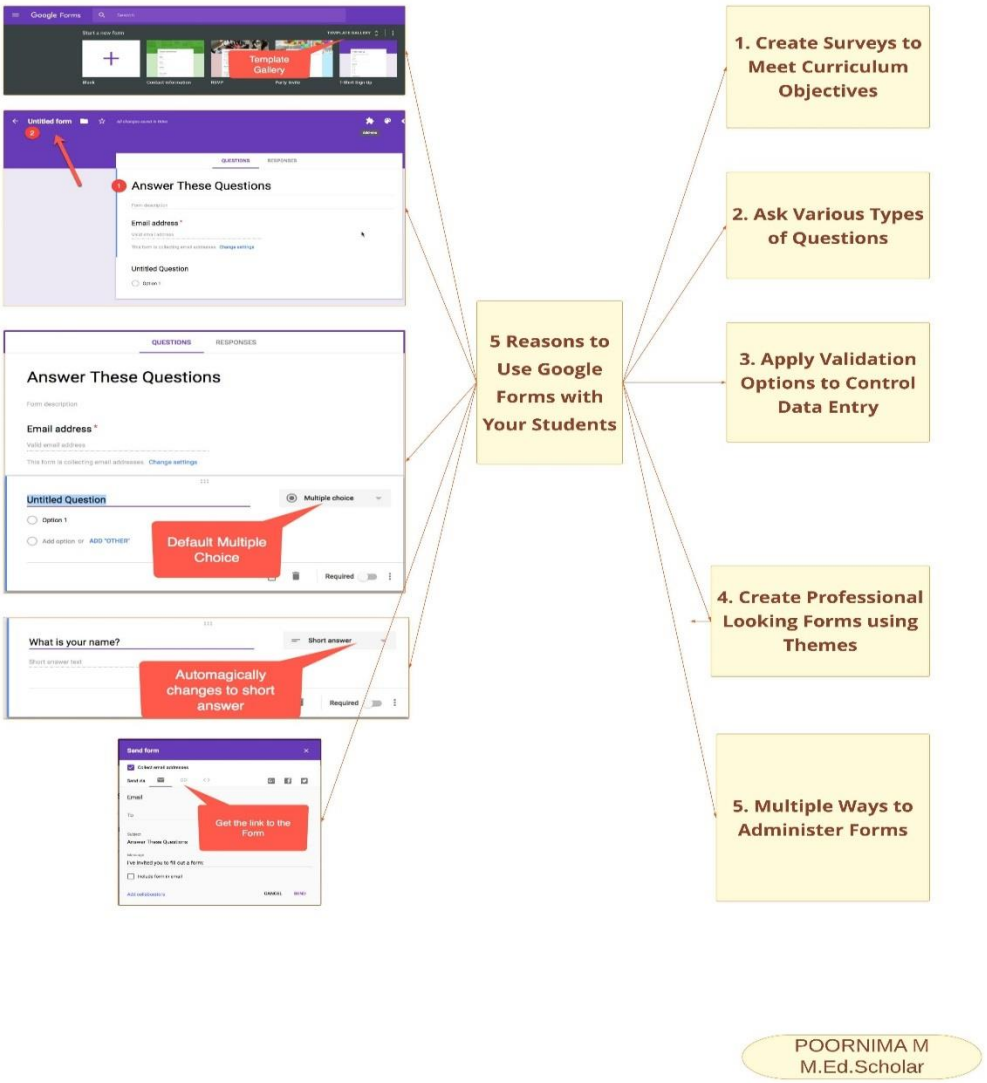
Very Confident-Go to next Section –IV(a)

Moderately Confident- Go to next Section –IV(a)

Slightly Confident- Go to next Section –IV(a)

Not Confident- Go to next Section –IV(a)

SECTION –IV (a)



SECTION –V

JAM BOARD

Jam board is a digital interactive whiteboard.

5. How confident are you in using Jam Board for teaching and learning?

Extremely Confident –Go to Section –VI

Very Confident-Go to next Section –V(a)

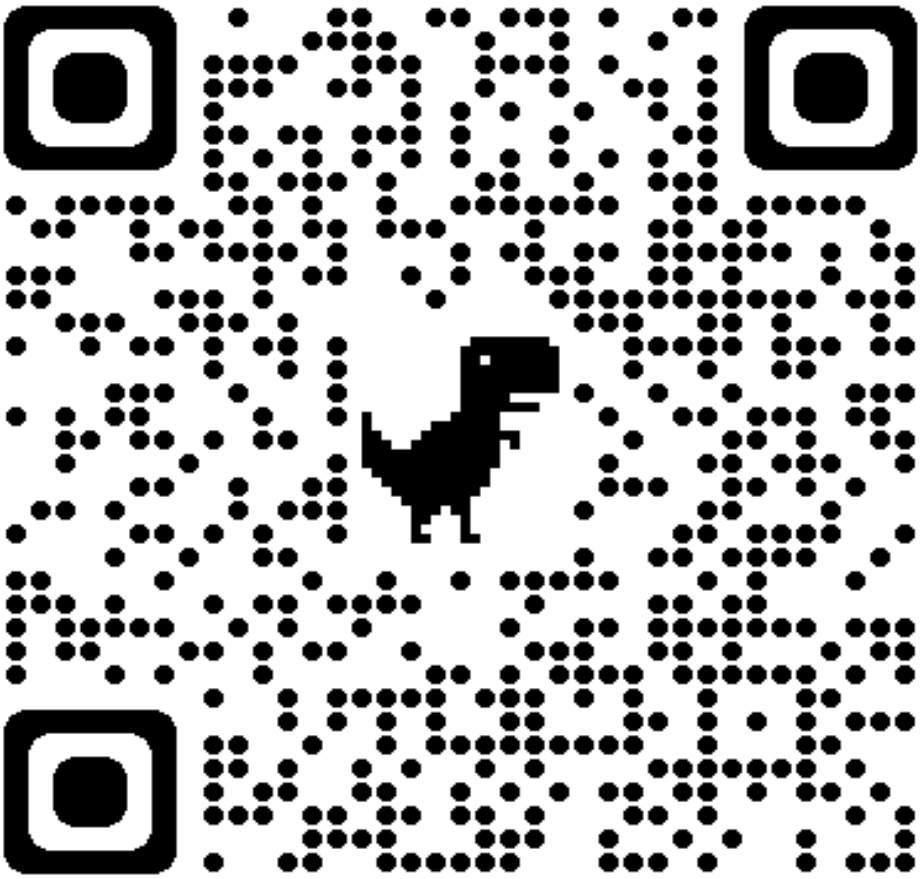
Moderately Confident- Go to next Section –V(a)

Slightly Confident- Go to next Section –V(a)

Not Confident- Go to next Section –V(a)

SECTION –V(a)

Jam board -Remedial Package (Video Link –Own YouTube Channel)



SECTION – VI

WHATSAPP

WhatsApp -learning tool that supports free voice and video calls so teachers and students can stay in touch, even outside stipulated study periods

6. How confident are you in using WhatsApp for teaching and learning?

Extremely Confident –Go to Section -VII

Very Confident-Go to next Section –VI (a)

Moderately Confident- Go to next Section –VI (a)

Slightly Confident- Go to next Section –VI (a)

Not Confident- Go to next Section –VI (a)

SECTION – VI(a)

SECTION - VII

QUIZIZZ

Quizizz is a gamified student engagement platform.

7. How confident are you in using Quizizz for teaching and learning?

Extremely Confident –Go to Section -VIII

Very Confident-Go to next Section –VII (a)

Moderately Confident- Go to next Section –VII (a)

Slightly Confident- Go to next Section –VII (a)

Not Confident- Go to next Section –VII (a)

SECTION – VII (a)

SECTION -VIII

SCREEN RECORDER

Screen recording software that turns screen output into a video to teach an application or to promote a product by demonstrating features.

8. How confident are you in using Screen Recorder for teaching and learning

Extremely Confident –Go to Section -IX
Very Confident-Go to next Section –VIII (a)

Moderately Confident- Go to next Section –VIII (a)

Slightly Confident- Go to next Section –VIII (a)

Not Confident- Go to next Section –VIII (a)

SECTION –VIII (a)

SECTION-IX

Submit the Form

Thank you

NOTE:

*After Remedial Intervention Package process the sample automatically goes to the next section.

ANNEXURE –III(b)

Name:

Programme:

GOOGLE MEET

The Video Communication Tool

1. How confident are you in using Google Meet for teaching and learning?

Extremely Confident

Very Confident

Moderately Confident

Slightly Confident

Not Confident

GOOGLE SLIDES

An online presentation app

2. How confident are you in using Google Slides for teaching and learning?

Extremely Confident

Very Confident

Moderately Confident

Slightly Confident

Not Confident

GOOGLE CLASSROOM

Google Classroom is a free blended learning platform.

3. How confident are you in using Google Classroom for teaching and learning?

Extremely Confident

Very Confident

Moderately Confident

Slightly Confident

Not Confident

GOOGLE FORMS **Google Forms is free online software that allows you to create surveys, quizzes.**
4. How confident are you in using Google Forms for teaching and learning?
Extremely Confident Very Confident Moderately Confident Slightly Confident Not Confident
JAM BOARD **Jam board is a digital interactive whiteboard.**
5. How confident are you in using Jam Board for teaching and learning?
Extremely Confident Very Confident Moderately Confident Slightly Confident Not Confident
WHATSAPP **WhatsApp -learning tool that supports free voice and video calls so teachers and students can stay in touch, even outside stipulated study periods**
6. How confident are you in using WhatsApp for teaching and learning?
Extremely Confident Very Confident Moderately Confident Slightly Confident Not Confident
QUIZIZZ **Quizizz is a gamified student engagement platform.**

7. How confident are you in using Quizizz for teaching and learning?
Extremely Confident Very Confident Moderately Confident Slightly Confident Not Confident
SCREEN RECORDER **Screen recording software that turns screen output into a video to teach an application or to promote a product by demonstrating features.**
8. How confident are you in using Screen Recorder for teaching and learning
Extremely Confident Very Confident Moderately Confident Slightly Confident Not Confident

Thesis Poornima 20.05.2022

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