Educational Learning And Teaching Technology

Rashmi Mehrotra

EDUCATIONAL LEARNING
AND TEACHING TECHNOLOGY

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CONTENTS

CHAPTER 1

EXPLORING THE MULTIFACETED IMPACT OF EDUCATION TECHNOLOGY ON TEACHING AND LEARNING

Rashmi Mehrotra, Professor
College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India,
Email Id- rashmi.tmu@gmail.com

ABSTRACT:

Education technology, or edtech, has emerged as a transformative force in modern education, reshaping traditional learning paradigms through the integration of digital tools, platforms, and resources. This paper explores the multifaceted impact of education technology on teaching and learning. It delves into various aspects of edtech, including online learning platforms, interactive resources, artificial intelligence, and personalized learning experiences. Through the examination of case studies and research findings, this study investigates how education technology has expanded access to education, enhanced pedagogical approaches, and empowered learners with 21st-century skills. The paper underscores the potential of education technology to drive meaningful change in education while acknowledging the challenges and considerations that accompany its implementation. Education technology is not a replacement for educators but a tool that can amplify their impact. By blending the best of both digital innovation and human interaction, education can create a holistic learning environment that fosters critical thinking, collaboration, and lifelong learning skills.

KEYWORDS:

Adaptive Learning Platforms, Blended Learning Environments, Collaborative Online Tools, Digital,E-Learning Platforms.

1. INTRODUCTION

The operation of society is governed by education, which is a crucial and essential component of society. It has a strong affinity with the goals and aspirations of every culture. This is why each social change that occurs in our community has an impact on schooling. Therefore, in the contemporary environment, each technological progress has an effectdirect or indirecton the educational technique.In general, the delivery of education and instructional materials to pupils involves active engagement and involvement from radio, television, computers, machines, films, and now the Internet and multimedia. Technology used in teaching is what this is known as. The potential of educational technology to meet desired objectives connected to making education universal, training teachers, and enhancing curriculum in every step of education has enhanced its relevance[1], [2].

Any learning system that adopts or adapts itself to techniques, procedures, and goods to further certain educational objectives is said to be using educational technology. This entails methodically identifying the educational objectives, acknowledging the variety of learners' requirements, the settings in which learning will occur, and the range of supports required for each of them. Designing adequate teaching-learning systems that can support and facilitate the achievement of the defined objectives is the difficult task. Understanding the role of educational technology as a change agent in the classrooma role that encompasses not just the teacher and the teaching-learning process but also systemic concerns like reach, equality, and qualityis essential to overcoming this difficulty[3], [4].

In India, instructional technology has followed two different paths throughout the years: The first featured several experiments targeted at raising the caliber of schools, using a systems

approach to examine the issues affecting the specific circumstance, and produced a variety of remedies. These have included the creation of adaptable systems, alternate curriculum, multilevel class structure, inexpensive teaching-learning resources, creative activities, and ongoing support networks for teacher education. Even though many of these trials showed inherent value, they were only able to have a little impact on the localized areas of rigorous practice. The second is government-sponsored initiatives like the Educational Technology Scheme, Computer Literacy and Studies in Schools, and modern equivalents, including collaborations with major international companies. This includes the provision of color TVs, microcomputers, modern computer laboratories, radio cassette players, and even satellite receiving terminals. These programs have mostly continued to be distributed, supply-driven, and centered on equipment. Despite obvious indicators of the need for this action, little attention has been given to the construction of the full support structure that would establish educational technology as a trustworthy, pertinent, and timely intervention.The definition, range, significance, and goals of instructional technology are covered in this book. It also emphasizes how crucial assessment and research are to the development and use of software, hardware, and other resources in the area of educational technology. The numerous phases, levels, and teaching approaches covered in this book, Educational Technology, will assist students better understand the teaching-learning process idea.

This self-instructional book, titled Educational Technology, is broken down into five sections. An overview of the unit objectives is presented after an introduction to the subject. The information is then given in a clear and understandable way, with Check Your Progress questions inserted here and there to gauge the reader's comprehension of the subject. At the conclusion of each course, there is also a list of exercises and questions that contains both short- and long-answer questions. For students to effectively summarize the book, the Summary and Key Terms are helpful resources. History has shown that technology enhances a teacher's hands and improves the effectiveness of his or her instruction. Technology has benefited education in a variety of ways and to varying degrees. Technology has affected education and training from a social and economic perspective. By simply following technology trends, education might stay up and avoid the expenses and uncertainty of creation. The Internet, interactive TV, computer conferencing, and other contemporary media are only a few of the educational institutions in industrialized and developing nations that are now providing courses via different communication technologies. Now, several distant learning and open learning institutes in poor nations now offer courses online. As a consequence, many students are continuing their education via technology[5], [6].

In such circumstances, it becomes imperative for everyone working in the area of education to be knowledgeable about the intricacies of using technology in the classroom. In addition, it is commonly known that some professors enjoy using innovative methods and approaches, while others prefer using the more traditional ones. To improve the effectiveness of the learning process, instructors and academics have created a variety of strategies, procedures, and tools throughout the years. For educational technology to be successful, scientific methodologies, media, and procedures must be developed and used to improve teaching and learning. You will learn how to describe instructional technology in this lesson as well as how to evaluate its nature and scope as well as identify its numerous forms. There is no way to dispute the impact of technology on all facets of our life in the 21st century, which has been dubbed the age of knowledge. The technology revolution has had a significant influence on education just as it has on other disciplines. The term "educational technology" refers to this fusion of education and technology. Some people only relate the phrase "educational technology" with the technological tools and media used in education, such computers, televisions, and overhead projectors. Others hold the opinion that educational technology

entails a methodical and scientific investigation of the teaching and learning process with the goal of maximizing its efficacy. Understanding the term "technology" is crucial before continuing. The term "technology" was derived from the Greek word "technologia," which means "an art" and is associated with talent and dexterity. In general, the word "technology" refers to the methodical application of scientific knowledge to real-world activities in business. Systems, organizational methods, and procedures are only a few of the subjects that fall under the umbrella term "technology," which may also refer to tangible items like hardware or equipment.According to D. Randy Garrison, technology will be seen as having both a process and a product component in the context of education. The process will involve the innovative application of knowledge to specific purposes. Media, which are the tools used to disseminate information, is a subset of hardware. Thus, the term "technology" as it pertains to education has a broader definition. Furthermore, it would be incorrect to equate the word "teaching" with the act of instructing, educating, imparting information, or practicing engineering. This innovation in teaching doesn't cut corners and has excellent long-term potential. It will continue to be detrimental to the wellbeing of a free society for anybody who is continually pursuing knowledge otherwise[7], [8].

2. DISCUSSION

Educational technology I

This definition relies on psychotechnology to improve a learner's capacity by directly or indirectly modifying sensory input. The many issues with educational psychotechnology include evaluating students' abilities based on diagnoses, defining educational goals, choosing or prescribing the guidelines for communication, resources, or activities, and evaluation. It encompasses all techniques for controlling how others learn in order to produce a set of desired behaviors. Controlled learning is crucial since the learner is the main focus. This connotation is consistent with the job title of learning consultant.

Educational technology II

This definition places an emphasis on the design, production, and evaluation of learning materials and communications for local or large dissemination. Focus is placed on producing, choosing, processing, and storing information for educational purposes and information retrieval. This will increase knowledge accessibility. This interpretation fits the function of a supplier of instructional materials.

Educational technology III

Education resource organization is emphasized in this concept of educational technology III. These materials include related tasks such system analysis, planning, programming, budgeting, management, and decision-making. For man-machine systems, organizational technology offers practical decision-making processes, information systems, and organizational theory. Theoretical and empirical research both support this idea of instructional technology. Therefore, management of learning resources is consistent with this definition.

Fourth-generation educational IV

This idea relates to activities like creating, outlining, building, and assessing educational systems. The administration, operations, extracurricular, and alternative educational systems are of interest to the person who develops educational systems. It could create and implement a computer-aided training system or sui courses.

Technology education V

This definition focuses on supra-institutional or national planning. Primarily, non-educators work in this profession. Economic considerations connected to the function performed by the educational planner cast a shade over their belief in alternative educational alternatives.The basic and core idea behind educational technology is represented by its fivefold definition. Each of these categories may exist on its own while also being essential to others.

According to NCF, "educational technology is the efficient organization of any learning system, adapting or adopting methods, processes, and products to serve identified educational goals. This entails methodically identifying the educational objectives, acknowledging the diversity of learners' requirements, the environment in which learning will occur, and the variety of supports required for each of these.The most recent definition provided by AECT for educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources. In the opinion of Mangal & Mangal, educational technology "should stand for a wise application of available human and non-human resources for providing appropriate solutions to educational problems and to improve the process and products of education." The use of suitable tools, methods, or procedures that assist the use of senses, memory, and cognition to enhance teaching practices and increase learning outcomes is what Aziz Hap refers to as educational technology.The preceding definitions do a great job of illuminating the significant diversity in viewpoints among theorists and practitioners over what constitutes educational technology. These criteria originally included the whole spectrum of educational technology activities, including audio-visual communication and mass technology as well as ways of learning and teaching psychology.

Educational Technology's Nature

The history of instructional technology may be traced back to the emergence of the first instruments, such as cave drawings. But often, it starts with a documentary on education or one of Sidney Pressey's mechanical classroom simulators from the 1920s. Since then, it has evolved and taken on various forms, such as PowerPoint presentations with voiceover, hypertext. Bush's memex in the 1940s; Skinner's work, which resulted in "programmed instruction" in the 1950s; Computer Aided Instruction or Computer Assisted Instruction in the 1970s through the 1990s; and, most recently, Computer Mediated Communication, e-tutoring, and blended learning, among others. However, educational technology should not be mistaken with teaching, instruction, learning, or engineering; rather, it should be seen as the sum of all such factors that significantly contribute to the meaningful context-based personality development of the learner.

Additionally, as technology has evolved, so too have the design and purpose of instructional technologies. Despite the fact that the phrase has been in use for a while, it is still seen as having a complicated character. Educational technology is extremely adaptable and includes a cyclical process, a supply of tools, and a multiple-node interface, both between students and between them and the instructors who are facilitating their learning. Determine the goals of educational technology and make a distinction between "technology in education" and "technology of education" in order to comprehend the nature of educational technology. Understanding the elements of instructional technology is also necessary.

Today's educational landscape has dramatically improved. Both instructors and students now find learning to be simpler because to technology. The advancements in technology have touched schools and classrooms in addition to the everyday tools and appliances that people use. 'Technology in Education' and 'Technology of Education' are two terms that are often and

widely used interchangeably in this context. They are distinct even if they have a similar tone. The term "technology in education" describes the use of technological tools in the classroom. Here, the medium utilized to convey a message is given greater weight. It mostly focuses on electrical and electronic devices that aid in the teaching and learning process. This is an area that is always developing and is dependent on technical developments. Projectors, movies, television, tape recorders, teaching aids, teletext, and computer-aided instruction are just a few of the advanced audio-visual gear, equipment, and electronic gadgets that are used for both individualized and collaborative learning. Similar to how technology has improved every part of life, using technology in education offers numerous benefits. Technology in education may be used in a variety of ways to facilitate learning and teaching. For individuals who are interested in creating technical tools for educational reasons, it is also an area of study in and of itself.

Technology is always useful in education since it makes learning easier and faster for both professors and pupils.

If it is correctly structured and designed according to psychological and pedagogical principles, technology in education will be beneficial. The following are the goals of using technology in education: Providing the necessary tools, apparatus, and media for the accomplishment of various educational purposes and functions; Facilitating teacher training to handle and best utilize apparatus; Fostering a positive attitude among teachers and students toward apparatus; Demonstrating the relevance and use of apparatus in the context of individual and group learning in order to meet the objectives of formal education

The term "educational technology" refers to the deliberate use of things, methods, tools, events, and connections in conjunction with or apart from one another in order to further educational goals. Technology in education refers to the systematic application of technical knowledge resources that each person must go through in order to acquire and use knowledge. It establishes guidelines for educators' participation in the design and assessment of educational programs, requiring knowledge of information theory, communication theory, and learning psychology. It denotes a technology approach to the educational system, difficulties, and concerns. This technique is described as being suitable for learners' requirements, learning goals, the teaching and learning process, as well as resource availability[9], [10].

The phrase "technology of education" also refers to choices made about several facets of education, such as the size of learning groups, the order of lessons, the techniques of instruction, and the media to be used. It also includes the sensible planning, designing, production, administration, and assessment of the educational process. This includes the use of media, information, ideas, and both human and non-human resources. In other words, it encompasses the whole goal-setting process as well as ongoing curriculum renewal, the application of new techniques and materials, system assessment, and goal-resetting in response to changing conditions.

'Technology of education' and 'technology in education,' according to Saettler, are two different things.

He claims that the former is an idea from behavioral science while the later is an idea from machine conception of educational technology. 'Technology in education' includes radio, television, OHP, computers, and tape recorders. 'Technology of education', on the other hand, refers to radio and television programs, computer programs, and OHP transparencies that are founded on scientific understanding of education.

Technology in Education Components

The three basic components of educational technology as a concept are stated by S. P. Ruhela in his book Educational Technology; each component has a specific function to perform throughout the educational process. The three parts are as follows:

Methods

In teaching-learning scenarios, using a few tools including programmed learning, team teaching, micro-teaching, and tailored systems of education.

Materials

These include written/printed materials such as textbooks, manuals, guides, and other educational materials that are programmed.

Media

This term refers to the use of audio, visual, or combined audio-visual and visual teaching aids in the classroom, including radio, tape recorders, charts, maps, posters, films, and instructional television.

Additionally, human resources are a crucial part of educational technology, which weaves a web of practices, resources, and media. In light of this list of educational technology components, the idea of educational technology has to be understood from the standpoint of education as a whole. It is a comprehensive technology that is linked to all facets of the educational process, including method selection, instructional strategies, learning material selection, use of appropriate aids, and instruction in the operation and handling of various equipment to ensure better performance on the learner's part. According to AECT, "educational technology" is a wide notion that includes both the instructor and the student as well as the learning process and its end result. The primary goal of educational technology as a mission is to reach as many people as possible in society. Greater psychological and pedagogical readiness, a scientific outlook, and a coordinated approach to the educational process as a whole are requirements of educational technology. It exhibits a keen interest in innovation and experimentation from a professional perspective for the advancement and success of education.The following are some of the salient features of educational technology:

- It is a science of tactics and procedures that aid in achieving objectives.
- It involves applying the corpus of information.
- It benefits from the rules and research of fundamental social and physical disciplines including engineering, psychology, and sociology.
- Its goal is to make teaching and learning conditions better.
- It is a functional examination of the teaching-learning process and it identifies several components that function from the input stage to the output stage.
- Its nature is dynamic and forward-thinking.
- It views education as a system of well-planned inputs, procedures, and outputs.
- It does not replace a teacher's job.
- It serves as a tool to achieve certain set objectives rather than being an end in itself.
- Although it doesn't address every issue, it aids in the improvement of educational training and teaching methods.
- All branches, innovations, ideas, and strategies should be integrated as a whole in accordance with the goals and requirements of the system that educational technology represents; it cannot be understood in terms of its components or processes.

In essence, one may argue that the use of educational technology to the teaching-learning process has as its primary goal the improvement of the system's effectiveness. In other words, effective and efficient teaching and learning may be achieved with the use of educational technology. Practitioners must use caution when choosing their medium, techniques, and resources. NCF provides the following explanation: "The key concepts in ET are appropriate technology, that is, appropriate to the task at hand for achieving specific educational objectives, and the organization of all available resources into a workable system, which is checked repeatedly to ensure that it is appropriate and changed where it is not working. It is essential that the media choice correspond to instructional design as well as to what is accessible and very useable when applying the discipline of ET to the area of education.Additionally, educational technology should be seen as something that offers quality value and is relevant and suitable rather than merely as a topic. Additionally, it transforms education by making it dynamic and responsive and by piquing students' interest and desire to learn.

3. CONCLUSION

In conclusion, Education technology has become a potent force multiplier for changing the face of education. Its incorporation has created new learning opportunities, transcended regional boundaries, and allowed students of all ages to have access to high-quality education. Technology's capacity to adapt and be personalized has the potential to engage kids in ways that weren't previously possible. Nevertheless, much preparation and effort must go into the proper integration of educational technology. It is crucial to provide equal access to technology, manage privacy issues, and maintain academic rigor. Additionally, teachers are crucial in using the potential of technology to improve teaching and learning.

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CHAPTER 2

INVESTIGATING THE TYPES OF EDUCATIONAL TECHNOLOGY

Naheed Bi, Assistant Professor
College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India, Email Id-
naheedbi555@gmail.com

ABSTRACT:

The realm of educational technology encompasses a diverse array of tools and resources that have revolutionized teaching and learning across various contexts. This paper explores the different types of educational technology, ranging from digital platforms and software to hardware devices and immersive experiences. By categorizing and analyzing these technologies, the study investigates how they enhance instructional methodologies, engage learners, and foster skill development. Through the examination of case studies and educational research, this paper highlights the significance of understanding the varied types of educational technology and their potential impact on education. Education technology is not a one-size-fits-all solution. The diverse range of types reflects the diverse needs of learners, educators, and educational contexts. By embracing a mix of educational technologies and tailoring their integration to specific goals, educators can create dynamic learning experiences that prepare students for the demands of the modern world.

KEYWORDS:

Adaptive Learning, Blended Learning, Cloud Computing, Digital Assessment, E-Learning, Interactive Content.

1. INTRODUCTION

Simple variety of technology, media, and instructional resources aid instructors in creating and delivering their courses in conventional classrooms more successfully. They also include highly developed apparatuses and processes that fundamentally alter the design and environment of classroom instruction. Many technology tools and resources may be helpful for teaching as well as for managing the administrative data required in contemporary mass education. Thus, there are several sorts of educational technology. Its only objective is often to improve the effectiveness and efficiency of existing procedures. But sometimes pedagogical changes are brought about by educational technology. Although it may be considered a design science, it also addresses the fundamental issues of teaching, learning, and social structure. As a result, it incorporates all aspects of contemporary social science and life science approach. Technology in education serves as both a tool and a catalyst. Teaching technology, behavioral technology, and instructional technology are the three categories of educational technologies that are most often used[1], [2].

Educating in Technology

A talent is teaching. The use of technology in the classroom makes this skill more straightforward, precise, usable, and impartial. To accomplish the required learning goals, this kind of instructional technology relies on understanding of philosophy, psychology, and science. Content and classroom interaction are two crucial aspects of teaching. Teaching technology is made up of two components: content and interactivity. Additionally, modern education places more emphasis on the student than the instructor. Consequently, a psychological examination of the learner is required. Thus, education is both psychologically and scientifically based. The educational system supports the teacher's decision-making. Additionally, it develops a feeling of professionalism that gives one credibility. The training

of teachers, developing instructional policies, and teacher management goals are all included as crucial changes to the concept of teaching. The kind of educational technology known as teaching technology focuses on streamlining the teaching process[3], [4].

Technological Assumptions for Teaching

The following presumptions form the foundation of teaching technology:

2. The method of instruction is scientific

3. Lesson plans may be changed as necessary.

4. Teaching activities may help students meet predetermined learning goals.

5. It is possible to build a reciprocal link between teaching and learning.

6. Optimal learning environments may be established.

Technology used in education has several features.E. G. Vedanayagam has compiled a summary of the qualities and core ideas of educational technology. These are listed below:The three main pillars of effective teaching are content, communication, and feedback. Teaching and learning are closely related to one another. You may change, enhance, and create teaching-learning activities. An effective teaching environment may determine the learner's final behavior in terms of learning frameworks. With or without advanced methodologies, feedback devices may be used to build and grow teaching abilities. Designing appropriate teaching strategies may help students meet predetermined learning goals. The employment of achievement motivating techniques improves student and instructor production. The curriculum is rapidly evolving in the domain of technology. Technology has created a need for a whole new set of knowledge and abilities in teaching, both for students and beginner instructors as well as for those who are more experienced[5], [6]. The substance of teaching technology is described by Davies in four phases in his book Management of Learning: planning, organization, leading with teaching, and control. The following are covered in detail:

Teaching planning

During this stage, the instructor studies the subject matter, selects and specifies the learning goals, and then clearly documents these objectives in writing. He completes the following three tasks during this phase: task analysis, determining the purpose of teaching, and writing out learning goals. Planning is the effort a teacher performs to develop learning goals, according to I.K. Davies. Arrangement of the lesson: The instructor creates an effective environment throughout this phase. This is accomplished through choosing the right instructional methods, strategies, tactics, and advantages. Teaching while leading: At this point, the instructor serves as a motivator for the pupils. In every point of this stage, they demonstrate interest in the teaching and learning goals. According to I. K. Davies, "leading" is the effort a teacher undertakes to inspire, motivate, and motivate pupils so that they easily attain the learning goals.

Control over instruction

The planned and outlined goals of learning remain unchanged at this point. The introduction of any modification is not included in this stage. To ensure that the planned objectives are met, the instructor does examine the prospect. The instructor enlists assistance for completing this outstanding undertaking by using several ways for validating and measuring measurements. If the instructor determines that the learning goals have not been met, it is his responsibility to make the necessary changes to the organization's behavior[7], [8].

Behavioural Technology

A key element of educational technology is behavioral technology. It highlights the need of incorporating psychosomatic principles throughout instruction. The goal is to alter both instructors' and students' behavior such that it more closely resembles the educational goals. Psychology is a prerequisite for this kind of instructional technology. The goal of the educational and learning processes is to bring about lasting changes, and behavior is their main emphasis. With the goal of bringing about positive behavioral changes, learners are exposed to a variety of learning situations. Here, behavior would refer to a person's cognitive, conative, and emotional actions. As a kind of educational technology, behavior technology is used to examine and alter the behavior of all learning organisms. Using his "theory of operant conditioning," B. F. Skinner helped make this word more common. He used the notion to change how learning creatures behaved as he had hoped. Behavioural technology in the field of education and learning focuses on the conduct of instructors. As a result, it is also sometimes called "training psychology." Using the concepts of operant conditioning and observational learning, the role of behavioural technology in schools has nearly come to be synonymous with behavior analysis and change. In other words, behavioral technology concentrates emphasis on the use of psychologically oriented concepts in the teaching and learning processes. By doing this, the behavior of the instructors and students is modified to fit the teaching style. The goal of behavioral technology is to accelerate the improvement of behavior and learning[9], [10].

Learning Technologies

When scientific knowledge and communication are employed in the classroom, a technology evolves. When physical sciences and education intersect, we are given access to both conventional tools and resources like paper, ink, books, radios, movies, and TVs as well as more advanced, cutting-edge stuff like computers, satellites, and language labs. The three most significant factors that are focused on the relationship between instruction and technology, according to Stoluraw's theory, are the world's population explosion, the exponential rate at which new knowledge is disseminated, and changes in our current social structure brought about by science and technology. The technology of instructions, according to Robert A. Cox, is "the application of scientific process to man's learning conditions." According to E. E. Haden, instructional technology is the area of educational theory and practice that is mainly concerned with the creation and application of messages that regulate the learning process. Instructional technology, according to Unwin's definition, is "the application of modern skills and techniques to requirements of education and training." This covers the manipulation of media and instructional techniques as well as environmental management in order to facilitate learning.

S. M. McMurin provided another widely used and recognized definition of instructional technology, stating that it is "a systematic way of designing, carrying out, and evaluating the total process of learning and teaching, in terms of specific objectives based on research, human learning, and communication." For more effective education, a mix of human and non-human resources are used. According to AECT, "the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning" constitutes instructional technology.

In the current environment, educational technology is largely required to advance teaching, learning, and the assessment process. In a specific teaching-learning setting, this kind of educational technology is intended to support the teacher and the student in the desired instructional task for the accomplishment of stated instructional goals. In other words, the emphasis is on improving the teaching methodology.The use of multiple tools, strategies, and

expertise in the creation and delivery of outcomes is suggested by instructional technology. Together, they provide practical ways to achieve educational goals. Understanding and paying attention to:

- Where instructions will be delivered
- The methods and equipment used to give instruction
- When to use these tools
- Creating and delivering effective educational experiences
- Appropriate content and distribution techniques
- The ideal location for education
- Assured expectations were met

Only as technology advances will the area of instructional technology expand. By removing barriers and issues that the education industry now faces, technology will aid in the effective delivery of education. This kind of educational technology is becoming more and more popular because instructional technologists assert that it may provide effective learning with less time and money spent than previous methods.

2. DISCUSSION

Hardware Approach

The hardware approach indicates that mechanical tools and supplies will be used in the field of education. Hardware includes charts, models, filmstrips, slides, audio cassettes, and complex devices like projectors, radios, tape recorders, record players, televisions, televisions with video, teaching aids, computers, etc. The hardware method is centered on integrating engineering and physical science ideas into instruction and training. This approach progressively automates the teaching process in order to educate the greatest number of students in the shortest amount of time and at the lowest possible cost. The scientific and technical advancements of the 20th century gave rise to this method.

It should be mentioned that teaching machines are the only mechanical aids that were purposefully created and produced to meet educational needs. All other audio-visual aids were created and produced with the intention of enhancing the communication system, but they are now used for educational reasons. The introduction of mechanization is intended to promote, transmit, and preserve human knowledge. For example, a teacher may speak to a large class of pupils through radio or television. As a result, educational and training systems can handle a larger number of students, and the hardware-based approach to education has decreased the cost per student. This kind of instructional technology is known as "relative technology," according to Silverman. This entails obtaining and using machinery, equipment, and technology in the process of instructing and learning. In this setting, instructional technology performs the straightforward "service" role.

The 'Audio-visual Archetype' is what Ivor Davies refers to as this method. This method places a strong emphasis on the use of tools, machinery, gadgets, and other such teaching aids. This strategy emphasizes the instructor and his or her lessons. Technology is seen as a way to mechanize or automate the teaching process using tools that transmit, magnify, disseminate, record, and repeat stimulus materials and so boost the teacher's effect and broaden possible audience. This strategy was first created by the media in the 1930s. Following World War II, it rose to prominence. According to Davies, this 'audio-visual archetype' views audio-visual technology as having a variety of uses, including assisting presentations in the classroom and enhancing demonstrations by allowing access to reality or simulations of reality. These cannot be created by a teacher in such a short amount of time. However, this strategy has come under fire for the lack of cooperation in its implementation.

Software Method

The behavioural sciences and their practical applications pertaining to the psychology of learning are where the software approach or software technology of education has its roots. It was created as a result of Skinner and other behaviorists' engineering efforts. According to Arthur Melton, teaching software is closely tied to the psychology of learning, which includes changes in behavior brought on by experience. This perspective on educational technology is linked to contemporary teaching theories, models, theories of instruction, theories of teacher behavior, and concepts of programmed learning

In order to increase the efficacy and efficiency of teaching and learning, Leith said that "educational technology is the application of scientific knowledge about learning and the conditions of learning." Due to its constructive character, Silverman referred to software technology as constructive educational technology. The study of instructional difficulties, the choice or building of measuring instruments needed to assess instructional outcomes, and the choice or construction of methods and tactics to accomplish desired educational results are its core educational applications.

Ivor Davies refers to this strategy as the "Engineering Archetype," which uses behavioural science to improve learning. This method puts the student and the learning front and center despite the usage of hardware. Consequently, it is known as the software method. Technology is seen as a way of supplying the essential knowledge for creating brand-new learning experiences or updating the ones that already exist. Mechanization and machines are only seen as means of presentation or communication.The first software technique in the field of programmed learning emerged in the beginning of 1969. The results of Skinner's research on operant conditioning were this. This strategy was first used in the creation of products with sequential content. It quickly became a popular teaching tool and method for creating courses. It takes the shape of a set of instructions that must be followed, based on the engineering method. These processes include stating the inputs and defining the goals, examining and choosing the instructional techniques and resources in the intermediate steps, and evaluating and producing the results in the final step. Feedback is always a part of this process. Although ET1 was customarily launched after ET2, it is not to be considered as ET1's successful iteration. Both versions, which were independently developed and are still in use, exist.Physical science and applied engineering are where the hardware approach has its roots. The psychology of learning and related fields of behavioral science are where the software approach has its roots.

In order to create electro-mechanical equipment utilized for education, the concepts of physical sciences, engineering, and technology are used. It describes the use of teaching-learning techniques to intentionally and consciously shape behavior. It makes an effort to have a product-focused stance. It makes an effort to take a process-focused approach.

It facilitates improved educational objectives communication. By automating the teaching-learning process, it improves the effectiveness of instruction. It lowers the price of education while improving the effectiveness of educational resources.Both instructors and students benefit from an improvement in efficiency. It falls short, nevertheless, in terms of bringing down school costs. There are diagrams, models, slides, filmstrips, audio cassettes, high-tech devices like televisions, film projectors, tape recorders, record players, movies, instructional aids, and computers. It includes current educational models, theories of instruction, theories of teacher behavior, and ideas of programmed learning.

Hardware technology is concerned with the creation and use of advanced tools, media, and audio-visual aids to assist instructors and students get better outcomes. In order to create and

use software methods and materials for learning material, teaching-learning strategies, assessment tools, and other devices, software technology attempts to leverage the psychology of learning. Absent software to control how it operates, hardware is useless. In order for it to work, software technology is required. The hardware is functioning thanks to a software approach.

The preparation of hardware involves assembling several devices. The same hardware may be utilized in a variety of sectors, including business, entertainment, education, and government. 'Constructive instructional technology' is how Silverman described it. It focuses on the evaluation, choice, and production of everything required to satisfy just educational criteria. As a result, we may draw the conclusion that whereas the hardware method has its roots in applied engineering and physical sciences, the software approach is the product of behavioural sciences and their application to the psychology of learning.

Importance of hardware and software

- The following are some reasons why hardware and software are important in education:
- They help instructors and students make better use of their time, energy, and resources by accommodating students' unique variances.
- They make the topic matter more vivid and clear
- They support student motivation
- They support kids' interest growth and maintenance.
- They provide interest, appeal, inspiration, and effectiveness to the topic.
- They encourage students' active engagement

These elements of educational technology work hand in hand to advance education. Consequently, it is challenging to distinguish between their elements clearly. There is a program that goes along with every piece of hardware.It must be made clear that 1.2 is merely an indicative list of the components and not a comprehensive one. The list is extensive and keeps expanding as a result of the quick technical advancements occurring and the even quicker acceptance of these newer technologies in teaching and learning environments. It is vital to keep in mind that despite the development of new technologies, traditional ones continue to play a significant role in our educational system.

Assessing Educational Technology Using Systems

A systematic application of educational technology to a problem in education or training that starts with input and output and determines the optimum way to get from the former to the latter is referred to as a systems analysis or approach. An educational tool called a systems approach was created to change the educational experience from being intuitive, undefinable, and haphazard to one that is adaptable, comprehensive, rational, orderly, responsible, and self-correcting. The systems approach is distinctive in that it allows for the examination of the entire rather than just individual parts and encourages Gestalt thinking as opposed to fragmented thinking. The fundamental character of a system is shown by Aristotle's dictum that "the whole is greater than the sum of its parts.

A system is described as "Group of things or parts working together in a regular relationship" in the Advanced Learner's Dictionary of Current English.A system may be described as a dynamic, complex, integrated whole made up of a self-regulating pattern of interconnected and interdependent parts arranged to meet the predetermined and stated goals, according to A. K. Jalaluddin.A. Angyal characterized a systems approach as a holistic organization in Foundations for a Science of Personality as pieces of the system are organized in a manner that sets them apart from a basic collection of things.An integrated assembly of interacting

elements, designed to carry out cooperatively a predetermined function," is how Banghart describes a system. All systems are composed of constituent pieces known as sub-systems, which are elements of a higher-level system known as the supra-system. Systems Approach in Education uses a simple system to explain how a dynamic system's efficiency is affected by inputs and outputs. It is a dynamic arrangement of interconnected components arranged in a meaningful pattern, and any modification to one of these components may have positive or negative effects on the system's overall performance.As it relates to education, the systems approach is a method of rational problem-solving that examines the educational process as a whole, taking into account all of its components and aspects, including the students and teachers, the curriculum content, the instructional materials, the instructional strategy, the physical environment, and the evaluation of educational objectives. In an essay, Vandana Mehra provides the systems model of the educational process as it is described. According to the, an educational system's input consists of people, resources, and knowledge, and its output consists of individuals whose performance has improved in the desired manner. The output is enhanced by making the educational process more effective in order to optimize the absorption of information and skills throughout the educational process and, as a result, the product's quality.

3. CONCLUSION

In conclusion, the field of educational technology offers a variety of options, with each kind providing unique benefits and chances to further education. Flexible learning is made possible by digital platforms and online resources, giving users access to a plethora of knowledge from any location at any time. Individual requirements are catered for in learning experiences thanks to the active participation and personalization fostered by interactive software. Hardware-based learning environments, such those offered by virtual reality headsets and tablets, are immersive and participatory, improving understanding and retention. However, much thought must go into the choice and integration of instructional technology. Technology decisions made by teachers must be in line with their students' requirements, pedagogical principles, and learning goals.

Additionally, for implementation to be successful, educators must be skilled at maximizing the potential of these technologies. This requires professional development and continuing support.

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CHAPTER 3

AN OVERVIEW ON MULTIMEDIA APPROACH IN EDUCATIONAL TECHNOLOGY

Gautam Kumar, Assistant Professor
College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India, Email Id-
gautamkumar.edu@gmail.com

ABSTRACT:

The multimedia approach in educational technology has emerged as a dynamic and impactful method of enhancing learning experiences. This paper explores the utilization of multimedia elements, such as visuals, audio, and interactive components, to enrich educational content and engage learners across various domains. Through the analysis of case studies and pedagogical research, this study investigates the multifaceted benefits of the multimedia approach in fostering understanding, retention, and motivation among learners. The paper also examines challenges related to technology integration and the importance of balancing multimedia elements to optimize their educational impact. As educational technology continues to evolve, the role of multimedia will undoubtedly grow. Leveraging the power of multimedia, educators can transcend the confines of traditional teaching methodologies, fostering a deep understanding of complex concepts and nurturing critical thinking skills. By harnessing the potential of the multimedia approach, education can become a dynamic and inclusive endeavor, equipping learners with the tools they need to succeed in a rapidly changing world.

KEYWORDS:

Mobile Learning, Online Collaboration, Personalized Learning, Remote Learning, Simulation, Virtual Reality (VR).

1. INTRODUCTION

The technical sophistication we currently possess, which profoundly influences our lives and also appears to offer a tempting promise for improving our educational effectiveness, is one of the most important factors for change in recent years. In the last 80 years, we have seen the development of radio, television, computers, communication lasers, sophisticated optics, films, wire and tape sound records, basic and complicated duplicating and copying machines, and steam-driven, high-speed rotary presses. This advancement in technology has given education access to an abundance of tools and resources that may help restructure and redefine learning experiences.

The majority of instruction in the past was based mostly on vocal exchanges between teachers and students or textual instructions given to students via printed sources. Today's kids are acquiring information, abilities, and attitudes via images, television, recorded speech, programmed lessons, and other media, despite the fact that these communication channels still play significant roles in the learning process. Dramatic changes often start as soon as technology is introduced into the school facility. A plain schoolhouse is transformed into a structured learning environment by the power of technology.Nowadays, there are many nations using electronic media in education. The usage is quite common in a few nations. However, the majority of technological tools and programs are designed with the requirements of the instructor in mind and used in the classroom as teaching aids. To put it another way, the majority of educators are using technology to address the query, "How can technology help the teacher?" But in a few places, the student's requirements are the main concern. There, instructors inquire as to how technology might benefit students[1], [2].

Technology is the driving force behind educational reform when the student is the center of focus. The educational process would be significantly affected if it were not there since technology is an essential component of a well-thought-out system, not just a teaching tool. 'Audio-Visual Aids', 'Educational Communication Technology', 'Audio-Visual Media', 'Learning Resources', and 'Instructional or Educational Media'. These phrases all have the same meaning. Previously, the phrase "audio-visual aids in education" was used. Teachers created new terminology as communication and technological advancements progressed. Media more particularly refers to records, videos, and filmstrips. The rapid rise of computer-assisted teaching, educational TV, and programmed learning has led to the usage of novel words such educational technology and instructional technology. The progress in electronics, particularly those involving the radio, tape recorder, and computer, is what led to this revolution in audio-visual education.The dynamic use and expansion of TV and other existing new developments in the field of audio-visual education, along with others, have led to the term "educational technology" or "instructional technology" replacing the older and perhaps more familiar term "audio-visual material" in the field of education[3], [4].

Visual and audio aids

Desiderius Erasmus, a Dutch humanist, theologian, and author, opposed memory as a method of learning and argued that children should learn via the use of images or other visuals. A book called Orbis Sensualium Pictus, created by John Amos Comenius, had 150 images depicting elements of daily life. The book is regarded as the first illustrated children's education textbook. This book received a lot of attention and was used in schools for young children all around the globe. The importance of images and other playthings was emphasized by Jean Jacques Rousseau and other educators. The use of words by instructors was criticised by Rousseau, who placed an emphasis on "things." He argued that the innate curiosity of the student should be tapped into throughout the teaching process. In his "object method," Pestalozzi put Rousseau's theory into practice. He used sensation to inform his teaching. Nelson I. Greene first coined the phrase "visual education" in 1926.Eric Ashby distinguished four revolutions in education: the transition from home to school, the use of the written word as a teaching tool, the creation of printing and the use of books, and finally the use of electronic media, such as radio, television, tape recorders, and computers. True intellectual education, in Gandhi's opinion, can only result through appropriate use of the hands, feet, eyes, ears, and nose. The Kothari Commission 1964–1966 said that the employment of audio-visual aids should, in fact, bring about a "educational revolution" in the nation. It went on to say that the provision of instructional materials to every school was crucial for raising teaching standards. The use of teaching aids, particularly improvised aids, to make teaching and learning more effective and realistic has been heavily emphasized in the National Policy on Education, first published in 1986 and revised in 1992. According to Edgar Dale, "Audio-visual materials offer the best antidote for the disease of verbalism" because they provide a real foundation for conceptual thinking and give birth to conceptions that are meaningfully enhanced by meaningful associations.

Following are some key advantages of using audio-visual aids properly:

Best inducements

The greatest motivators are them. Students work harder and more enthusiastically. They pay more attention. They aid in reducing verbalism in teaching, which is a sickness. They aid in providing explicit ideas, which helps to improve learning accuracy. According to Raymond Wyman, "We tell students, and we usually give them written material." Words are fantastic. They are simple to create, replicate, store, and transfer. However, using too many words or in excess may lead to major issues, most notably verbalism and forgetfulness issues.

Lucid pictures

Because our experiences are immediate, solid, and generally persistent, they help us to develop clear mental pictures when we see, hear, touch, taste, and smell. It becomes most natural and hence simplest to learn via the senses[5], [6].First-hand experience is without a doubt the finest kind of educational experience, according to the concept of vicarious experience. However, giving students this kind of experience is neither practical nor desired.Support for positive classroom interaction: Audio-visual aids support positive classroom interaction for the efficient achievement of teaching-learning goals via their vast range of stimuli, opportunity for student engagement, and vicarious experiences.Mass education dissemination: Audio-visual tools like radio and television assist in giving those who live in rural places access to educational possibilities. They also support the advancement of adult education.Promotion of a scientific mindset: Students watch demonstrations and phenomena rather of hearing information, which helps them develop a scientific mindset.

By encouraging creativity, inventiveness, and other higher mental activities on the part of students, the use of audio-visual aids stimulates students' imagination, thought processes, and reasoning abilities and assists in the development of their higher cognitive abilities.Reinforcement for students: Audio-visual aids work well as reinforcers because they make it more likely that students will repeat the replies they receive, which is important for the teaching-learning process[7], [8].

Positive transfer of learning and training

Using audio-visual aids facilitates the proper positive transfer of classroom learning and training, which assists in the acquisition of additional ideas, principles, and problem-solving strategies.A balanced, logical, and scientific use of audio-visual aids fosters motivation, captures students' interest and attention, offers a variety of creative outlets for the use of their tremendous energy, and keeps them occupied with classwork. This creates a positive environment for the creative discipline. This makes the classroom as a whole more amenable to creative discipline.

2.   DISCUSSION

Ineffectiveness of the aids

The lack of effective planning, the teacher's laziness, and the lack of suitable preparation, presentation, application, discussion, and the crucial follow-up work prevent the aids from demonstrating their full value. A good lecture involves many components, including preparation, presentation, application, and discussion.

Financial difficulties

The national and state governments have established audio-visual education boards and developed engaging initiatives to popularize instructional tools, but a lack of funding prevents them from performing to their full potential.

Lacking electricity

The majority of projectors, radios, and televisions cannot function without an energy source, which is still unavailable in many schools.

Lack of training facilities

Teachers and employees should get particular training in the usage of these tools from training institutions or specialized organizations.

Coordinating between the center and the states

Both the federal government and the states should create excellent film libraries, audiovisual education museums, permanent and portable exhibits, and educational "melas".The majority of instructional movies are in English. These need to be available in Hindi and other Indian languages. neglecting to meet local needs: The social, psychological, and educational variables specific to the region are not given much consideration while creating audio-visual aids[9], [10].

Future of educational tools

Currently, the issue is not whether or not visual aids should be used in the classroom. Their position has long been understood. The current challenge is making these tools available to all instructors and students. If the government plans well and manufacturers, instructors, and students work together, the future can be prosperous. After receiving the audience's feedback and doing field research, useful and effective tools may be built. Although a lot has already been accomplished, much more has to be done.The hardware method and the software approach are the two categories into which educational technology may be divided. These strategies have previously been covered in a prior chapter of the unit.

Hardware-based approach

It is based on the development of electro-mechanical educational devices using engineering concepts. This strategy is the end consequence of the twentieth-century's effect on science and technology. The hardware approach automates the teaching process so that instructors may work with more students while spending less money on their education. Among hardware are the following:

- Computers
- Epidiascope
- Magic wand
- Fourth, movies
- A projector above
- Radio
- A projector for slides and movies
- cassette players
- Educational equipment

Software approach

This builds a sophisticated reservoir of information in the student while using psychological concepts to change his behavior. It has its roots in the groundbreaking work of behaviorists like Skinner. 'Software' is a common term used to describe the programs that such a technology creates. Task analysis, establishing explicit goals, choosing suitable learning tactics, immediately rewarding replies, and ongoing assessment are characteristics of the software approach. Software may also include books, periodicals, instructional games, newspapers, and flash cards.

Blackboard

Despite the popularity of newer and better technology, Blackboard is a special tool that is both useful and irreplaceable. It is a teacher's closest and oldest friend. It serves as a mirror for pupils to see inside the teacher's head and how he explains, illustrates, and teaches as a whole. It remains the "sine qua non" of our educational system and is both the most affordable and valuable teaching tool. The most often utilized assistance is this one.

Blackboard writing was originally done on sand or clay.Blackboard usage in class instruction fosters informality and encourages learning. There are no longer any restrictions on what may be taught. It aids in "planning," "crystallizing" key ideas, "summarizing," and "reviewing" outcomes. Blackboard is often utilized during a lecture since it's an easy way to interact with the whole class at once.

Epidiascope

The epidiascope is a device that can project pictures, written text, tiny opaque objects, or images from a 4 by 4 slide onto a screen. Any chart, diagram, map, photograph, or other image may be projected on the screen using an epidiascope without having to remove it from the book. For this, a slide is not required. Using an epidiascope has two benefits. When a projection of an opaque object is made, it functions as an epidiascope. If you project slides onto it, it functions as a diascope. With a light, plane mirror, and projection lens, it operates on the idea of horizontal straight line projection. The opaque item receives a bright illumination from the bulb. A plane mirror positioned 45 degrees above the project bounces light off of it, allowing it to travel through the projection lens and create an enlarged picture on the screen. Film Strip A 35 mm wide film strip is made up of 12 to 48 image frames that are placed in a certain order to build a theme. A 35 mm camera may be used to take a sequence of pictures, and then a positive print of the negative film can be made on another 35 mm film to create a film strip.

Globe

Without knowledge of the globethe actual mapknowledge of a map is illusory. It really embodies the physical characteristics of the planet. In a classroom setting, a globe provides a clear picture of the whole surroundings at a look. A toddler may comprehend the ideas of time and space via a globe. Consequently, globes are required in every classroom. Every school is allowed to keep one of each of the following four kinds of globes: a political globe, a physical globe, a washable projection globe, and a celestial globe.

Magical wand

The magic lantern is the first device ever created for projecting images from a transparency onto a wall or screen in the history of audio-visual aids. A transparent slide of the tiny is made when the or illustration is extremely small and it must be seen to the whole class. This slide is then inserted into the magic lantern's slide carriage. This magic lantern gadget enlarges its dimension and improves the clarity and sharpness of the vision to project it onto the screen.

Map Analysis

Without a map, understanding of many geographic, historical, and economic ideas remains unreal, insufficient, and lacking in many areas, notably social studies. By inspiring the students, a creative instructor might transform their dread of maps into a sincere affection for them. However, this assumes that the instructor will always utilize maps in the classroom at every opportunity and that each student will have their own atlas. Every student should also be familiar with certain fundamental mapmaking skills, such as copying, growing and shrinking, representing, coloring, and preparing crucial elements. Because they are unaware of the abilities needed for map development, the majority of students grow to dislike maps. A map is a precise depiction of a flat area in the form of a scale-drawn graphic that shows the borders of various nations and continents. With reference to a practical size and a suitable color scheme, geographic information such as the positions of mountains, rivers, a location's height, the contours of the earth's surface, and significant sites may also be appropriately portrayed.Many pupils believe that the seasons are established because the earth tilts toward

the sun in June, moving northward, and in December, moving southward. That tilt of the Earth never occurs. The learner must comprehend that although the earth's inclination is constant, its tilt fluctuates as a result of its rotation around the sun.

Map categories

Relief maps

These calls need an understanding of colors, contours, symbols, and other mapmaking ideas.

Historical maps

1. Historical maps show how periods have changed, as well as the rise and fall of many kingdoms. It is vital to understand boundary lines and other symbols.
2. In general, the learner should be familiar with the following categories of distribution maps:
3. Maps of vegetation, populations, economies, statistics, dot maps, pictorial maps, languages, races, and other human divisions, etc.
4. Contour maps, weather maps, seismological maps, archaeology maps, rainfall maps, geological maps, etc. are examples of geographic maps.

Microfilm

Information is often stored on and retrieved from microfilm and microfiche. On a 35 mm film, reading material is photographed for microfilms, with each frame being a resized image of a printed page. So, a short loop of 35 mm film may be used to store the printed pages of a book. An image that is about the size of a printed page is generated on a ground glass screen when the microfilm is run through a microfilm reader, allowing the observer to read the content. Images of various pages may be acquired by running the film through the microfilm reader, which also allows for reading.

Models

Models serve as stand-ins for actual objects. A model is a true object's three-dimensional representation. Models are tangible items that clearly describe the composition or operation of actual objects. A model is a copy of the real thing. Students may have a true understanding of the item thanks to models. Models are really fascinating and simplify stuff since they are three dimensional. We can make items smaller or larger so they are observable using models. Making pupils view the whole of a major industrial unit or even a large machine unit may not be feasible or even viable, but a model will provide the proper perspective. The creation of models could serve as the subject of a project. It is crucial to spark kids' enthusiasm in creative endeavors. Both static and dynamic models are functional. A functional model will draw initial interest and provide learning inspiration. A variety of materials, including cardboard, plastic, plaster of paris, wood, clay, and pharmocol, may be used to create a model.

3. CONCLUSION

In conclusion, the way information is transmitted and absorbed has changed dramatically as a result of the incorporation of multimedia components into instructional technologies. By attracting students' attention and improving understanding using visual cues, aural cues, and interactive elements, the multimedia method adapts to different learning styles. With the cognitive processes of knowledge retrieval and retention in mind, it develops immersive and interesting learning environments. Nevertheless, a strategic approach is necessary for successful execution. The use of multimedia in the classroom must be balanced so as to enhance rather than detract from the instructional material. The usability of multimedia

information for all students, especially those with impairments or restricted access to technology, continues to be a crucial factor.

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CHAPTER 4

EXPLORING THE RADIO SCHOOL BROADCAST PROGRAMMES

Pawas Kumar Mandal, Assistant Professor
College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India,
Email Id- PKM6282@GMAIL.COM

ABSTRACT:

Radio's School Broadcast Programmes have long served as a valuable educational tool, delivering informative and engaging content to students across different age groups. This abstract explores the significance, benefits, and challenges of these programmes in enhancing learning experiences. It delves into the evolution of school broadcast programmes, from traditional radio broadcasts to modern digital platforms. The abstract also highlights the role of technology in expanding the reach of these programmes and discusses their potential to foster holistic development among students. By examining various case studies and research findings, this abstract shed light on the effectiveness of school broadcast programmes in supporting curriculum, promoting active learning, and encouraging critical thinking. Moreover, it addresses the importance of collaboration between educators, broadcasters, and policymakers to ensure the continued success and innovation of radio's school broadcast programmes in an ever-evolving educational landscape.

KEYWORDS:

Educational Content, Information Dissemination, Learning, Radio Broadcasts, School Programs.

1. INTRODUCTION

Micro-projector:

A micro-projector is a device that combines a microscope with a slide projector. By magnifying an item hundreds of times, the microscope may be used to observe very small sections of things. A glass slide with a microscopic portion of an animal or plant is often used to create a magnified picture in a microscope that can be viewed with the unaided eye. A projection lens, a plane mirror set at a 45-degree angle to the vertical plane, and a vertical ground glass screen make up the micro-projector attachment. It helps a lot while teaching science[1], [2].

A chart, diagram, map, or anything else that is printed on transparent plates may be projected on a screen or a white wall in front of pupils using an overhead projector. Teaching becomes enlightening, informative, and remarkable as a result. Additionally, it saves the instructor a lot of time that would have been spent writing or drawing them. The instructor may also save these transparencies for presentation when they revisit the same subject in the future. Such transparency preparation is quite straightforward. An instructor just has to use a fiber-tipped pen and any dark ink to write or draw on translucent plates as needed. Any content intended for presentation during class time may be typed on these transparencies using high-quality carbon paper. Washable water color may also be used to write on transparencies if they need to be cleaned before use[3], [4].

Slide projector:

Before a lesson, photographic slides may be shown on a screen or a wall using a slide projector. With the use of such a projector, images of pertinent material intended for classroom instruction may be generated on celluloid slides and shown. By using a remote control switch, the teacher's lecture may also be recorded on an audio cassette and played

back using a tape recorder that is properly synced with the slides. A tape-slide sequence is the term used to describe such a setup. If multiple slides are shown in fast succession, the feature films and the tape-slide sequence may both have an engaging impact on the audience.Typical slide projectors include a frame with two apertures where slides are placed to focus. Slides are manually swapped one after the other in a continuous flow. A slide projector that has been improved features a circular disc with additional slits where even 100 or more slides can be placed in a sequential order and projected on the screen using a remote-control switch that can be appropriately operated by the teacher as he conducts the lesson[5], [6].

Reprographic Tools

Reprography is a field of technology that deals with duplicate and reproduction techniques. Duplication entails creating several copies of the original that are exact replicas. Reproduction permits the creation of one or more identical copies of the original in monochrome or color, either the same size as the original or of a different size. Reflex printing, photography, and duplicators are among the tools and methods used.

Recording Device

Audio playback may be done using record players. These older models of hardware rely on records or discs for playing when necessary. The four most often used record sizes are 72, 102, 122, and 162. There are records that can be played at fast speeds with a regular stylus. The modern record players come with speed changer mechanisms that enable the slower long-playing 45, 331/3, and 162/3 rpm records played by microgroove stylus to be played. The use of recorded music in school is very beneficial for developing linguistic skills, literary and poetic appreciation, presenting short dramatized historical events, as well as musical knowledge and discriminating. Long-playing records with 20 minutes of recorded content per side have a variety of different options and are ideal for classroom education. The unique microgroove ring that the required selection occupies on the record may be used to quickly identify it for a certain learning scenario. The term "talking books" refers to recordings of important works of literature for blind people. Electrically driven multi-speed record players and changers with built-in amplifiers or connected to independent amplifiers and speakers have replaced the earlier, manually wound spring powered phonograph. Similar to how electrical imprinting, which has more clarity and fidelity, has replaced the previous mechanical recording[7], [8].

Tape-recorder:

For classroom education, a tape recorder on its own may be quite successful. It is possible to play pre-recorded cassettes in the classroom that include lectures by renowned professors on any topic. These instructions are amazing not just for their originality but also for their thoughtfulness and planning.When it comes to teaching foreign languages like English, the tape recorder has shown to be invaluable. Pre-recorded English lesson cassettes may be played in the classroom to teach students accurate accent, pronunciation, and intonation—skills that a typical English instructor sadly lacksvideotapes seen on television: Videos that have already been recorded may be seen on the classroom TV. Similar to conventional cinematic instructional films, educational video films on TV in the classroom have an impact on pupils. Video films offer an extra benefit over traditional films since the setup is small and allows for little alteration in terms of space and time. Of all the audio-visual teaching and learning materials, it is the most practical.

Cassettes of video

The potential benefit of video cassettes lies in the fact that the learner has control over the machine and the learning process through control over the machine's mechanics, i.e.,

stopping, starting, timing, reviewing, and previewing. As a result, the learner has the ability to order the sequence of events, which in turn regulates the rate of learning and makes practice sequences easier. There is potential for this to serve as the foundation for acquiring a variety of physical, intellectual, interpersonal, cognitive, and emotional abilities. These are significant issues that printed materials struggle to effectively address. When remote education programs are used to update the skills and methods of field workers, this feature may be very helpful. For instance, field workers may be taught new horticultural practices to enhance agricultural methods[9], [10].

A study center is a place with many video machines where students may bring their study materials. In certain countries, video cassette programs are being constructed around this notion as a method to regionalize a centrally generated program. The programs are managed by the students individually. Study centers sometimes provide group sessions where video cassettes are played. Without more instruction, this method can develop into yet another broadcasting method.In other nations, some educational institutions build programs that will be utilized on an individual basis as either supplemental learning material or intrinsic to the teaching program, assuming that students have access such technology. The two issues with video cassettes are their cost and the creation of the programs.

Using cheaper equipment won't necessarily result in reduced equipment expenses. Cheaper equipment formats do not allow for the faithful reproduction of cassettes in large quantities or the accurate representation of technical material like animal or plant tissue.Video creation for teaching requires new methods that are distinct from those used for amusement. Producers, directors, and scriptwriters must have a working grasp of education and instruction. Many of the outdated film and television methods are no longer applicable. For instance, the fundamental idea that programs must have a beginning, middle, and end will no longer hold true because a cassette could just as easily consist of a series of brief video events that pose a question, demonstrate a method, or compile a variety of visual materials to clarify concepts or principles.

Aids in three dimensions

Aids in three dimensions are effective stand-ins for actual items. There is no denying that coming into contact with actual items is the best way to learn. However, it may not be practical to bring the genuine artifacts into the classroom for a number of reasons. The actual items could be too big to transport or keep in the classroom. A class of kids may not be able to view it because of its size. In its actual form, it can be too complex to comprehend. It could move too quickly for its mechanics to be comprehended. Its motions could be too sluggish for a thorough analysis. It can be too pricey for an educational institution to buy. Being limited in these circumstances, a teacher must look for suitable replacements for the genuine things.The most crucial three-dimensional tools include models, diagrams, mock-ups, and specimens.

Models

Models are exact copies or duplicates of real-world items. Typically, there are three sorts of models: working, cross-al, and solid. Models are physical, sometimes notably larger-than-life things. All models include a detailed explanation of the original's structure or features. Working models of the original are sometimes employed when the precise function of the original may be readily replicated.

The following are some crucial roles that models play:

- Models condense reality.
- Models make abstract ideas concrete.

- With the use of models, we may shrink or increase items to make them visible.
- Models may accurately depict an industrial facility, a bridge, or a dam like the Bhakra Dam.
- A functioning model demonstrates how different machine and object processes operate.

The creation of models could serve as the subject of a project. This is incredibly beneficial for encouraging students to engage in creative activities.To create a model, materials such as cardboard, thermocol, plastic, plaster of paris, wood, and metal may be utilized.

Mock-ups

An amock-up is a specific model or functional reproduction of the thing being represented. In a mock-up, a certain component of the actual reality is stressed or highlighted to increase its educational value. A mock-up's look may or may not be comparable to that of a model, which is an identifiable imitation of a thing. Mock-ups of bridges, ships, tunnels, car engines, and other structures may be shown to show how they are built and function in real life. In technical institutes, mock-ups are often utilized for training reasons.

Dioramas

A diorama is a three-dimensional tableau with depth that includes many modelled items and is situated in a landscape. A few modelled items are retained in the front of the diorama scene, which is put up on a tiny stage and merged into a painted realistic backdrop. Using dioramas to educate biological and social sciences is highly successful.

2. DISCUSSION

There is little question that radio has the potential to be an effective teaching tool. According to Frederick Wittis, In conclusion, I believe that popularizing education itself is one of broadcast's most valuable contributions to education and one of its true obligations to both itself and its listeners. According to G. Reynolds, radio is the most important educational medium that has been developed since the turn of the century in the widest sense. Its potential as an adjunct to traditional classroom instruction is practically limitless. Its potential for instruction is not limited to the first five or six hours of school. It is accessible from the crack of dawn till midnight. Children and adults in communities, no matter how distant, may access the finest of the world's knowledge and artistic resources by taking use of radio's extensive educational and cultural offers. Its usage in school will eventually become as standard as textbooks and chalkboards.A child's first teacher and third parent are now both television.

Television's history demonstrates that it is an extremely potent, educational, socializing, and mobilizing force. The majority of nations in the globe have chosen television as a solution to their educational challenges and issues. In developed nations like the UK and the USA, direct television instruction first debuted forty years ago. The BBC broadcast its regular programming in November 1936. Televisions were installed in isolated regions. By 1958, television broadcasts had reached more than 98 percent of the population. By 1961, Moscow and the UK were exchanging programs. By 1962, American engineers had successfully used a satellite-telestor to transmit television signals over the Atlantic. The BBC-2 introduced the first regular transmission of colored television in Europe in 1967. In the USA, television was employed for the first time as a teaching tool. There were a lot of instructive television trials carried out. The continental classroom initiative launched educational television for the whole USA in 1958. For science teachers, it aired the program Physics of the Atomic Age. This program provided education to almost 40,000 instructors. Later, this initiative also aired a number of programs, including current mathematics, modern chemistry, and new biology.

The Mid-west Airborne educational Television project launched educational television in 1961. The programs, which benefited around five million children and cost $1 million, or $1.50 per student, were distributed to roughly 13,000 schools. Hundreds of educational television programs are now airing in the USA and other nations.

Meaning: The most effective way to educate the general public and close the development gap between underdeveloped and developed nations is via television. For a nation like India, which has vast and inhospitable regions, various weather conditions, a sizable and constantly expanding population, T.V. may play a key role in the delivery of both official and informal education to the general public. Additionally, it may aid in bringing about social and cultural changes that have an impact on play, music, and literature. Television allows everyone to hear the inspiring and thought-provoking opinions of eminent politicians, scientists, educators, artists, and instructors. Television aids in promoting public awareness of a nation's social, political, and scientific growth.

Merits

The benefits of educational or instructional television include the following. It allows for the employment of the finest instructor on hand to instruct a topic to a large audience of student watchers. It records these instructors' very effective teaching techniques on film or videotape for subsequent use. Students who all see the same fundamental concepts or methods on television have a shared experience. It gives the teacher the chance to watch the teaching strategies and concepts of their subject-matter experts, grow his own understanding of instructional strategies, and inspire fresh thinking. It offers technological benefits for presentation or demonstration that are not easily accessible in regular classroom settings.

It enables up-close magnification of tiny items, parts, complex processes, and schematics, providing students a "front-row seat." By 'zooming' in or transitioning from a broad camera viewpoint to a close-up, it enables immediate perspective shift. By blending one image into another, it enables linkages between two images or time-lapse between two phases of a process.

By using super-imposition or "spilt screen" effects, it allows for the comparison of two or more drawings. Through the elimination of distracting surrounds, it focuses the student's attention on the precise detail of the thing that he should see. It creates immediate, long-lasting visual and rural impressions that often cut down on the amount of time needed to teach a concept or method. It enables the electronic 'into the classroom' of huge, rare, innovative, or constrained equipment. It integrates helpful film clips, slides, graphic art, and teaching aids into a television presentation that is specifically designed to suit the requirements of a certain course or topic. The process of putting up classroom projection equipment is time-, labor-, and money-saving. It does not need specific classroom setup, room darkening, or special ventilation in order to deliver educational videos into classrooms as required. More "immediacy" is offered than in educational videos. It provides real-time or soon after live demonstrations, videotapes, or film presentations to the classroom. It enables the integration of current knowledge, adjustments, new tools, or methodologies into classroom education. It gives the instructor the chance to check in on specific pupils, help them during the television presentation, or decide what needs to be applied further after the presentation.

A. No television show for schools can be conceived or created unless the classroom instructor is actively involved in the process. Only the classroom instructor can completely meet the needs of the students of various age levels, the appropriateness of the resources, the sequencing, and the contents when planning and preparing a TV

lesson. Experience has shown that a classroom teacher who has a solid foundation and is well-versed in the mechanics of a successful TV lesson may contribute in this area effectively.

B. Production: Production is a technical process, but in order for a classroom teacher to appreciate a good lessonthat is, to identify its strong and weak elements and recommend revisionshe or she must have understanding of the mechanics of production.

C. Presentation: Once again, only a classroom teacher can deliver the goods while presenting a TV lesson; without a doubt, a teacher with initiative, inventiveness, and subject expertise is needed. Only a small group of instructors are included in the presentation, although every teacher who teaches a certain topic is included in the selection process. A good pick can only come from a group that has received TV training. It is mentioned that even a very skilled and qualified instructor in a school slips and fumbles in the studio without the proper training in this sector.

D. Utilization of the TV program and the instructor pre-and post-telecast: Utilization is the region in which the instructor is in complete control of the circumstances. It should be highlighted that no TV lesson is complete without the subject teacher's introduction and follow-up activities in the classroom. A good lesson might falter in the lack of either a decent introduction or a thoughtful follow-up, but an average lesson can become highly powerful with both. Before the lesson is broadcast, the instructor must motivate the students, get them ready, and pique their interest. Then, during the follow-up, the teacher must address any questions that the students may have and fill in any gaps while providing reinforcement. He must also incorporate the TV lesson into his regular classroom instruction. To ensure that his pupils get the most advantage from a TV lesson, he must also take care of a variety of other issues and create comfortable surroundings.

E. Evaluation is a further crucial subject. If handled correctly, it significantly improves the quality and value of TV courses. Without the participation of the classroom instructor, no assessment is feasible or meaningful. Additionally, the classroom teacher's simple participation is not very helpful unless he is thoroughly knowledgeable, has received the appropriate training to analyze and appraise the TV lesson from all sides, and has developed the competence to execute the job successfully. Without enough training, instructors even neglect to correctly fill out check-sheets, an activity that requires the classroom teacher to perform after each session.

Infrastructure for efficient television education

From a use perspective, once television is a standard component of classroom instruction, the physical facilities offered by the schools are just as crucial as the quality of the programming. No matter how insightful and important the TV shows are, they cannot be seen by the public until the best possible physical infrastructure is made accessible to the viewers. The availability of physical infrastructure seems to be very straightforward, but maintaining their operational readiness demands ongoing attention.Depending on the number of viewers, a certain area in each TV-viewing school must be set aside. Every class that must watch a TV lecture should, in theory, have a TV set installed in the classroom itself, although this is not always practicable. As a result, it is advisable to have a space that can be transformed into a TV room. Hall is yet another option for big audiences. Other issues that need to be addressed are:

- TV set placement and modification
- seating configuration

- Lighting
- Ventilation
- Pre-telecast, pre-demonstration, and post-telecast areas

It goes without saying that the TV sets should always be in working order in order to be turned on at a moment's notice. Defective plugs and power outlets, a defective antenna, and improper adjustment of TV settings are some of the issues that prevent operation.

The majority of school television shows are curriculum-based, so students must be aware of the connections between what they learn in class and what they see on television. These should be delivered to the instructor of the class at the start of the session or term, as appropriate.

A movie, in general, is a variety of communication medium. It dramatizes interpersonal interactions, realistically conveys information, elicits emotions, and conveys attitudes. It may be used to spread ideas, viewpoints, and experiences across large numbers of individuals. In adult education, it is quite successful. Because it educates the complete body as well as the intellect, an instructional film has been called the ultimate teacher. It has a profound impact on children's brains and personality development. The primary goal of educational films is to uplift and educate viewers in accordance with the norms and values established by society. A quality instructional movie ought to promote civic engagement among the audience. To promote unity and oneness, a national integration film may be produced. The theme may be "Live and Let Live." There are many themes that may be explored, including historical, biographical, and topical issues.

The benefits of movies

Following are some of the key benefits of moving pictures:

Student reading interest increases

Numerous studies carried out in the USA reveal that children's reading interest is raised by movie creators. They are motivated to learn more about the content they have witnessed in a film or television program.genuine-world learning scenarios: The movie shows us learning scenarios that seem very genuine and practical. The young youngster directly experiences what is occurring by seeing it. He is thus much impressed.

Selected learning scenarios

A youngster learns more from real-world experiences than from teachings he is passively taught in school. However, life's experiences become commonplace. It sometimes lacks any educational value. It sometimes could have a negative effect. But all of the teaching opportunities are chosen for an instructional video. They are very valuable educationally.

Movement speed

In a movie, things happen quickly, but they don't lose continuity or the point of the story. As a result, the impacts of a concentrated form are also felt quickly.The learning environment is highly lively. Everything is occurring in such a manner that it seems to be more than real and alive. The events are all quite vivid.Teaching is motivated by the movie. The youngster shows a lot of attention. A youngster may not be able to grasp the details of the French Revolution after weeks of study, but if he watches a video of the events, he will instantly comprehend and absorb all there is to know about the movement.A movie is as recreational as you like. He therefore learns by playing. After the concert, he is elated and cheerful.Learning habits: Children who watch educational videos are more likely to want to learn more about the information they have learned.

Illustration of all learning scenarios

A youngster who has never even seen a lake cannot be adequately introduced to the concept of an ocean. If a youngster has never seen a hill in his life, he cannot comprehend what a mountain is like. However, we are unable to take every youngster to the tundra and the tropics, the ocean and the mountains, the desert and the valleys. Here, the movie is quite helpful. It brings the ocean, mountains, deserts, valleys, tundras, and tropicsall in their full splendor and forminto the school gymnasium.Hoban, Charles F., and E. According to B. Ormer, watching movies may help students learn new material and enhance their abilities, attitudes, and interests as well as their motivation to overcome challenges.When a movie night is planned, the instructor should make sure it is really necessary for the lesson being taught. Prior to the presentation, he must go through the history of the learning circumstances that will be shown in the video. It ought to function as a recapitulation.

3. CONCLUSION

In conclusion, Radio's School Broadcast Programs have endured as a vibrant instructional tool that has developed along with technology improvements. These programs have successfully supplemented conventional classroom learning by holding students' attention while imparting useful information. It is impossible to emphasize the advantages of using audio-based learning, including increased understanding and accessibility for different types of learners. The different examples given show how radio's educational broadcasts may enhance the curriculum, foster curiosity, and sharpen critical thinking abilities. But the digital era also provides possibilities and difficulties. The move to podcasts and online platforms has increased the accessibility of these shows, but it has also made it necessary to carefully curate the material to guarantee accuracy and age-appropriateness. To overcome these issues and fully realize the educational potential of radio, collaboration between educators, broadcasters, and policymakers is essential.

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CHAPTER 5

ROLE AND SIGNIFICANCE OF EDUCATIONAL TECHNOLOGY

Rashmi Mehrotra, Professor

College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India,

Email Id- rashmi.tmu@gmail.com

ABSTRACT:

Educational technology has emerged as a transformative force in modern education, revolutionizing the way knowledge is imparted and acquired. This abstract explores the multifaceted role and significance of educational technology in enhancing teaching and learning processes. It delves into the evolution of technology in education, from early adoption to the integration of immersive experiences and personalized learning. The abstract examines the benefits of educational technology, including its ability to engage diverse learners, promote interactive learning, and bridge geographical barriers. It also addresses the challenges associated with its implementation, such as the digital divide and concerns about overreliance on technology. By analyzing case studies and research findings, this abstract highlights the positive impact of educational technology on student outcomes and underscores the need for educators to adapt their roles in this technologically enriched educational landscape.

KEYWORDS:

Digital Assessment, E-Learning, Interactive Content, Learning Management System (LMS), Mobile Learning, Online Collaboration.

1. INTRODUCTION

The Children's Film Society India was founded in 1955 as a self-governing organization with the goals of supporting and fostering the Children Film Movement in the nation. Additionally, it seeks to provide kids and young adults entertaining that is both clean and wholesome. Production, acquisition, distribution, and presentation of kid-friendly films are all activities that the organization is involved in. The society's headquarters are in Mumbai, while regional offices are located in New Delhi, Chennai, and Kolkata. The group has created and acquired roughly 100 full-length films and 104 short films since it was founded. A pilot initiative to use Mobile Film Units to reach rural Maharashtra children has been running for a while. There are four active children's cinema clubs: one in Mumbai, two in Porbandar, and one in Kolhapur. The organization hosts film festivals and takes part in significant foreign international film festivals. The first international film festival in India took place in 1979 in Bombay. The International Centre of Films for Children and Young People, Paris, awarded the Indian festival 'A' category designation in 1981. The association has established a National Center of Children's Films that is associated with the International Center of Films that was established in Brussels with UNESCO financing. Among the significant movies that a teacher might utilize are: Lahren Bachon se Batten Gulab Ka Phool Ekata, Scout Camp Guru Bhakti Ganga January 26.

Press as a teaching tool

The media is an unofficial yet very powerful educational tool. Newspapers and magazines are part of the press. They provide a wide range of information. They cover practically all subject areas. They keep us up to date. They are quite beneficial while teaching a variety of courses. Newspaper instruction adds variation and a "play-way" component[1], [2].

The study of languages may benefit greatly from the newspapers. Students pick up a lot of new vocabulary and idioms. They learn both how to express themselves and how to respond to other people's expressions. In terms of social studies, they discover how society changes daily. They get a lot of knowledge about society. Daily newspapers and periodicals include a wealth of geographic and scientific data.The study of newspapers is crucial for understanding other cultures. Children learn about how the world is changing, how we are interconnected globally, how events in one country influence all other nations, and how we would all suffer if a third world war starts[3], [4].

The influence of remarkable advancements in information and communication technologies on education has been greatest. With the start of the new century, people were aware that they were a part of one of the most remarkable technological revolutions. The fields of information technology, communication, and multimedia are where this technological revolution is most concentrated. Generally speaking, it denotes the advent of an information culture and, as a result, is crucial in attaching education to every facet of life. By enhancing the quality of instruction, administration, and research in the field of education, educational technology also serves to increase the effectiveness of learning. Examples of important advancements in this approach are provided.increased involvement With the help of technology, education is now accessible to a larger audience. This is particularly important for the Indian context, where there are constraints based on geography, economics, physicality, and society. The country's educational standing has improved as a result of the development of remote learning at the secondary and postsecondary levels. Through organizations like the National Institute of Open Schooling and the Indira Gandhi Foundation, educational technology has played a significant role in spreading the services of open education. among others, National Open University[5], [6].

Learner empowerment: Traditionally, enrolling in a course involves signing up for a set of courses that are held in set locations on certain days. The pace and frequency of the lessons are determined by the instructor or organizer. The instructor assumes the needs and mental capacities of the pupils. However, various students have varying levels of grasping ability. Not every individual is suited to the conventional classroom activities. Technology may be used to spread knowledge in a variety of ways. While some students enjoy reading, others choose audio-visual presentations, group activities, and other interactive techniques. Depending on their choices, technology gives students the option to receive course information via various mediums. Each student may have a personalized learning experience thanks to technology's ability to provide learning in the most effective method for them. Facilitate the use of senses, memory, and cognition: Learning has to be seen as a means of showcasing talent. This is in line with Bloom's Taxonomy, which claims that a combination of the mind and body sums up the results of learning. Modern teaching and learning environments, however, do not fully satisfy the needs of human talents. Technology aids in this process; for instance, a student may utilize video equipment to comprehend the cosmos or the Internet to learn about things that are beyond of his physical grasp.

2. DISCUSSION

Differentiated instruction

The employment of various inquiry techniques by students is encouraged by educational technology. It increases the generality of individual instructions and encourages the development of individual learning processes. There is plenty of incentive for students to employ various multimedia components and creatively apply the information they have learned[7], [8].

Improve teaching methods

Learning never occurs in isolation in the official educational system. This implies that we cannot consider the work to be completed until we make knowledge and resources available to learners. Practically speaking, our educational system is based on the idea that a student would advance more quickly under the guidance of a teacher. Assisting and assisting instructors in the teaching-learning process is educational technology.

Improve learning outcomes

If the learning outcomes are not improved, all of the technology, innovative techniques, incentives, and policies established for education will be for nothing. The usage of new technology should end if it does not lead to improvements. As a result, educational technology has consistently experimented with and investigated novel technologies, such as podcasts, the Internet, and laptops. These initiatives aim to improve processes gradually and eliminate flaws. Thus, the use of educational technology has given instructors the ability to enhance student learning.

Continuous learning

Due to the fast expansion of information, it is now essential for people to keep learning throughout their lives. For one to improve their quality of life, continuing education is a must. Only the use of instructional technology has made this feasiblevarious learning resources: Learning resources were few in traditional educational environments, but the technology revolution has made it feasible to quickly provide various learning materials to students. We now discover that a computer communicates to the student in addition to presenting visual material. In the area of telecommunications, there have also been several advances[9], [10].The majority of learning tools that were accessible to students were impersonal, but they were quickly adaptable to their requirements. These remain the same regardless of the demands of a student at various learning levels. Learning is made easier for people of all abilities by developments in computer-linked learning materials, as well as by techniques arising from new streams in cognitive psychology and social dynamics. The designers of the instructional system are swiftly adding more recent advancements in the industry as integrated improvements in educational technology continue to take place. Examples of the same include individualized learning and programmed learning.educational technology is an ongoing, all-encompassing program that gives the educational system a scientific foundation. It may be effective in eradicating the system's inherent flaws. This may be accomplished by using frequently televised demonstrations or student-targeted materials. The use of educational technology may make some minor adjustments to how schools are run. However, it cannot be seen as a magic fix for all issues with the educational system.

Professional growth for teachers

A variety of opportunities exist for instructors to maintain their professional growth thanks to educational technology. The teacher's pre-service training is insufficient in light of the changing environment. They must always keep up with the most recent knowledge and techniques. With choices like online learning, distant learning, e-learning, and other similar kinds of alternative education, educational technology in its many forms has empowered instructors.Support and communication are essential components of every teaching-learning scenario. For formal and informal learning environments, many communication technologies have been developed by educational technology.For the purpose of knowledge preservation, contemporary technological devices, including print media, provide incredible possibilities. Information may be stored as computer software, videodiscs, audio-video programs, and more, then retrieved as needed. As a result, the majority of the information may be

maintained electromechanically; for example, a videodisc can save an entire set of encyclopedias.Use of contemporary media in education may reach and instruct students in any location in the world for the purpose of knowledge transfer. Broadcasts on radio and television might reach a lot of kids throughout the nation. Radio or television networking technologies allow for the simultaneous coverage of almost the whole nation. Through the use of a two-way talkback system, communication satellites have improved the effectiveness and efficiency of communication at a distance and allowed for the connection of several locations and multiple groups of students.The goal of educational technology is to make the best possible use of the resources that are already available, rather than to maximize their usage. It is important to realize that educational technology is a tool for achieving predetermined and well-defined educational and instructional goals rather than an end in itself. The goal is to increase the overall significance and effectiveness of the teaching-learning process for both instructors and students.Future prospects for the education sector: For students today, a career is now of the utmost importance. Alternative educational options including distant and open learning, education-on-demand, and other similar flexible models are required for the growth of their profession. This highlights once again how important educational technology is to the teaching and learning process.

Multimodal teaching is made possible by educational technology, which is also transforming curriculum and fostering sophisticated online research and collaborative methods. Continuous improvements in instructional technology have produced exceptional development opportunities. This has had a significant influence on both the ability of instructors to teach and the ability of students to learn. It is crucial for instructors to become experts in information and communication technology skills and their application in order to create a new learning culture. Technology integration need to be fueled by efficient learning. This necessitates keeping up with technology advancements in order to design workable solutions. Although there are many tools available, it should be obvious how to utilize them to enhance the learning process.

Additionally, as educational technology advances, it will open up the possibility of developing and reviving new kinds of educational institutions in the future. It would contribute to the least amount of waste possible of both human and natural resources. As stated in the Encyclopaedia of Education, educational technology is only valuable to the degree that it actively helps students acquire information and skills. According to the Encyclopaedia of Education, "Whether any particular device is functionally more efficient than any other will depend primarily upon the device's compatibility with the dynamics of the learning process, the learner's prior exposure to the body of materials to be presented, and the learners' physical, attitudinal, and motivational preconditioning for use of hardware, software, and the particular response mode of the equipment." In summary, it may be claimed that educational technology can help to enhance education both qualitatively and quantitatively. The International Commission on Education said, "Educational technology is not just an apparatus to be clamped on to a conventional system, to add or multiply traditional procedures."

There is a silver lining to this aspect. Only if it is really integrated into the overall system and if it prompts us to rethink and remodel it will it be of value.

Schools still have a long way to go before fully using instructional technology. Technology is increasingly seen by educators as a tool for exploration and creation. Even struggling pupils may succeed and develop with the use of instructional technology. It improves self-esteem and turns a lack of drive for learning into motivation. Through various, practical learning methods and a psychologically safe learning atmosphere, students are empowered.

Communication

We cannot deny that our educational system is being impacted by the contemporary world of science and technology where human progress is being made. However, just replacing humans with technology won't guarantee the effectiveness of education. The correct combination of human labor and scientific advancements is required. To strengthen our ability to interact with one another, we must make use of the resources already in place. The most crucial instrument in teaching and learning, communication, should be utilized correctly to increase effectiveness. The teacher's job is to impart knowledge, abilities, concepts, and attitudes. However, it has been shown that there are several communication concepts that might aid in enhancing the bond between instructors and pupils.

The power of communication to affect societal change cannot be understated. The speed of societal change over the last several decades has been accelerated by the media revolution. Only a successful result ensures that teaching is effective. Since no two pupils are alike, there must to be extra resources available to assist each of them. One such tool, the "teaching machine," was created by Skinner. It is really beneficial for memorizing anything. You will become familiar with the concept of communication, different classroom communication styles, factors that affect classroom communication, observation schedules for classroom interaction, Flanders' Interaction Analysis, the teaching process, and the teaching machine as a tool to improve the teaching process in this unit.

Man is a social species, and the main characteristic that sets him apart from other animals is his capacity for communication. In addition to the bare basics, one has to have effective communication abilities. We always desire to communicate our ideas, emotions, and beliefs to others around us. We can communicate via words, gestures, signs, and symbols, as well as facial expressions and tone. For communication, one may also employ technological mediums like telegraphy, radio, television, and computers. Communication describes this exchange. Communication is the process of passing on knowledge and understanding and is derived from the Latin verb communicare, which meaning "to share." The process of communication is intricate and continuous. It involves communicating both verbally and nonverbally. Our communication styles are acquired through time. As children, we see how our parents and other adults interact. Adults may develop better communication abilities by studying people who communicate well, acquiring new skills, and using those skills in practice. One of the most crucial sets of abilities a person requires is arguably the capacity to communicate successfully at work, at home, and in everyday life. The importance of communication in the teaching-learning process is crucial. A teacher can only effectively communicate with pupils to help them grasp his or her ideas or views if they are a competent communicator.

Any concept or idea that is not shared has no value. Therefore, communication is essential since it entails the sending of a message and the accurate interpretation of that message by the recipient.

Specifications of Communication

There are several fundamental aspects of communication that are covered below:

Purposeful

The goal of communication is always present. A sender always wishes to share any new ideas or thoughts that come to him. This implies that there is always a reason behind it. Communication's main goal is to alter the attitudes and behaviors of people engaged.

Universal

Humans are only able to convey information via communication. Due to the fact that it takes place practically everywhere, communication is a universal phenomenon.

Interactive

The main aspect of communication is interaction, which occurs when two or more people or groups connect with one another. The outcome can be social contact. As a result, there is a dynamic two-way flow of information.

Imperfect

Since the recipient can never fully comprehend what the sender is thinking, perfect communication is never attainable in reality. This is due to the fact that each person is unique, making complete mental synchronization impossible.

Dependent

Media of some type are used to carry out communication. Nowadays, there are many different ways to communicate, from highly developed communication mediums and technology to non-verbal cues. Therefore, it depends on a medium via which messages from one person to another may be delivered.

Complex

There are several processes involved in the intricate process of communication. This procedure may be hampered by a multitude of obstacles on both sides.

Contextual

Every interaction between people happens in a context. Communication context includes at least four dimensions: chronological, social, physical, and psychological. Each of these dimensions interacts with, shapes, and is shaped by the others.

Communication's Vitality

As we've previously mentioned, communication consists only of the message being sent and understood by the recipient. It is a crucial component of human existence since without communication, people cannot interact with one another as distinct individuals or autonomous groups. It is a necessary and fundamental process in all spheres of life. Practically every industry may benefit from effective communication abilities. The ability to effectively communicate is crucial for individuals to enjoy more fulfilling lives. Additional justifications for the significance of communication include the following:

Communication of Information

Information must be transferred between people and locations via communication. Any communication that is not delivered is useless.

Expressing thoughts or Emotions

We constantly communicate with people in order to express ourselves, whether it be orally or in writing. We are unable to communicate our feelings or thoughts if we are not in contact. Therefore, it's crucial to communicate in order to convey feelings or thoughts.

Education

The whole educational process includes teachers teaching pupils new information. However, this information is disseminated via a variety of communication-based platforms. Without communication, education is impossible.

Relationship development

In order to develop connections, communication is essential. It encourages communication, expression, and emotional interaction, all of which lead to relationships. Relationships are determined by the sort of communication. It could be either personal or work-related.

Entertainment

Entertainment is a vital component of everyone's life since it provides a distraction from the stressful daily pace of life. These days, communication is a component of every kind of entertainment, including movies, music, television programs, games, live theater, and even the retelling of tales by individuals.

Achieving objectives

When we are on a mission or trying to accomplish a goal, communication skills and significance become much more vital. An organization will become isolated if there is no way to communicate.

Promotion of culture

Through communication, culture and traditions may be preserved and promoted. It aids individuals in pursuing their artistic ambitions.

Integration

People from many different nations throughout the globe learn about one another's traditions and begin to respect one another's way of life and culture with the use of communication. It advances the practice of integrating and being understanding of one another.Debate and discussion are practices that help individuals understand different points of view on topics that are important to them. The causes of disagreements and the spreading of new ideas to others may be identified with the aid of communication.

Cycle of Communication

An exchange of messages constitutes the act of communication. The degree of similarity between the message delivered and the message received may be used to gauge the success of communication.

3. CONCLUSION

In conclusion, it is impossible to exaggerate the importance and function of educational technology in contemporary learning contexts. It has moved beyond being a just ancillary element and has developed into a crucial part of successful education. Innovative approaches that accommodate various learning styles and paces have been developed by educational technology, promoting a more inclusive and interesting educational experience. Improved student engagement, better information retention, and the development of essential 21st-century skills like digital literacy and critical thinking are all advantages of using technology in education. The old one-size-fits-all approach to education has changed with the capacity to provide tailored learning pathways based on individual student requirements. To avoid undermining the role of educators, it is crucial to address issues like equal access to resources and the need for strategic integration as technology continues to transform education. To guarantee that all students, regardless of their socioeconomic circumstances, can benefit from instructional technology, the digital gap must be closed.

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CHAPTER 6

EXPLORING THE COMPONENTS AND DYNAMICS OF THE COMMUNICATION CYCLE

Naheed Bi, Assistant Professor

College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India, Email Id-
naheedbi555@gmail.com

ABSTRACT:

The communication cycle serves as a fundamental model for understanding the intricate process of human interaction and information exchange. This abstract explores the components and dynamics of the communication cycle, shedding light on its significance in interpersonal and organizational contexts. It delves into the stages of encoding, message transmission, decoding, and feedback, emphasizing the role of factors such as language, context, and technology. The abstract examines how effective communication relies on the mutual understanding achieved through this cycle and how missteps at any stage can lead to misunderstandings. By analyzing real-world examples and scholarly insights, this abstract underscore the importance of mastering the communication cycle for successful communication, relationship building, and collaboration in various spheres of life.

KEYWORDS:

Channel, Decoding, Encoding, Feedback, Message, Noise.

1. INTRODUCTION

Information is transmitted by one person and received by the other, making it a two-way process. It is a continual process in which several actions are taken to ensure accurate comprehension and efficient communication. A communication cycle, which includes the following, may be used to illustrate the process of communication. Who sent the message? A sender or communicator who conceptualizes the idea that is to be sent starts the communication process. A sender is a person who starts a conversation and uses words or symbols to communicate. The message is greatly influenced by the sender's opinions, development, skills, mindset, and awareness. Additionally, it's crucial to make the right symbol choices based on the context and the target audience. To make sure that the recipient understands the message properly, relevant spoken and written symbols must be used[1], [2].

Conditions Changing the Message

Message: The communication process starts with the formulation of the message to be delivered. The main concept, idea, thought, opinion, sentiment, knowledge, or information that the sender wishes to convey is known as the message. The source sends a message, which the destination receives. It is encoded in a manner that both the sender and the recipient can decode it. An oral or written communication may be sent. Depending on the communication's purpose, it could be well-structured and ordered or chaotic and disorderly. A message can be anything that expresses ideas or emotions; for instance, a painter can communicate through his paintings, a writer can communicate through his writing, a person who is deaf can communicate through gestures or symbols, and an actor can communicate through facial expressions. All of these illustrations may be thought of as messages[3], [4].

Communication routes

The sender employs the process of encoding in order to explain to the recipient what the information means. Information is converted into a format that the recipient may understand

during encoding. It might be spoken, written, or graphic. 'Channel of communication' refers to the medium or method used by a sender to deliver his message. The transmitter and recipient are linked via this channel. Most channels use either verbal or textual communication to transmit information. However, as technology advances, visual channels are becoming more and more popular. The following are examples of common official communication methods: letter, memo, e-mail, phone, fax, telegraph, or television. Every channel has benefits and drawbacks of its own. For successful communication and for the recipient to correctly perceive the message, a proper channel must be chosen. For instance, when communicating with a small number of individuals, textual channels are more successful. Similar to written channels, oral channels perform better when the recipient needs immediate input. There are several circumstances when using both written and spoken communication is necessary. In order for the message to reach the intended recipient, the sender must choose the appropriate channel type[5], [6].

Various Means of Communication

One who receives the message

The decoding phase of the message starts after the right channel is chosen. 'Decoding' refers to the process of interpreting the information that is conveyed. The receiver is responsible for decoding. Information sent by the sender is interpreted by the recipient. To give the symbols meaning, the recipient translates the message. The degree to which a message is understood by the decoder is controlled by a variety of variables. These include the receiver's knowledge, his receptivity to the message, and the extent to which the encoder is dependent on the decoder. When the recipient understands the sender's message, communication has been successful.

Feedback

The feedback is the most crucial phase of communication. The sender assesses the message's effectiveness based on this element. The sender would not be able to verify that the message has been understood by the recipient if there is no reply. There would be no way to tell whether shared meaning had occurred. The recipient responds to the sender after receiving the communication. A grin, a written note, a verbal remark, or any other comparable action might serve as the signal. Therefore, it is reasonable to suppose that feedback may come in the form of words or facial expressions like smiles and sighs[7], [8].

Fundamentals of Communication

It is crucial to take certain common communication rules into account while communicating. Whatever nationality or culture a person may belong to, these principles apply to all people. These guidelines aid in breaking down any communication obstacles and improving the process. Thus, in order to improve the process, it is crucial to take into account certain common communication concepts. The following are some significant guidelines that should be kept in mind while communicating:

Language mastery principle

The most common method of communication is verbal exchange. It expresses ideas and thoughts via words. Language proficiency is essential for good communication. The language used by the communicator or source should be simple enough for the recipient to grasp. The only way a teacher can effectively communicate with pupils in a classroom setting is if they are fluent in the language that the students are learning. Without this competence, people are more likely to have their ideas misconstrued and their communication attempts may fail. Even if a teacher is an expert in his field, it may be of little benefit if he cannot effectively

convey that knowledge to his pupils. As a result, it is important for both the instructor and the pupils to be proficient in the language that is used in the classroom to impart information[9], [10].

Guiding Idea in Motivation

Throughout the communication process, both the communicator and the receiver should be very interested. The progress of communication may be negatively impacted by the sender's or the receiver's lack of drive, enthusiasm, and interest. Students cannot learn unless they are engaged in the material being taught. He must thus inspire the kids to communicate effectively. Better communication results from increased levels of motivation.

Sharing and interaction rule: It's crucial to communicate with consideration for others and awareness of how the message is being received. Sharing and reciprocal engagement between the sender and the recipient are essential to effective communication. To promote engagement and the efficiency of the teaching-learning process, a teacher should constantly include the pupils when instructing. To build a connection based on common understanding and experiences, instructor and students must communicate and engage.A key component of communication is listening, and the message recipient fulfills this duty. This is the principle of active listening. It's crucial to listen to the other person in order to communicate effectively. It would be quite difficult to grasp what someone is trying to communicate if the sender is not a good listener. Lack of effective listening may lead to a lot of misunderstanding and misinterpretation. The message being sent will be effectively and efficiently received thanks to active listening. Not listening to the other person may lead to a lot of misunderstanding and erroneous interpretation. Only when a listener can interpret what he hears can it be referred to be active listening. Despite not being communication in and of itself, listening is a crucial component of communication.

Adaptability of communication contents as a general principle

The information that is to be given must have a clear objective, be coherent, and be helpful to the audience. Both the sender and the recipient should find the material to be suitable. The sender has to be conversant with the message's content. The information should be clear enough on the receiver's end for him to understand it and react appropriately.

Principles for choosing the right channel

The inappropriate communication channel choice might result in poor feedback and communication barriers. The choice of a suitable communication channel is essential for effective communication. One should keep the message's objective in mind while choosing the communication medium. To reinforce information, more than one communication channel should be used. For instance, it is usually advised to employ a variety of teaching tools in the classroom to assist students in better grasping the subject matter being covered.

Principle of conductive environment: Facilitating successful communication requires a conducive atmosphere, which is highly important. Noise, disruption, bad pronunciation, and inadequate ventilation should all be avoided during conversation since they may make it difficult or impossible to communicate. Therefore, a conducive environment is required to improve communication efficacy.

Competency principle

Both the transmitter and the receiver must be capable of sending and receiving the needed information. Both of them should be able to communicate successfully, allowing the sender to get their point through and the recipient to do the same. The instructor in a classroom has to have the necessary training and abilities to impart knowledge to the students.

Proper body language guidelines

The use of appropriate body language is also crucial for effective communication. In daily interactions, body languagewhich includes eye contact, gestures, body position, and facial expressionsis one of the most important means of communication. People with poor body language are more likely to be misinterpreted and struggle to effectively convey their views. In a classroom, the instructor employs a lot of body language, but if it does not correspond to the messages being delivered, the pupils can get perplexed, which will impair communication.

Principle of suitable feedback

Suitable feedback indicates that the sender's message has been appropriately received and processed by the recipient. The direction of the feedback from the source to the receiver's end may also change. A teacher may determine whether or not the communication was successful by asking the pupils for comments. In the same manner, when teachers give students comments on their performance, it motivates them and improves communication. Lack of appropriate feedback would result in incomplete and incorrect communication.

Example use rule

Including examples always makes the message more engaging. For instance, providing a variety of visual slides or other relevant materials helps improve communication, particularly in a lecture-style setting like a classroom. The instructor may utilize a variety of commonplace examples from everyday life to help his students better comprehend the lesson.

Friendliness as a guiding principle

The sender's friendly demeanor might also facilitate greater message reception. The recipient may become aware and misinterpret the message due to fear and danger from a senior or more competent individual. For instance, if a teacher is very harsh, the pupils could be afraid to ask questions in case they are penalized. On the other hand, pupils feel more comfortable asking questions and even providing comments if the instructor is approachable.

2. DISCUSSION

Classroom Communication

There are two different styles of communication: verbal and nonverbal. In the following, both forms of communication have been covered. Under this heading, let's learn more about verbal and nonverbal communication.

Verbal Interaction

Any verbal communication depends on language as its foundation. Each community creates one or more spoken or written language varieties to facilitate communication. For the necessary communication, we have local, regional, national, and worldwide languages. Words and sentences are the fundamental building blocks of any language, and they are subject to the grammatical rules. One of the three forms of languageoral, written, or bothcan be used. One may express their emotions, ideas, and intentions to others orally by speaking and listening to them. The sender/communicator employs certain exact and distinctive sounds for this purpose, which the receiver hears and decodes in order to comprehend their message. The communicator/sender uses the native script of the language, such as Assamese for Assamese, Devanagari for Hindi, and Gurumukhi for Punjabi, while communicating in writing. For the purpose of conveying ideas and emotions, one puts them down in some written formpencil, paper, chalk, a board, or print mediaand the recipient interprets the content of the message by reading and decoding it. Teachers often employ language in the

classroom for classroom communication, explanation, and exposition of written materials while writing on the blackboard.

Nonverbal Interaction

The exchange of information might also take place without any spoken methods at all. In certain situations, using non-verbal communication may become both necessary and required. Non-verbal communication is often employed in everyday circumstances to amplify and enhance spoken communication.

The regularity of an action

A person is referred to be a chronic absentee if they miss work regularly; however, if they just miss work sometimes, they are not given this title. As a result, frequency of an activity plays a significant role in understanding behavior.

Paralanguage

Paralanguage, also known as vocalics, is the study of non-verbal voice signals. Prosody, the collective term for tone, pitch, and accent in speech, is one of these signals. Word meanings may be emphasized or altered through paralanguage.

Oculesics

It speaks to how eyes contribute to nonverbal communication. Eye contact demonstrates focus, participation, and interest. While staring denotes deep concentration, glancing suggests transient interest. Staring is often taken to imply rage or perplexity. Blinking is an ignorant gesture.

Kinesics Kinesics is the study of bodily motions, face expressions, and gestures. It is the whole or specific body's nonverbal behavior. It analyzes and interprets behaviors like shared eye contact, a smile, a warm or pleasant expression on the face. This idea was developed in the 1950s by ballet dancer-turned-anthropologist Ray L. Birdwhistell. He was interested in how posture, stance, and gestures affect social interaction. Kineme is the term for the unit of movement, same as phoneme is regarded as the unit of sound. But a lot of people prefer to refer to kinesics as body language.

Important non-verbal communication techniques

The following are crucial non-verbal communication techniques:

Expression on the Face

Face expressions may very effectively convey the sentiments, intentions, and ideas of the communicator. In general, one's face and facial expressions may be considered an accurate indicator of their emotional and cognitive state. The expression on a person's face when they are upset indicates how stressed and anxious they are. Similar to this, when someone is pleased or joyful, their expression is practically same and universal around the globe. When we look at someone's face, we may quickly determine if they are happy, scared, jealous, shocked, or expressing love, pity, or hate. In this sense, face expression may be considered one of the key non-verbal communication techniques.

The Eye's Language

Another significant kind of nonverbal communication is the language of the eyes. In actuality, the communicator's eyes may express whatever they want to say. Nearly all civilizations and communities across the globe have a similar language, which is the language of the eye. The many idioms and expressions that depict eye motions and activities, such as "Aankh Bichhana" and "Aankhe Dikhana," readily attest to the eye's function in

communication. It is quite simple and straightforward to interpret the sentiments, ideas, and intentions being communicated by the communicator since the language of the eye movements is so universal and well-known. We may infer from someone's eye-turning that he either wants to avoid us or isn't interested in our relationship or discussion. Similar to how one may effectively express their feelings of love, affection, indifference, fear, jealously, wrath, delight, hate, greediness, temptation, desire, or pity via their eye language.

The linked eye language is mostly used in classroom communication to maintain the required interaction ties between the instructor and students. A learner may be inspired to respond or participate enthusiastically in any teaching-learning process by the teacher's eye movements. Similar to this, the instructor may determine if a pupil is demonstrating interest in or disinterest in any classroom activity by watching their eye movements.

Bodily Expression

Our body has a remarkable and potent language for expressing our emotions, ideas, and behaviors. Through varied gestures, postures, and motions of her body parts, a classical dancer may demonstrably demonstrate the efficiency of such communication while dancing on stage. By observing the other person's body language, one may infer if they are praying, growing irritated, apprehensive, or tense, or whether they are feeling bashful, afraid, angry, jealous, envious, frightened, or in love or affection.

Despite seeming to be fairly universal and ubiquitous, body language has a strong cultural and social foundation. Every culture and community, as a consequence, has its own body language, which may be learned in the same manner as spoken language. As a result, while using or interpreting body language in communication, one should use great caution. To illustrate this point, let's look at a few examples: The indigenous people of Tibet greet one another by sticking out their tongues. In India, it would be understood as taunting and demeaning the recipient. In India, you may indicate a halt with your stretched-out, open hand. But to do so in Greece would be to openly disrespect the recipient. Kissing is a common greeting or welcome gesture in western society, yet it is frowned upon in Indian culture. Typically, when we welcome or meet someone, we join hands, touch feet, or shake hands.

In its broadest sense, body language may refer to a variety of gestures and physical motions of the body. It is widely employed by all speakers, actors for the stage or in the media, political and religious figures, judges, attorneys, and models for advertisements while presenting performances at their places of employment. We all use it often in everyday talks as a means of communication. When greeting someone, we join hands to show our welcome, and when saying farewell, we shake or raise our right hand. We show respect for our elders by caressing their feet. Through a variety of gestures and movements, our body communicates the numerous emotions we are experiencing, including anxiety, fear, rage, happiness, sorrow, love, hate, and pity. In practically all teaching-learning contexts, instructors and students may utilize body language quite successfully to promote positive classroom engagement. By using the right body language, teachers may enhance the clarity and potency of their explanations, expositions, and demonstration techniques.

Acoustic Symbols

Numerous voice cues and sound symbols also show promise as efficient means of conveying the relevant information. For instance, it could be effective to keep the line of communication open while we are speaking, narrating, or explaining to someone and he just responds with the sound "hunh- hunh-hunh." We can clearly see that he is listening and accepting the information being sent to him. On the other hand, making the negative sound "unu hunch" expresses the listener's disinterest in or disagreement with the content being communicated.

When he nods his head and neck while making the negative noises, it stands out and becomes more obvious. Similar to this, the sound "uanh," when said, is accompanied with a turn of the neck, which conveys full dislike or even hate.

The vocal cues or sound symbols may serve as a powerful means of conveying one's ideas and actions in addition to serving as a mediator in dialogue. For instance, when someone whistles or hums, we may infer that they are joyful and content, yet when someone says "hunn" angrily, we can infer that they are upset or in a combative frame of mind. Whistling, for example, may be used to tease, entice, or make lewd comments to someone. However, the interpretation of the sound symbols can only be made in relation to the tone, loudness, and the scenario that is present at the time of the utterances of these sounds.

Indicative Code Language

A customized code language is often also an efficient way to achieve the intended communication. To communicate with the deaf and the dumb, a particular code language made up of a variety of gestures, stances, and bodily movements may be employed. If you've ever seen a newscast designed just for the deaf and dumb populace being broadcast on television, you can probably gauge the success of this kind of communication. In order to have a code language, one may also combine voice cues and acoustic signals with body language. It must be properly understood, utilized, and interpreted by its users in any format since it will be widely disseminated. The users are thus allowed to create any form of coding language utilizing any kind of widely used verbal and non-verbal symbols. We must have overheard certain groups of kids or teenagers often communicating with one another in their own code languages in our daily lives as well. In order to communicate with one another during games, various team members adopt a code language. Even though you may not be able to understand a word they say, they do have a language that they use to communicate effectively. Similar to this, the detective and security organizations working all over the globe employ a variety of well-considered and structured code languages to exchange highly relevant and secret information. Any widely used code language may therefore prove to be a successful means of achieving the appropriate level of communication amongst the members of the shared group.

3. CONCLUSION

In conclusion, Understanding the complexity of human communication starts with understanding the communication cycle. A systematic framework is provided by its phases of encoding, transmission, decoding, and feedback for the analysis and improvement of interpersonal and organizational interactions. Making sure the intended meaning is correctly received is an essential component of effective communication, which goes beyond just delivering and receiving information. The cycle emphasizes the value of unambiguous encoding while taking the audience's language, cultural background, and context into consideration. Technology improvements make it possible to transmit information across time zones and geographic barriers with seamless message delivery. Effective decoding, in which the receiver understands the message in accordance with the sender's purpose, is equally important. The feedback loop completes the communication cycle and enables message clarity, validation, and modification. Without feedback, the cycle is left unfinished, which might result in communication breakdowns and misunderstandings.

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CHAPTER 7

FACTORS AFFECTING CLASSROOM COMMUNICATION

Gautam Kumar, Assistant Professor
College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India, Email Id-
gautamkumar.edu@gmail.com

ABSTRACT:

Classroom communication is a dynamic interplay of various factors that influence the effectiveness of information exchange between educators and students. This abstract explores the multifaceted nature of these factors and their impact on the learning environment. It delves into the significance of verbal and nonverbal cues, cultural diversity, classroom environment, and technology in shaping classroom communication. The abstract examines how factors such as teaching style, student engagement, and feedback mechanisms play pivotal roles in facilitating meaningful interactions. By analyzing empirical studies and practical instances, this abstract highlights the importance of understanding and managing these factors to create an inclusive, interactive, and conducive learning atmosphere.

KEYWORDS:

Active Listening, Classroom Discussions, Clear Instructions, Communication Strategies, Group Activities, Questioning Techniques.

1. INTRODUCTION

Other intervening factors that are present between the source of communication and the recipient may either positively or negatively influence the quality and efficacy of the communication process. Depending on how they affect communication, these factors may be referred to as facilitators or obstacles to communication. Congenial physical, psychological, environmental, and environmental amenities that allow for efficient communication may aid to promote and contribute to the system's achievement of the desired effectiveness. Simple communication breakdowns or complete failures may be brought on by barriers. The following are some significant obstacles to communication:an absence of shared language Oral or written symbols are used by language to communicate between individuals. The process of communication will be hampered if the sender and the recipient of a message do not share the same linguistic group. If the sender and the recipient do not speak the same language, they will be unable to converse. A youngster who can only speak English will be unable to communicate with another boy who can only speak French[1], [2].

Semantic barrier

Words are capable of having a wide variety of meanings. The meaning that is assigned to a word by the communicator and the meaning that is assigned to the same word by the receiver need not be the same. For various individuals and at different times, a word may imply different things. As a result, it is feasible that the same word may have distinct meanings for the sender and the recipient most of the time. On sometimes, people could employ terms that are different from one other to convey the same concept.

Slack listening

One of the main issues with communication is poor listening abilities. Several misunderstandings may be avoided if individuals listen carefully. Due to a range of distractions, emotions, excitement, lack of interest, unjustified aggressiveness, and roaming focus, a significant portion of the population does not pay extra attention to the message. Conflict and misunderstanding are often the results of this[3], [4].

Weak Vocabulary

Lack of language makes it difficult for the communicator to deliver the information precisely. It lessens the efficacy of the message and complicates it. The receiver won't be able to understand the phrases if he can't make out the words[5], [6].

Noise

Loud noise has an impact on communication as well. Sometimes, but not always, noise takes the shape of noises. It may be textual, physical, psychological, audiovisual, or visual. Physically speaking, noise is the loud sound produced by machinery, speakers, or other similar devices. When a student is late for class and his tardiness causes other students to get distracted, there is noise. Noise in writing results from poor handwriting and inaccurate typing. Psychological noise is a term that describes mental confusion, agitation, and apathy.

Time

The passage of time may also impede communication. For instance, a phone call at midnight could annoy the recipient, causing him to not pay attention to the communicator. His communication is rendered ineffective as a result. Even the most effective communication may be unsuccessful if it does not occur at the appropriate moment[7], [8].

Distance

The separation between the sender and the recipient of the message may be a significant barrier to communication. This may be because there isn't any technological equipment to connect them, such a phone or telefax. A poor seating arrangement in the classroom may result in a particular form of communication barrier, which may be eliminated by adjusting the distance.

Values and attitudes

People perceive communications based on their values and attitudes. A message cannot readily convince a recipient if it is unfavorable to him. Thus, while communicating effectively, individual attitudes, beliefs, and ideas become barriers. Communication in the classroom may be hampered by a student's or teacher's negative attitude.

Emotional barrier

Emotions are the feelings we have about the world. Positive emotions like joy, love, or like facilitate effective communication. Negative feelings, such as fear, mistrust, wrath, worry, and hostility, on the other hand, act as strong barriers to effective communication.

Many Perspectives

Every vision of a person has limits of their own. Francis Bacon said that "man prefers to believe what he prefers to be true." We construct our world by selective perception. This both shows more, more precise items in addition to those that are already there while concealing some particular things that are already there. Since each individual has a unique vision of the world, no two people ever have the same experiences or interpret the world in the same manner. When two or more individuals view the same thing or notion differently, a communication barrier results.

Incorrect Channel

Simple channel selection criteria may sometimes create more issues than they address. The intricacy of the message, the effects of a misinterpretation, the knowledge, skills, and capacities of the recipient, and the promptness of the recipient's response are important considerations for the sender when choosing a channel.

Poor memory retention

The capacity of human memory is limited. Not everything uttered can always be remembered. If the recipient is not engaged or paying attention, retention is considerably worse. This results in a breakdown in the communication process.

2. DISCUSSION

Closed mindedness

It is really difficult to speak with someone who has strong prejudices. This kind of individual is not open to hearing any messages on a topic that he feels he is an expert on. He is closed to fresh information, theories, and suggestions. As a result, even before learning the truth, he fully rejects the communicator's advice and information[9], [10].

Physical irritants

Physical barriers to communication are those that are present. For instance, an uncomfortable sitting arrangement makes it difficult for a student to focus on the conversation.

Lack of appropriate input

One-way communication is impossible without feedback. Feedback from the giver and the recipient is required in the form of appropriate inspiration, rewards, passion, and excitement. The instructor may never accomplish the true purpose of teaching if he or she does not get feedback on how well they are doing in the classroom.

Information overload

An abundance of information might hinder communication. There are several problems with a lot of information, and various individuals respond in different ways to filter the information and only get what they need. Therefore, it is possible to provide less information for successful communication.

Effective Classroom Communication Obstacles

Communication obstacles might sometimes arise, leading to incorrect transmission or partial reception of the message. Communication breakdowns do occur sometimes.A message being misinterpreted, a message having several meanings, deformities in a message, restrictions on the message-receiver, flaws in the communication route, and sound pollution are a few examples of additional forms of obstacles.

Sentiments and emotions

When we hear various kinds of words, our minds respond in various ways. These responses are influenced by our feelings and thoughts. Positive words cause positive responses in humans, and negative ones cause negative reactions. Misreading the message is the outcome of inappropriate responses. As a result, feelings and sentiments act as a barrier to effective communication.

Contextual situation

A word, sentence, or phrase's sense changes when it is taken out of context, and the intended meaning is lost. In this case, a message conveys the incorrect meaning. Therefore, it's important to consider a message in its proper context; otherwise, it might act as a barrier to effective communication.

Rules for Improved Communication in Schools

The key to having a successful engagement or reaping the process's full benefits is excellent communication. This allows you to gauge how effective something is by counting how many benefits you get from using it. The issue of what should be done to achieve the highest level of communication effectiveness now emerges. The solution is closely related to our efforts to enhance each part or aspect of the communication process. Let's consider strategies for improving the nature and functionality of these parts. In order to remove obstacles to communication and influence good communication, the following factors need to be taken into consideration:

- As much as possible, utilize language that is clear, basic, and understandable.
- A message should be written clearly enough for the recipient to grasp it.
- This may be repeated, but only to a point, if it's necessary to emphasize a certain point.
- Multiple channels may be utilized concurrently or sequentially.
- Feedback should be available so that it may be determined if the message was delivered in the intended manner.

The factors slowing down communication should be taken into consideration.

- It's important to practice the skill of listening. The following issues should be taken into consideration for it:
- It is incorrect to infer the message inside the envelope from the message-carrier or the envelope itself.
- It is important to develop the habit of listening to the message or message-carrier. The message's facts should be given more weight than its arguments, in comparison.
- If a topic has not been covered in class, it is preferable to bring up the issue towards the end rather than in the middle so that the instructor can be heard clearly from start to finish.

Schedules for Classroom Interaction Observations

The first years of the second decade of the 20th century mark the commencement of the classroom observation research. The term "classroom observation research" really refers to a broad range of investigations and methodologies rather than being used to describe a specific sort of research approach. Numerous classroom observation tools had been created by the 1970s, the decade in which such research increased significantly. Assessable studies often identify the desired behavior prior to the observation and, as a result, create a checklist or other sort of schedule that is used as a tool in educational settings to record or gauge the frequency of the identified behavior. The Structured Classroom Interactions Schedule was a checklist or schedule for observing classroom interactions between instructors and students. It was capable of noting up to six features for each encounter. Every encounter had a source that the Structured Classroom Interactions Schedule recognized as either a student, instructor, or target. When a teacher calls out a specific student's name to question them, the SCIS detects that they have been selected as the target. When a student raises his or her hand to answer a question that the instructor asks the class as a whole, the SCIS recognizes the target as a volunteer for the engagement. The SCIS may classify or identify an encounter as a shout in cases when the student responds before being addressed or acknowledged in any way.

Along with source and target, the SCIS also categorizes teacher-student interactions according to their kind, object, result, and feedback. When it comes to type, the interaction is classified as either a declaration, a query, or an argument. The purpose of the encounter,

which served as its resolution, was revealed in its underlying premise. The SCIS has categorized the purpose into a number of areas, including process, management, knowledge, and discipline. The interaction's result and feedback were key components, and the outcome was further categorized by categorizing the students' replies. Feedback, on the other hand, was for exchanges that did not result in a certain form of consequence. There are three categories of feedback: good, negative, and no feedback. When the interaction between the source of the interaction and the target was good, positive feedback was supplied. Conversely, negative feedback was given when the relationship between the two was subpar. If there was no feedback, the engagement had ended there.

Classroom Climate The phrase "classroom climate" refers to the ubiquitous, social-emotional environment that exists in almost all studies on the teacher's role. Climate is described by Withall as "the emotional tone accompanying interpersonal interaction." According to Cogan, the phrase "dominant effect" refers to the persistent, patterned emotional components of the interactions taking place in a teacher's classroom. Only when the classroom is seen as a complex and interdependent system can the classroom atmosphere be said to be all-pervasive and inclusive. The 'ripple effect' study has identified this interdependency. Researchers like Dyke and Hughes have shown that the classroom atmosphere is a setting that develops from the teacher's authority. The classroom environment is influenced by a number of variables, including the teacher's motivation, the students' interests, the student-teacher connection, and the student-pupil relationship. The youngster would feel threatened by the instructor who is not challenging them. The youngster will be challenged by the teacher's positive reinforcement while also feeling safe and comfortable to act.

Introspection was replaced by meticulous observation of human and animal behavior to gather data by study workers as psychology evolved into an objective science of behavior. Literally, the word "observation" implies "looking beyond oneself." It is one of the crucial and fundamental techniques used in practically all kinds of research projects to gather data. It generates one of the fundamental components of science, data that are gathered by watching the outward behavior of the organism in order to identify hidden issues and research various sorts of developmental trends. The organism's cover circumstances show through in overt behavior. The examination of overt behavior provides an indirect indicator of an organism's mental state. The advent of systematic observation as a data-gathering technique sparked interest in developmental psychology, and several research on the developmental traits of pupils were carried out, greatly advancing the study of child psychology. Direct and indirect, artificial and natural, planned and unplanned, participant and non-participant observations are all possible. We will only discuss two categories of observations here:

Natural observation: In natural observation, particular behavioral traits of pupils or instructors are observed in unstructured environments. The fact that subjects' behavior is being watched by someone is not made obvious to them. When pupils may not be aware of his presence, the instructor might watch how his students behave on the playground or in any other social setting. A one-way screen is used at a pediatric clinic to monitor the behavior of troubled kids. Although the observer is invisible to the pupils, they may be watched as they behave.

Participant observation

This kind of observation, a psychologist develops a close bond with a group of teenagers such that they are not aware of their presence and are not able to mask their true behavior.Studies conducted via observation are very crucial and provide substantial findings on how kids learn. Without a doubt, observation is a reliable scientific method for gathering data that may be used to identify a variety of behavioral issues, but it has the following drawbacks.

Observational limitations

The following are some restrictions on observation:

Only for gathering information on behavior, which may be seen in a variety of activities, is observation beneficial. This outside behavior does not provide accurate insight into the interior thinking process. On the basis of overt behavior, which may or may not be accurate, we can only make educated guesses regarding the student's mental condition. In the case of individuals who are able to conceal their true behavior while an observer is present, it becomes exceedingly difficult to make any conclusions. In certain situations, observation fails and produces observable outcomes, which may provide information on the real-world behavior of the individuals. Another drawback of observation is the subjectivity of interpretation. Based on his prior encounters, the observer may interpret his or her feelings in response to an external input. Due to his or her preferences, values, and dislikes, he or she may have a skewed interpretation. When a person draws conclusions from sparse sensory data, their perspective of the circumstance may have an impact on their observation. Additionally, impressionism, prejudice, and diversion are problems. Strong personal interests have been shown to have the tendency to cause a researcher to only focus on the items that he or she wants to observe, according to certain studies. Two types of faults may affect observation: sampling error and observer error. The first mistake happens as a result of inadequate circumstance selection. The mistake of the observer may have been prevented had they known more about the circumstance they were about to see. Sometimes the observer does not have a complete understanding of the situation, which might lead to mistakes.

Advice for improvement

The technique of observation has been improved recently to make it a more trustworthy and objective tool for gathering data for research purposes. The following recommendations are provided in order to get rid of the various faults. Utilization of machinery In most cases, observers don't write down their findings right away. However, observations have to be made right away. They should not be left for the future since there is a strong likelihood that they will get tainted with personal preconceptions and forgotten due to memory failure. To increase the accuracy of observation, a mechanical tool like a camera or a tape recorder may be used. For recording reasons, a notation system or shorthand may be used. Clearly defined goals The parameters of the observation's goals must be clearly stated by the investigator in advance. It is essential to guarantee a thorough investigation of the expected behavioral traits.

Schedule

The time and hour of the observation must be determined by the investigators, and a timetable must be faithfully followed. To record the observations, a thorough plan should be created in the form of questions or statements beforehand. It is important to be explicit about how the observation will be recorded. If different characteristics of behavior are given a numerical number, it will be more accurate and objective. To reduce discrepancies in how different researchers record their findings, clear instructions should be given.

Training

The act of observation is not random. It is a procedure that calls for ability and is methodical and scientific. An extensive foundation in the area of the investigator's issue must be acquired, together with the necessary skills, aptitude, and training for observation. To report correct observations, the investigator must have the ability to overcome emotional and cognitive biases. He or she could undergo intensive training on difficulties comparable to these for this aim. He or she should become sharp and sensitive to spot little mistakes in their observations. He or she has to take in-depth and thorough notes on all relevant events.

Precise

He or she should offer an observation that is clear, specific, and unambiguous. The meaning of his or her description should be the same for other investigators as it is for him or her. The investigator's data will be more trustworthy if it is described quantitatively since numerical measurements are more accurate than verbal ones, allowing for additional statistical analysis to be used to remedy the issue.

3. CONCLUSION

In conclusion, A wide range of variables that affect education as a whole substantially affects the dynamics of classroom communication. These variables go beyond only conveying information; they also include components that affect how well people connect and comprehend. The foundation of classroom communication is comprised of verbal and nonverbal clues, with gestures, tone, and body language expressing subtle indications that support spoken words. Cultural variety enhances learning environments but also calls for more cultural awareness to prevent misunderstandings and discrimination. Communication is greatly impacted by the classroom environment, both physically and psychologically. Effective communication is facilitated by a physically well-designed environment and a respectful, honest environment. While increasing access and participation, integrating technology takes careful thought to make sure it enhances rather than interferes with communication.

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CHAPTER 8

FLANDERS' INTERACTION ANALYSIS CATEGORIES SYSTEM: A REVIEW STUDY

Pawas Kumar Mandal, Assistant Professor
College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India, Email Id-
PKM6282@GMAIL.COM

ABSTRACT:

Flanders' Interaction Analysis Categories System, a widely recognized framework in the field of education, offers a comprehensive approach to analyzing classroom interactions. This abstract explores the key components and categories of Flanders' system, which provide a structured means of assessing teacher-student interactions and classroom dynamics. It delves into the various categories, including teacher talk, student talk, classroom management, and task orientation, highlighting how these elements contribute to the overall learning atmosphere. The abstract also examines the implications of Flanders' system for improving teaching practices and enhancing student engagement. Through an analysis of its application in educational research and practical settings, this abstract underscore the significance of Flanders' Interaction Analysis Categories System in promoting effective communication and fostering a conducive learning environment.

KEYWORDS:

Clarification, Disagreement, Evaluative Feedback, Praising, Prompting.

1. INTRODUCTION

The finest basis for systematic understanding of the teaching-learning process in the classroom is verified observation, and this is what interaction analysis offers. In essence, interaction analysis has been used to measure the speech behavior of teachers. It gives a sense of the teaching and learning process taking place in the classroom. The process of encoding and decoding the teaching and learning pattern is essentially what interaction analysis entails. Categories of categorizing statements are created throughout the coding process. Each category is given a code symbol, and the content is recorded by a skilled observer. Even though he may not have been there when the data were taken, a trained analyst decodes the displayed coded data and reconstructs the actual events using the encoded data in the decoding stage[1], [2].

In student teaching or teaching internships, interaction analysis has likely been most useful for the following fundamental purposes:

- Improving your ability to observe instruction
- provide an instrument for analyzing instruction
- Giving students a way to provide feedback on one's instruction
- Creating a framework for learning and practicing certain teaching techniques
- Providing a structure for conceiving and creating different teaching philosophies.

The most well-known teacher-student classroom interaction observation system is the Flanders' Interaction Analysis System, which records and analyzes teaching settings and teacher-student interaction analysis system events. This approach, which uses a variety of categories to encode data, was developed by Ned A. Flanders. As a result, the instructor and students' behavior in the classroom is measured. Both direct and indirect teaching behavior are considered. The observational system is being developed so that a teacher may be

educated to utilize it for planning and analyzing his own teaching activities as well as for analyzing classroom behavior[3], [4].

Basic Interaction Analysis Theoretical Assumptions

The following are some theoretical presumptions that are fundamental to the concept of interaction analysis:

It is verbal communication that predominates in a typical classroom setting. Although non-verbal gestures may be used instead of spoken language in a classroom, verbal behavior is more reliably noticed than the majority of non-verbal behavior. We may often presume that a teacher's nonverbal cues and overall behavior are congruent with his vocal words. This idea was supported by Minnesota studies' experience. The impact of the instructor on the pupils is significant. The behavior of the instructor has a significant impact on the behavior of the students. The relationship between the instructor and the students is essential to the teaching process and must be taken into account while developing methods. It is well known that social atmosphere influences both output and the quality of interpersonal relationships. It has been shown that a democratic environment tends to retain work at a reasonably high level, even when the instructor is not there.The learning process is greatly impacted by the classroom environment.

It is feasible to influence teacher-classroom behavior via feedback, but how much change is achievable and how much is known about how long these changes last will need additional study. A teacher's effect is largely communicated verbally. Although they do happen, nonverbal acts of persuasion are not captured by interaction analysis. These presumptions concentrate on the linguistic interaction between instructors and students during instruction[5], [6].

Flanders' Interaction Analysis Categories

Flanders' interaction analysis classifies all verbal behavior in the classroom into ten types. These ten categories are divided into three primary groups. These are student chatter, instructor chatter, and quiet or perplexity. Teacher discourse falls into seven kinds. The first four of these categories fall under indirect influence, whereas the latter three fall under direct impact. Indirect impact largely promotes student engagement and their right to free speech. Direct influence, on the other hand, limits students' independence and enhances instructor authority. Two categories are used to categorize student conversation, which gives us an idea of the kind of freedom that is granted to the pupils. The third has pauses, silences, and moments of uncertainty.

Observation of Events in the Classroom

The observer commits to memory the 10 categories' respective codes. He spends at least 20 minutes watching the instructor teach while sitting in the classroom. He records the category that most accurately describes the most recent behavior every three seconds. For instance, the observer writes 2 when a teacher encourages a pupil by praising him; 5 when the instructor delivers a lecture. Considering that each number is marked for three seconds, 400 numbers would be marked in 20 minutes. According to the 10 types of verbal contact used by Flanders, the numbers are recorded by the observer in a column on plain paper. The observer should additionally record any extra information that may be relevant[7], [8].

Building an Interaction Matrix

The observer leaves the classroom and performs number chaining or pairing after logging 400 numbers in 20 minutes. It is created as a matrix with 10 rows and 10 columns. One pair is noted at a time while the matrix is built. The first and last numbers in each series should be

the same. It is customary to add 10 to the series' starting and ending numbers. Each pair's first and second numbers stand for a row and a column, respectively. The first number 10 designates a row, while the second number designates a column, for instance, if the first pair is. Every pair touches every other pair. Pairing takes place as follows:

Interaction matrix interpretation

This interaction matrix may be interpreted in a variety of ways. Converting behavior into percentages, which explains the usage of different categories by a teacher during classroom interaction, is the easiest approach to analyze the interaction data. The alternative technique involves converting matrix tallies into specific behavior ratios. These behavior ratios may be calculated using formulae created specifically for this purpose.

2. DISCUSSION

Advantages of Flanders' Interaction Analysis

Due to its many benefits, it is the interaction analysis that is employed the most often. It is a beneficial way of finding, researching, categorizing, and measuring certain factors as they interact inside instructional learning situations, to name a few of its main benefits. Even without an observer present, a clear image of what happened in the classroom may be created with the aid of the interaction matrix. It aids in identifying the style and rhythm of the classroom's instructional behavior. It works well for gauging the social and emotional atmosphere in the classroom. The instructor or trainee teacher would get critical feedback from this analysis on his goals and actual classroom behavior. This technique makes it simple for the employees who supervise or conduct inspections to follow along. It aids in changing teachers' behavior. To compare the behavior of instructors at various age levels, sexes, and subject matters, several matrices may be created and used. For in-service instructors, it is a highly helpful technique. It is particularly beneficial for doing research in the domain of teacher preparation. It complements and adds to existing training methods like team teaching and microteaching[9], [10].

Flanders' Interaction Analysis drawbacks

Additionally, the Flanders interaction method has the following drawbacks:

Due of its focus on verbal behavior, this technique does not give information on other facets of the classroom. This leads to the neglect of certain potentially crucial behavioral characteristics. This process is time-consuming and fairly challenging. The 10 x 10 matrix construction process takes a long time. The primary emphasis of this technique is on teacher speak, whereas student discussion has received very little attention. This approach calls for a highly skilled, trustworthy, and competent observer, all of which are chronically in short supply. It makes no moral judgments on appropriate and inappropriate classroom behavior. In this approach, certain activitiessuch as doing an experiment in science, modeling reading in language, and examining maps and charts in social studiesdo not fit into the proper categories. The interaction analysis system lacks any material. It is mostly focused on verbal communication used to demonstrate social skills for classroom management. Silence and bewilderment have only been given one category. Furthermore, no effort has been made to distinguish between purposeful and non-purposeful quiet.

Teaching

The practice of teaching is seen as a social phenomenon. Teaching is an art where a teacher affects and inspires his pupils to study. Students grow and learn in accordance with the standards that instructors establish for them. Simply said, teaching is a planned series of actions that lead to the accomplishment of pre-set goals. The sincerity and diligence of

instructors are essential to the process of teaching being successful. Since many types of communication are used throughout the whole teaching process, communication plays a significant part in education. Conditioning, training, instruction, and indoctrination are not the same as teaching. All of them, however, could be beneficial to the educational process. In compared to all four of these categories, teaching is more intricate, extensive, and thorough. A teacher should possess a variety of abilities. Let's talk about the whole teaching process and some of the activities that a teacher carries out.

Specifications of Teaching

The following definitions and presumptions about teaching might be used to understand its characteristics: Teaching is an interactive process between a teacher and a student. It is not a one-sided procedure since both the student and the instructor must actively participate. Since teaching cannot take place in a vacuum, it is not an autonomous activity. The instructor attempts to change the behavior of a student or group in some kind of social setting. There are formal and informal ways to teach. It aids in reaching the intended outcomes both ways. The goal of the teaching process is to accomplish a set of predetermined goals and objectives. A teacher should include students in a variety of classroom tasks, including administration, organization, discussion, recitation, and assessment. Teaching is a cooperative endeavor.

The communication process is crucial to teaching. Effective communication abilities provide excitement and life to the classroom. Teaching is not only about inspiring kids to learn; it's also about giving them the tools to do it in a way that is memorable, meaningful, and relevant. The basic goal of instruction is to guide students in accordance with their capacities. The goal of effective instruction is to help students become independent thinkers who can rely on themselves and are self-assured. The three poles of teaching are learning experiences, behavior adjustments, and instructional goals. Feedback is a key component of effective education for both instructors and students. Teaching is remedial, and teachers are expected to help pupils with their issues. Teaching is a process that can be seen, measured, and altered. With the use of numerous supervision approaches and their analysis, a teacher's behavior may be watched and assessed. Teaching is a well-organized activity, and instructors prepare their lesson plans, instructional strategies, and assessment procedures in preparation. The democratic nature of teaching allows for the student to express his opinions.

Variables in Education

The teaching method primarily involves three components. These are spoken about:

Independent Factors

The term "independent variable" refers to a variable that is changed or whose effect on another variable is seen during any operation. A teacher's position as an independent variable in the teaching process. His planning and management of all classroom activities gives him complete control over the instruction process. The instructor is free to carry out his or her duties as a teacher in order to get the desired results from the students. Because of this, the instructor is more autonomous than the pupils. He must assess the kids' capability and create educational goals in line with that. As a result, a teacher is a crucial factor in achieving educational objectives.

Associated variables:

A "dependent variable" is the variable used in any process to measure the impact of an independent variable. Students or learners are dependent variables in the teaching-learning process because they rely on the instructor.

The student is the one who experiences growth and change as a result of the teacher's efforts. The learner must behave in accordance with the teacher's preparation and planning. The student falls into the category of dependent variables as a result.

Influencing Factors

An 'intervening variable' is a variable that is between independent and dependent variables and has the potential to affect dependent variables. In the process of teaching, intervening factors are also crucial because they support the efficient operation of independent and dependent variables, which is essential for the achievement of learning goals. Contents, teaching techniques, the learning environment, the organization of instructional materials, learner background, and students' ability, interest, attitude, and aptitude are some of the intervening factors in the teaching-learning process. These factors are in charge of establishing the necessary teaching environment, teaching materials, and facilities, as well as creating the proper learning contexts or scenarios, which results in the desired interaction between the instructor and the pupils.

Variables' functions

Diagnostic ability

The initial part of instruction is the diagnostic role. The instructor makes decisions on the students' entry behavior and learning goals in this regard. As a result, the instructor solely takes the student and the subject into account while performing the diagnostic function. The student's prior knowledge or fundamental behavior is initially determined by the instructor. Then, after rationally analyzing each component of the subject to be taught, he puts them in the proper order. In this sense, the remedial component of instruction is built on the diagnostic function. The pre-active phase is followed while performing this function. In this role, the teacher makes judgments after taking into account the following factors:

Analysis of the teaching issue

Analysis of the instructional issue is the first element of the diagnostic aspect. Therefore, the instructor should make informed decisions on the fundamental conduct of students in relation to the subject matter. Whether or whether such material is appropriate for them must also be determined. In order to achieve the required goals, the instructor needs make decisions about the students and the curriculum. This choice pays off for the remedial component or the interactive teaching phase.

Analyzing pupils' entrance behavior:

It is possible to pinpoint the pupils' fundamental behavior using the second variable of the diagnostic aspect. The instructor should next teach the students the new information. Its benefit is that after imparting new knowledge, it will be simple to learn about changes in students' behavior.

Therefore, the instructor should design and apply evaluation questions, bearing in mind the contents, which should be trustworthy and valid, in order to determine the fundamental behavior of students.

Individual variations:

The examination of pupil individual differences is the third element of the diagnostic component. According to the concept of individual differences, each student has unique interests, attitudes, skills, talents, and requirements. Therefore, the instructor should carry out the work of teaching while taking into consideration the disparities in students' abilities.

Task evaluation

The fourth element of the diagnostic aspect is task analysis. The instructor should evaluate instruction-related learning activities. The task analysis determines if a lesson is successful or not.

Content analysis on the fundamentals of learning styles

Analysis of the material in light of the kind of learning is the last element of the diagnostic component. The instructor has to be aware of the nature of learning for this. In order to make teaching simple, accessible, transparent, effective, and scientific, he should also be familiar with the strategies and ideas that should be used in different circumstances.

Corrective phase

In the remedial phase, an attempt is made to influence the desired behavioral changes in the students. Therefore, the instructor should consider the unique characteristics of each student while making judgments on the usage of teaching techniques, strategies, tactics, and reciprocal relationships between different factors. Action research must be consulted for assistance in order to address a variety of issues that emerge during instruction. By choosing appropriate teaching strategies and approaches, the teacher should control the teaching variables in such a manner as to achieve the greatest number of learning goals. These two s are present in this aspect.

The first step in selecting instructional methods and tactics is making a decision about them. It should be kept in mind that effective selection and use of teaching techniques and tactics are essential to both teaching and learning. Therefore, the instructor should carry out this crucial role in line with his or her skills and expertise. Configuration of feedback devices: The configuration of feedback devices is the second crucial step in the remedial phase. Here, it is crucial to emphasize that effective teaching depends on effective feedback. For this reason, feedback serves as reinforcement for the student, which in turn inspires and motivates learning. As a result, the instructor should provide the students the feedback they need throughout class to inspire and motivate them.

Analytical stage

The third significant instructional variable is evaluation. The diagnostic component is assessed at this phase. It should be kept in mind that this evaluation's criteria is goal accomplishment. If the goals are met, the teacher's solution is appropriate; if not, it is flawed. In other words, if the teaching goals are not met, the instructor shouldn't place the responsibility for the failure on the student. In order to accomplish the goals, he needs alter the diagnostic aspect's variables. Regarding this, it's important to keep in mind that this element corresponds with the post-active phase. The following are significant components of this aspect:

Building the criteria exam is the first step in the assessment process since it gives precise information about how remedial training has affected the behavior of the students. The objectivity of the criteria test is its primary quality. To put it another way, this test is legitimate and dependable. As a result, the instructor should take considerable care while creating the criteria exam.

Evaluation of behavioral changes

The assessment of students' behavioral changes makes up the second phase of evaluation. Based on the criteria exam, the instructor should carry out this task.

Diagnosis

Diagnosis is the last component of assessment. Knowing the degree of teaching effectiveness via assessment is diagnosis. The instructor should choose the kind of adjustment that should be implemented if it is unsuccessful. The planning, organizing, leading, and directing of the teaching process should be redone if the learning goals were not met as a consequence of their utilization.

Teacher Training

By offering learning opportunities, educational institutions play a crucial role in guiding their pupils from ignorance to knowledge. Teachers are the most essential individuals in the institutions who contribute significantly to this development. The teacher is the most crucial component of any educational program, according to NCTE in Quality Concerns in Secondary Teacher Education. This demonstrates that it is essential to invest in the training of teachers in order to ensure the security of a nation's future. The teacher is primarily responsible for implementing the educational process at any level. It is impossible to overstate the value of qualified instructors to the country's educational system. Both initial and ongoing teacher education must meet the demands and expectations that the National Curriculum Framework, 2005, sets on the teacher.

It is commonly established that teacher competency, sensitivity, and motivation play a major role in determining the quality and degree of student accomplishment. Teacher education is described as "A program of education, research, and training of persons to teach from pre-primary to higher education level" by the National Council for Teacher Education. The development of a teacher's proficiency and competency is a program connected to teacher education that will equip and empower the teacher to fulfill the demands of the profession and tackle the problems within.

Teacher preparation programs were known as teacher training from 1906 to 1956. According to Goods Dictionary of Education, teacher education refers to "all the formal and non-formal activities and experiences that help to qualify a person to assume responsibilities of a member of the educational profession or to discharge his responsibilities more effectively." It trained instructors to be technicians or mechanics. It had more restricted objectives and concentrated exclusively on skill development. As a result, the viewpoint and breadth of teacher education were severely constrained. Animals and circus performers get training, while humans receive education, as stated by W.H. Kilpatric.

Teaching techniques, strong pedagogical theory, and professional skills are all included in teacher education. Teaching skills would entail giving education and practice in the many methods, approaches, and procedures that would aid instructors in creating lesson plans, delivering teaching, giving appropriate feedback, and carrying out efficient assessments. It includes communication skills, preparedness for and utilization of lessons, and efficient classroom management.

The philosophical, social, and psychological aspects that make up pedagogical theory provide instructors a solid foundation on which to practice their teaching techniques in the classroom. Professional skills comprise the tactics, strategies, and approaches that would assist teachers to progress in the profession and also contribute towards the growth of the profession. The theory is stage specific and is based on the demands and requirements that are distinctive of that stage. It encompasses interpersonal, computer, information retrieval, and managerial abilities as well as soft skills like counseling and lifelong learning. The correct knowledge, attitude, and abilities would be developed in teachers via a combination of instructional techniques, pedagogical theory, and professional skills, encouraging holistic growth.

Teacher Education's Nature

1) Pre-service and in-service components of teacher education work in tandem and are ongoing processes. Pre-service, Induction, and In-service are the three stages of teacher education, according to the International Encyclopedia of Teaching and Teacher education. The three stages are thought of as components of an ongoing process.

2) Since teaching is seen as an art and a science, the teacher must learn not just information but also skills known as "tricks of the trade." Teacher education is founded on the premise that "Teachers are made, not born," in contrast to the presumption that "Teachers are born, not made."

3) A wide and thorough education is provided for teachers. In addition to pre-service and in-service programs for teachers, it is intended for them to participate in a range of community programs and extension activities, such as adult education and non-formal education programs, literacy initiatives, and societal development initiatives.

4) It is dynamic and always changing. Teacher education has to be current with current events and trends in order to train instructors who are capable of handling the difficulties of the modern, dynamic society.

5) The curriculum, design, structure, organization, and transaction modalities of the overall teacher education process, as well as the degree of its appropriateness, are what matter most.

6) The teacher education curriculum, like other professional education programs, includes a knowledge foundation that is responsive to the requirements of field applications and incorporates meaningful, conceptual blending of theoretical understanding accessible in multiple related fields. However, the knowledge base in teacher education consists of a separate body of knowledge rather than just an amalgam of ideas and principles from many fields.

The "conceptual blending" results in the "gestalt," which appropriately specifies it.

7) Stage-specific programs have been developed to differentiate teacher education. This implies that the knowledge base should be used to create efficient methods for preparing entrant teachers for the roles that a teacher is expected to undertake at each level since it is sufficiently specialized and diverse across stages.

8) It is a system in which its inputs, processes, and outputs are interdependent.

3. CONCLUSION

In conclusion, understanding and improving classroom interactions have been made possible by Flanders' Interaction Analysis Categories System. Its categories provide a thorough framework for methodically assessing and enhancing teaching methods, student involvement, and general learning environments. Teachers may acquire insights into their teaching practices and pinpoint areas for development by classifying interactions into parts like teacher talk, student discussion, classroom management, and task orientation. The approach encourages teachers to create a balance between giving students clear instructions, encouraging meaningful student engagement, having a well-organized classroom, and keeping pupils focused on their academic work. The actual implementation of Flanders' approach has advantages for teacher training programs, curriculum creation, and educational research in addition to the classroom. By examining interactions, teachers may improve their methods, adjust to different student demands, and provide a welcoming and active learning environment.

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CHAPTER 9

IMPACT OF TEACHER EDUCATION ON STUDENT OUTCOMES

Rashmi Mehrotra, Professor
College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India,
Email Id- rashmi.tmu@gmail.com

ABSTRACT:

The need for effective teacher education stands as a cornerstone for the development of quality education systems worldwide. This abstract explores the multifaceted reasons behind the crucial requirement for well-structured and comprehensive teacher education programs. It delves into the evolving role of educators in modern society, highlighting the complexities they face in diverse classrooms. The abstract examines the impact of teacher education on student outcomes, classroom management, and pedagogical innovation. It also addresses the integration of technology, cultural competence, and inclusive practices as essential components of contemporary teacher training. By analyzing empirical studies and educational trends, this abstract emphasizes the significance of investing in teacher education to nurture skilled, adaptable, and empowered educators who can shape the future of education.

KEYWORDS:

Classroom Practices, Education Pedagogy, Effective Teaching, Professional Development, Student Achievement, Teacher Preparation.

1. INTRODUCTION

"The caliber of a country is determined by the caliber of its people. The caliber of its population is not only, but in a significant degree, influenced by the caliber of their education, which is mostly determined by the caliber of their teachers.There should be a gifted and committed teacher in every school in every community. If we attract talented individuals to the profession and provide them with the best possible preparation and training, we have a huge chance to guarantee teacher quality long into the twenty-first century[1], [2].The following factors make teacher education necessary.

1) It is well known that one of the crucial elements of the necessary learning environments for accomplishing a country's educational objectives is the academic and professional standards of instructors. If teacher preparation was to have a beneficial impact on the standard of curriculum implementation in classrooms, student learning, and broader societal transformation, the emphasis of teacher preparation needed to change from training to education. The following areas require more emphasis.

2) Ensuring that teachers have the knowledge and skills necessary to carry out their duties as well as their responsibility for ensuring that all students achieve high levels of learning and behave accordingly is essential to providing all children with a high-quality education[3], [4].

3) The views, values, commitments, personalities, and moral codes that people bring to teacher education influence who they are as teachers and what they are able to learn throughout teacher education and in the classroom. In order to lead and motivate teacher candidates' learning and practice, it is crucial to assist them in critically examining their ideas and values in relation to teaching, learning, and subject matter.

4) According to the National Academy of Education Committee's report, instructors often face complicated choices that may have a significant impact on students' futures and that need a variety of knowledge and judgment. Teachers must be aware of the many ways that

student learning might take place in the context of development, learning differences, linguistic and cultural factors, as well as individual temperaments, interests, and learning techniques in order to make wise judgments. Teachers need to be able to take the steps necessary to gather additional information in order to be able to make more informed decisions about what is going on and what approaches might be helpful. This is in addition to having a solid understanding of the foundational concepts related to the learning and performance areas mentioned in the aforementioned quotation. More significantly, instructors must place the interests of the students at the forefront of all decisions they make.

5) Like any other educational intervention, teacher education can only affect professional commitments or dispositions that are amenable to change. Even while we cannot change another person's nature, we can change the way we see them and establish a professional rather than a personal role orientation toward the activity of teaching.

6) Teacher performance is the most important contribution in the area of education, according to the Ministry of Education publication "Challenge of Education: A Policy Perspective." Whatever regulations are put in place, instructors ultimately have to carry them out via both teaching and learning procedures as well as personal example. The development of new technologies that will likely revolutionize classroom instruction has reached an inflection point in India. The education system cannot become a self-sufficient and potentially useful tool for fostering national growth unless qualified and dedicated teachers are employed. The teacher must develop the necessary information, abilities, interests, and attitudes toward teaching. In light of the latest sociological, psychological, and philosophical ideas as well as contemporary media and resources, the teacher's task has grown more intricate and sophisticated. With well thought out, creative pre-service and in-service training programs, the teacher may become competent.

2. DISCUSSION

Aspects of teacher education

Teacher Education at Various Educational Levels

Pre-primary, Primary, Elementary, Secondary, Higher Secondary, and Tertiary instructors are all impacted by teacher education. Each level has different educational demands and expectations. Thus, it is crucial for teachers to be prepared according to level and stage. Teachers at professional institutions benefit from teacher education by developing their teaching abilities. Only the academic and practical aspects of their particular disciplines are known by the lecturers at professional institutions. To cope with pupils who are just starting their careers, they need inputs for specific teacher training. Special education and physical education are included in teacher education. As a result, teacher education would be present wherever there are instructors. To create efficient methods for training new instructors for the tasks they are expected to execute at each step, the knowledge base is sufficiently specialized and diverse across stages[5], [6].

Basis of Teacher Education

Building a solid academic and intellectual grasp of topics connected to Teacher Education at Each Stage of Education is required. This entails choosing theoretical information from fields related to education, such as psychology, sociology, and philosophy, and transforming it into formats appropriate for teacher education. Philosophy, sociology, and psychology are the subjects from which teacher education draws its material. These fields provide the groundwork for a better understanding and implementation of teacher education. The philosophical foundation enlightens student teachers on the implications of different philosophical schools, ancient and contemporary philosophical ideas, and philosophical

thinkers' views on education and its various facets, such as curriculum design and discipline. The sociological foundation aids student teachers in their understanding of society's dynamics and place in a country's and the world's educational systems. It includes the principles that shape both the domestic and global landscapes. The psychological foundation aids student instructors in gaining understanding of the psychological makeup of their pupils. This helps the student instructors understand themselves, their students, and the learning settings so they can provide their students engaging and applicable learning experiences[7], [8].

Topics of Teacher Education

Who, whom, what, and how are only a few of the topics that teacher education is concerned with. The caliber of teacher educators affects the quality of teacher education. The effectiveness of pedagogical inputs used in teacher education programs and how well they are used to prepare future teachers are heavily dependent on the professional competence of teacher educators and how that competence is applied to improve the teacher education program. Thus, the fundamental concern of teacher education is the development of competent teacher educators.

By giving student teachers the necessary information, attitude, and skills to succeed in their teaching careers, teacher education reaches out to them. It helps to provide the conceptual and theoretical foundation necessary for student instructors to comprehend the nuances of their line of work. It attempts to instill in student teachers the appropriate attitude toward the stakeholders in the profession so that they may handle environmental concerns in a very constructive way. It equips student instructors with the knowledge and abilities necessary to perform their duties in the most time- and cost-efficient ways possible. Therefore, the subject matter of teacher education is taken into consideration[9], [10].

The Indian scenario for teacher education

Even under difficult conditions, India's long-standing legacy of education has maintained its inherent strength. Major initiatives to support and improve teacher education were undertaken throughout the post-independence era. Due to attempts to universalize primary education, the system of teacher training has come under intense strain as a consequence of the development and extension of school education.

National Policy Effects

Since gaining its independence, India has achieved significant strides in the areas of general literacy, infrastructure, and enrollment in and access to schools. The National Curriculum Framework for school education, developed in 2005, and the political acceptance of universalizing elementary education, which resulted in the Right to Education Bill, 2008, provide the context for the current reform in teacher education.

With the passage of the bill by the Parliament and the creation of the Right to Education Act, the state is now required to give over 20 crore children in the 6–14 age range with free and compulsory education up to the eighth grade. The Act stipulates a timetable for how schools must operate, including a teacher-student ratio of 1:30 up to a primary school student enrollment of 200. The need for skilled primary school teachers would rise as a result. In the next years, the nation will need to meet the need for a big supply of teachers who are highly qualified and have received professional training. The launch of the huge Sarva Shiksha Abhiyan in 2002, as well as the most recent financial and educational commitments to support the aim of Universal Elementary Education, have brought attention to the need of properly preparing teachers to meet the rising demand for high-quality education.

Changes in the educational system

Since independence, there has been a substantial advancement in school education. According to government estimates, while 82% of the 20 crore children between the ages of 5 and 14 were enrolled in school, 50% of these kids are leaving school before they reach class 8. There are still many problems with the actual situation. Disparities in geography, society, economy, and gender are creating new problems. This fact makes it more difficult for the aspiring teacher to put the Right to Education Act into practice.The national commitment to meeting the primary education requirements of all students in the 6-14 age range in an inclusive environment is severely threatened by the school system's ongoing fragmentation. However, the right of all children to a high-quality education has been severely compromised by the growing commercialization and segmentation of the educational system.

Changes in the Teacher's Role

Children are under a great deal of stress because of the existing educational system. Educationists believe that treating information as a "given," an external reality existing outside of the student and ingrained in textbooks, is the burden. Fundamentally, knowledge is a human creation, an ongoing process of reflective learning. According to the NCF 2005, a teacher must facilitate children's learning in a way that helps the kid build knowledge. Teachers are not information dispensers, and education is not a mechanical process of information transfer. Teachers are being called upon to function as the key middlemen through which the curriculum is negotiated.

Problems with Teacher Education

The current state of teacher education is characterized by the unprecedented growth of institutions and programs for teacher education during the last several years. The need for teachers increased naturally as a result of rising student enrollment in schools and the introduction of pan-Indian primary education development programs including Operation Blackboard, District Primary Education Program, Sarva Shiksha Abhiyan, and Universalization of Elementary Education. Additionally, the system's backlog of untrained instructors and the demand for pre-service teacher certification for appointment as a teacher increased the strain already placed on the institution's capabilities. Market factors have led to an exceptional growth in the number of teacher education institutes throughout the majority of the nation due to the demand greatly outstripping the supply. The numbers increased to 14,523 courses in 12,200 institutions with an enrolment of 10,73,661 at various levels in December 2008, up from 3489 courses in 3199 institutions and 2,74,072 students in 2004. Quality indicators including infrastructure, teacher learning resources, and student profile have suffered greatly as a result of this growth. The whole field of teacher education need urgent, all-encompassing overhaul. At all levels of education, there needs to be more alignment between professional preparation and ongoing professional development for teachers in terms of level, length, and structure. It is essential that the whole process of teacher education be elevated to the level of higher education, and that the length and rigor of programs be suitably increased, given the complexity and relevance of teaching as a professional activity.

Investigation and Innovation

More research is required to reflect on and analyze practices, whether it be in programs or specific classrooms, so that it may be added to the body of knowledge that student teachers can study. Such study must be conducted by academic units and research organizations. Additionally, there is a need to experiment with various teacher education approaches. The ability of an institution to innovate and create is a requirement for the pursuit of greatness. As

a result, research has received a lot of attention in the current environment. Major or small research projects are recommended for many teacher educators to undertake.

Universal Education

There are two types of exclusion that are common in schools: the exclusion of children with disabilities and the social exclusion of students from disadvantaged socioeconomic and societal backgrounds. Teachers must be given the tools they need to overcome their prejudices in this area and successfully navigate these difficulties.All children with disabilities are entitled to free and compulsory education up to the age of 18 under the 2005 Persons with Disabilities Act. For many years, the fundamental national priority of education has been the education of socially and economically disadvantaged groups, particularly the SCs, STs, and minorities. Girls' enrollment and retention rates, as well as their involvement, continue to lag behind males'. If socioeconomic disadvantage is to be eradicated via education, teachers will need to be specifically prepared.

Considering equitable and sustainable development

Future citizens must be educated from the perspectives of gender equity, perspectives that foster values for peace, respect for everyone's rights, and perspectives that respect and value work in order to develop future citizens who promote equality and sustainable development for all societal segments and respect for all. Children need to be taught to adjust their consumption habits and the way they see natural resources in the current ecological catastrophe, which is fueled by overly commercialized and competitive lives.The rising stress in society is also contributing to an increase in violence and divisiveness among youngsters as well as inside them. In order to promote principles of peace based on mutual respect for oneself and others, education is essential. This is also what the NCF 2005 and future syllabi and materials creation attempts to achieve.

Community knowledge's role in education

The connection between formal knowledge and local knowledge is crucial for the conceptual growth of children as well as the practical application of classroom information. The NCF 2005 advocates for the incorporation of pedagogy and curriculum that are tailored to local needs.

ICT in Schools and Online Education

There is an increasing need for information and communication technology to be taught in schools as a result of its introduction and growth. The framework of teacher education is intended to help educators recognize when an ICT tool is being used in a way that is beneficial to students' development and when it is not. Additionally, it must provide instructors the skills they need to utilize ICT for their own professional growth. In light of the aforementioned debate, the newly proposed NCERT Teacher Education Program is as follows:

Newly envisioned program for teacher education

emphasizes learning as a self-learning, collaborative activity taking place in the learner's social environment as well as a larger social context including the community to the country. fully trusts in the ability of schoolchildren and student teachers to study on their own and in the development of effective educational programs. believes that learning is a process in which the student actively participates. His or her potentials are seen as able to grow via experiences rather than being fixed.A thorough understanding of teacher education is necessary since it is a global vocation. Understanding the profession from a worldwide viewpoint, making predictions regarding it for the near future, and using the greatest

conceptualizations and instructional models now accessible are all crucial. Professionally, strong instruction is crucial and becoming more prevalent in our modern culture due to the wave of innovative efforts for the growth and evolution of people. The levels of learning would be higher in the 21st century than they were in the 20th century as a result of these advancements and progress. As a consequence, in order for teachers to succeed and thrive in the schools of the twenty-first century, they would need to learn new general and specialized knowledge and abilities. Success of both people and countries depends more and more on education. Growing data suggests that among all educational resources, teachers' skills are among the most important factors in students' learning and, as a result, in a country's ability to grow in its social, political, and economic sectors.

1.Innovative teacher preparation programs in the globalized society of the twenty-first century.

For dynamic teacher education and training in the globalized world of the twenty-first century, institutions of teacher education and training must create curricula that would aid aspiring teachers in deeply knowing and understanding a wide range of things about teaching and learning as well as in their social and cultural contexts. Additionally, they must be able to apply these understandings in challenging educational settings with a wide range of pupils. If the 21st-century teacher is to be successful in this endeavor, teacher education and training institutions must continue to develop programs that change the kind of environments in which both beginning and seasoned instructors instruct and develop as teachers. This means that, despite all the challenges, the business of teacher education and training must expand even more and work even closer with schools to implement a shared reform goal. It is crucial that teacher education and training institutions take on the responsibility of informing policy makers and the general public about what it really takes to teach effectively, including the knowledge and skills that are required and the school contexts that must be established to enable teachers to develop and use their knowledge on behalf of their students.

2.A globalized teacher education and training curriculum's structure.

Reform and innovation activities by countries have sparked a lot of debate concerning the organization of programs for teacher education and training as well as the certification categories that these programs are likely to fall under. Building more effective teacher preparation models in the twenty-first century will need knowledge material that is both competent and progressive for teaching and knowledge content for the disciplines that the teacher will be expected to teach. In this regard, the curriculum's main emphasis should be on the "what" of teacher education and training.

There are several methods to fake the knowledge that instructors would require in order to do their jobs effectively. There is a need for a framework to direct choices and practice when defining the basic ideas and skills that should be included in a common-core curriculum for teacher education and training. The National Academy of Education Committee on Teacher Education in the United States adopted a framework that is based on three interconnected areas of knowledge that are mentioned in many statements of standards for teaching and that would be appropriate for inclusion in curricula for teacher education and training in the twenty-first century.

The curriculum should be aware of how society's requirements are always changing, how the world is becoming more globalized, how technology is advancing and proliferating, and how conventional classroom instruction is losing ground to distance-virtual learning. The curriculum's material should consider the classroom of the twenty-first century. The cutting-edge hardware and software that will be used often in classrooms in the twenty-first century

should be taught to teachers. Telecommunications, satellite access, networking, the internet, video conferencing, and digital components should all be included in technology training in addition to optical technology. These tools will make it possible for a teacher of the twenty-first century to feel comfortable and instruct students successfully and efficiently. The shifting global employment pattern is another possibility. In the twenty-first century, there will be an increase in the number of occupations that exist in the contemporary world. In order for teachers to be ready to take on numerous tasks and occupy their proper places in the teaching-learning environment and boldly address these problems, new paths in teacher education and training should take this into consideration. We can only give our instructors with the necessary training, expertise, and experiences if we want to raise the standard of education for all of our pupils. One that stands out is the 21st century teacher's capacity to manage the disruptive behavior of kids in the classroom, which makes it difficult for the teacher to function effectively and efficiently and, in some cases, even jeopardizes the safety of both students and instructors. Such issues might become more serious in schools in the twenty-first century, thus teacher education and training programs should provide educators the information and managerial abilities they need to deal with issues of this sort successfully.

The curriculum for teacher education should be open to all students and place a strong emphasis on lifelong learning, the advancement of technology and its uses, and developing techniques for workable alternatives that will benefit students. The importance of democratic values and procedures should be emphasized. Teachers will begin to see the role of schools and their contribution to the development of democratic ideals, competencies, and behavior from a global perspective as a result of the institutionalization of democracy. The show of teacher education and training should be carefully addressed in the program designs and pedagogies. It is crucial to have well designed courses that provide both sophisticated research background and fundamental topic knowledge for teaching. A teacher of the twenty-first century must be a teacher-researcher at heart, so it is equally important to structure the experiences of aspiring educators so that they can effectively integrate and apply the knowledge they have learned in the classroom. This often ends up being the most challenging part of developing a teacher education and training program. The burden of the problem is on teacher education and training to address both the what and the how so that teaching knowledge actually shapes teachers' practices and empowers them to become adaptable experts who are versatile and capable of operating effectively and efficiently in a variety of teaching and learning environments using the tools that have been provided to them during their training.

According to Lortie, achieving the goals outlined above necessitates addressing unique difficulties associated with teacher preparation. There are three interconnected difficulties that are brought up when discussing how instructors in the twenty-first century must learn to comprehend teaching in ways that are quite different from how they themselves learned to do so. The learning that occurs as a result of being a student in a conventional classroom environment is what Lortie refers to as the apprenticeship of observation. Learn to "act like a teacher" as well as "think like a teacher." Kennedy refers to this as the enactment difficulty. Teachers must be able to comprehend and do a broad range of tasks at once in order to be effective in their profession. Be able to comprehend and react to the complex and multidimensional classroom environment, balancing many academic and social objectives that sometimes and continuously need trade-offs. In summary, teachers in the twenty-first century must learn how to manage the complexity issue, which is made more pressing by the changing nature of teaching and learning in the teaching-learning environment.

3.   CONCLUSION

In conclusion, in today's fast-paced educational environment, the necessity for teacher preparation has never clearer. By forming the brains of the next generation, educators play a crucial part in determining the future. The cornerstone around which this revolutionary process is constructed is effective teacher education. Teachers are given the pedagogical skills, approaches, and insights they need to deal with the many difficulties that arise in contemporary classrooms via teacher education. Teachers must have the abilities to modify their approaches as education becomes more inclusive, individualized, and technology-driven. Comprehensive teacher preparation programs equip educators to develop critical thinking, creativity, and emotional intelligence among students in addition to preparing them to efficiently transmit information. Additionally, inclusive practices and cultural competency are introduced via teacher education. Teachers must be prepared to accommodate the needs of different student populations in a world that is becoming more linked, ensuring that each student has an equal opportunity to learn and thrive.

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CHAPTER 10

MODELS OF TEACHER EDUCATION AND TRAINING FOR THE 21ST CENTURY

Naheed Bi, Assistant Professor
College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India,
Email Id- naheedbi555@gmail.com

ABSTRACT:

The 21st century presents an ever-evolving educational landscape that demands innovative and adaptable approaches to teacher education and training. This abstract explores various models that have emerged to meet the unique challenges and opportunities of modern education. It delves into competency-based frameworks, technology-integrated approaches, and experiential learning models that equip educators with the skills needed to navigate dynamic classrooms. The abstract examines the role of collaboration, cultural sensitivity, and lifelong learning in shaping these models. By analyzing case studies and educational trends, this abstract highlights the importance of aligning teacher education with the demands of the 21st century, preparing educators to foster critical thinking, digital literacy, and global citizenship. Experiential learning models, such as student teaching and service learning, immerse educators in authentic classroom experiences. These approaches bridge the gap between theory and practice, allowing future teachers to refine their skills and adapt to the diverse realities of modern classrooms.

KEYWORDS:

Mobile Learning, Online Collaboration, Personalized Learning, Remote Learning, Simulation, Virtual Reality (VR).

1. INTRODUCTION

Models of teacher education will be a challenge for the new paths. New models would need to be created in order to allow instructors to easily adjust to the changing times. The present models need modification and innovation. In order to develop taught thinkers rather than learned monsters, the new models should place an emphasis on learning to do and learn[1], [2].

A. Participatory teacher education is a must. According to this paradigm, future instructors should actively participate in the training process. They should take part in choices on the demands that their training must meet, the issues that must be fixed in the everyday working environment, and the particular knowledge and abilities that must be imparted to them. Teachers must be self-directed and self-taught in the participative paradigm. Reflection and introspection must be the foundation of every component of the training. They must properly describe, assess, and analyze the needs, issues, statuses, and roles. It is important to stress the real, practical experiences of working with kids. In order to solve issues, trainers must be able to help teachers explore and analyze their implications as a group.

B. The value of technology for the education of both instructors and students should not be overlooked in the new teacher education and training. When instructors have received quality training in them and have realized the potential of technology, they will possess its true power. Teachers would then be able to help pupils acquire the behaviors they are meant to learn, preventing them from growing up to be learned monsters but rather more creative, human, and productive people.

C. Teachers must have practical research expertise and in-depth subject knowledge. In the twenty-first century, research must be given top importance in teacher education and preparation. Professional educators have a natural curiosity for information and look for solutions to issues in order to aid their pupils in learning.

In terms of the selection of texts, literature, the suitable and relevant integration of technology, curricular pedagogy, assessment, and measurement, they are decision-makers and make hundreds of decisions every hour. They are very perceptive and considerate to their pupils' needs. They experience both accomplishments and setbacks. But a lot of what instructors have to give is still kept a secret. Their secret to success is unknown. By revealing the classroom's hidden mysteries, teachers strive for alternative ways to see their own, as well as their students', worlds of teaching and learning. One of these strong keys to unlocking these mysteries is research.It is necessary to examine idea research and how it relates to the teaching-learning environment, particularly in the context of 21st-century schools. This will help the professional teacher to understand how important research is to their line of work. Because of this, "research" in this debate will be interpreted to indicate systematic study of a phenomena with the goal of discovering answers, solutions, or knowledge as well as detecting patterns among what is examined so that action might be made to halt or improve the situation. There are several issues of all sizes and types in the teaching-learning environment, and in a school setting for the twenty-first century, these issues would triple. Every time such issues arise and endanger the pupils' survival and advancement, a rigorous analysis must be done to identify answers that will remove the threat and make the situation better[3], [4].

The following requirements must be fully met by teacher education and training institutes if teachers in the twenty-first century are to see themselves as researchers and utilize research to enhance their profession. Preschool, primary, secondary, and tertiary teachers should all complete a short, in-depth course in research methods as part of their education, not just to satisfy the requirements for a degree or diploma. This course should conceptualize and focus on the work that teachers do in their daily practice. Teachers must be the first to initiate research in the teaching-learning environment that has a significant impact on their professional practice when they are equipped with the necessary content, practical knowledge, and research skills. This is because they have the knowledge, skills, and experiences regarding the needs of their students, the situations that they face, as well as the daily operations of the educational institutions in which they are based. They must be able to make and carry out decisions on research in their working environment that have an impact on their condition and the development of their professional practice as educators. With the support of the teachers, educational research projects that are focused on teachingwhether in the classroom or to enhance the whole school environmentcan be successful. Only thorough instruction from the institutions, which they will get, will allow them to do this task properly.

Using a worldwide teacher's council to enlarge the teaching profession

To register professionally certified teachers before they may practice, each nation now has its own teaching council. Professional instructors must adhere to local standards in order to be registered and certified to teach in each nation. Even within the same nation, such as the USA, Australia, and the UK, becoming a teacher requires waiting. In the USA, each state has its own teaching council that registers certified instructors who are professionally prepared and have a license to practice. A closer examination of this situation finds that teacher transfers between states within the same nation are burdensome, if not delayed, due to the severe teacher shortages in these nations. A globalized teaching council for the twenty-first century is necessary to make teaching a movable profession worldwide. This council's

mandate should be to work with institutions and organizations that are in charge of teacher education and training to develop common-core curricula. It should also be to establish a council for teacher professional registration, which would be charged with issuing professional teaching licenses for practitioners that would be recognized internationally to facilitate and ease teacher mobility from region to region and country to country.

- The need for teacher-tracer research and ongoing professional development by institutions that prepare teachers.
- The need for more community and parental engagement in managing the globalized schools.

Educating teachers in India before independence

The teacher had a distinct role and rank in Vedic India. He was well regarded by the community for his knowledge and intellect as well as his mind, heart, and hand skills. The Guru or instructor served as a symbol of virtue, a source of wisdom, and a refuge for spirituality. The process of choosing and preparing a teacher was quite meticulous.The Rigveda states that a teacher was chosen and then skillfully instructed or trained. Before being permitted to teach, the prospective teacher had to complete the approved curriculum and perform all requirements of a Brahmachari. Teachers must have pursued information in order to realize themselves, and they were well-liked and respected. The elite group of instructors, who ultimately evolved into a caste, lost much of its former splendor as a result of stratification through time. Later, instructors came from this caste of Brahmins, and the profession was passed down through the family[5], [6].

Manu mentioned that a teacher's son would sometimes assist his father by taking over the classroom. Some of the more capable and older students served as monitors and sometimes helped the instructor with his job. The contribution of the prehistoric educational system was this monitorial system, which was a means of acclimating students to the role of instructors.The Upanishad era was notable for its individualized approach to instruction. There existed an intimate interaction between the instructor and the pupil, as the name upanishad implies. The instructor had the discretion to accept a pupil, but if he did, it was his moral obligation to see that the disciple advanced. A disciple or pupil also had the option to choose his instructor. Oral transmission of knowledge made explanations a crucial teaching strategy. The techniques utilized by instructors were imitated, embraced, and passed down from one generation of teachers to the next by the students. The techniques were still being passed down via initiation and repetition. The subject was made exciting and relevant for the pupils by the good instructors' own approaches and real-world experiences. The five stages to comprehending the significance of a religious truth practiced in ancient India were listening to the uttered words, understanding their meaning, reasoning that led to generalization, confirmation by a friend or instructor, and application.

2. DISCUSSION

Buddhist period

Every novice was supposed to put himself under the supervision and direction of a preceptor upon admission in accordance with the monastic system, which was a key component of Buddhism. The disciple would carefully choose an upajjhaya and treat him with the highest reverence. In contrast, the upajjhaya had a lot of obligations to the novice, Saddhiviharika. He was to educate, question, exhort, and encourage the disciples in order to provide spiritual assistance and encourage religious study among them. The disciple had to receive complete care from the instructor. In addition to oral recitation, the professors also used explanation, debate, discussion, question-and-answer sessions, and the use of tales and parables. Hetu-

Vidya, or the inductive technique, was used in vihars and monastic institutions to teach the disciple's mind. The addition of logic as one of the courses contributed to the emphasis placed on oratory and the development of the mind[7], [8].

Middle eastern period

Education is recommended as a responsibility in the holy Koran, and it is highly valued in Muslim nations. Although it was not widely accepted, teachers and professors were highly respected. In their lands, the Mohammedan emperors of India established educational institutions including colleges and libraries. The maktab, which is often affixed to a mosque, served as a classroom where pupils learned to read, write, and do basic mathematics in addition to learning the Koran, which they were required to recite. Although Arabic was a required subject, Persian was the primary language of teaching. Grammar, rhetoric, logic, theology, philosophy, literature, jurisprudence, and sciences were all included in madrassah courses. While academic individuals were engaged in the madrassahs, the majority of the instructors in the maktabs were moulvis. The majority of the teacher training process was starting where the previous instructors left off. Good, seasoned professors with a keen eye for talent hired capable students as tutors to supervise and instruct the younger pupils in their absence. Thus, the monitorial system, which served as a means of training future teachers, was popular throughout the medieval era as well. Both society and the pupils they taught appreciated and held the instructors in high regard. There was a lot of memorizations and cramming at this time. The instruction was given orally. The lecturing approach was used by the professors. Books were recommended to students. In practical topics like medicine, practicals were also undertaken. Each topic, including politics, philosophy, logic, and religion, was likewise approached analytically and deductively. The instructors had a strong understanding of their roles, responsibilities, and the instructional strategies to be used despite the lack of a dedicated program for teacher training.

Before the British colonists arrived in India, European missionaries first established schools for academics and then instituted teacher preparation programs. In Serampur, close to Calcutta, the Danish Missionaries founded a normal school for teacher training. Dr. Andrew Bell began the Monitorial System experiment in Madras, which served as the foundation for the current teacher preparation program. It was called the Bell-Lancaster method and used in England. This technique, which asks the more advanced students to tutor the less advanced, was praised by Mr. Campbell, the Bellary Collector, in his Minute of August 17, 1823. It was also highly accepted in England. In his Minute of December 13, 1823, Sir Munro outlined similar suggestions for enhancing teacher education. He proposed raising their pay and offering alternative curricula to Hindu and Muslim instructors. The first normal school in Madras opened its doors in June 1826, managed and funded by the British government. At first, it was designed to train teachers for the local schools. This regular school eventually became the Presidency College. The Elphinstone Institution in Bombay opened a normal school in 1847, and Calcutta followed suit in 1849.

Wood's Despatch

On July 19, 1854, The Wood's Dispatch, a significant educational work, was published. It was rightfully referred to as the most significant piece of information on English instruction in India. It provided several quite helpful recommendations for enhancing teacher education. It was proposed that rewards be provided to those with the aptitude for teaching and willingness to dedicate themselves to the career of schoolmaster. The Dispatch made reference to the system in place in England when it called for a reform in the training of teachers. It called for the establishment of training facilities in each Indian presidency. According to the Dispatch, India should adopt a pupil teacher system and provide student teachers awards or stipends in

addition to minor payments to the headmasters of the schools to which they were assigned. When the training program was successfully completed, students were supposed to get certificates and jobs. The Dispatch thus provided the potential instructors with a strong enough incentive. The Governor-General of India, Lord Dalhousie, proposed implementing Wood's Dispatch, which resulted in the establishment of a number of normal schools, notwithstanding his reservations[8], [9].

Lord Stanley's Dispatch

The 1854 Dispatch was examined in 1959 by Lord Stanley, the Secretary of State for India, in his Dispatch. The Dispatch strongly advocated for local availability of instructors for vernacular schools and advised the authorities to stop hiring teachers from England.

The Indian Education Commission

An examination in the principles and practice of teaching should be established, and passing it should go forward be a requirement for permanent employment as a teacher in any secondary school, whether it is government-run or privately funded. This was the recommendation of the Indian Education Commission in 1882. It recommended a shorter training program for graduates than for others. Courses in education become increasingly common. As a result, more schools for teacher preparation began to develop, and by 1882 there were 116 for men and 15 for women. As a result, by the end of the 19th century, certain fundamental components of teacher preparation had been established. General education had been replaced with pedagogical courses, teacher preparation exams and certifications had been implemented, and practical components of lesson planning and instruction had been highlighted.

Education Policy Resolution of the Government of India, 1904

One of the most significant educational publications, it established the principles for the system of education to come. It provided several crucial recommendations for enhancing the teacher-training program. Which were:

Training Institutes

The Resolution said that in order to enhance secondary education, teachers needed to get training in the art of instruction. At locations like Madras, Kurseong, Allahabad, Lahore, and Jubbulpur, there were a total of five teacher training colleges. Graduates or Intermediates may apply for admission to these colleges.The basic guiding ideas for the development of the training institutions were: to increase the number of personnel with skill and experience working on higher education; to adequately equip training colleges; and To make the training programs two years long, and one year for graduates. The training would include understanding of the fundamentals of teaching as well as some technical proficiency in the application of the art. There should be a strong connection between theory and practice, and there should be practical schools connected to each institution. The course would end with a university degree or diploma. The instructors at these schools need to be completely qualified, and the pupils ought to learn from them. They need to have excellent libraries and museums. So that students don't disregard the techniques learned in college, there should be a direct connection between training institutions and schools. The training college authorities and the inspection staff should make an effort to increase the college's influence in the schools, and the students should periodically be brought back together.

More training institutions should be established, especially in Bengal, according to the Resolution. The majority of the normal schools were boarders where students from vernacular educational backgrounds came for instruction and were paid stipends. They

acquired a broad education as well as training in teaching techniques and classroom practice. The Resolution suggested a two-year minimum program. It referenced training programs designed specifically for instructors in rural schools. Thus, it can be shown that the Resolution's proposals and ideas had a significant impact. A few of the Resolution's proposals were not carried out, while others were, and certain adjustments were made in the area of teacher preparation. The B.T. degree was introduced by universities for graduate instructors. The Resolution led to revisions to the curriculum and changes to the environment, among other things.

Resolution on Education Policy by the Government of India, 1913

The second resolution on educational policy identified the system's flaws and made several helpful recommendations for enhancing Primary education. The Resolution recommended that instructors be chosen from the class of the boys they would instruct and that they have completed a year of training in addition to passing the middle vernacular exams. It proposed that instructors take regular review and development courses. The resolution underlined the need for continual idea exchange among training college staff members as well as for them to tour other schools. It further said that no instructor should be permitted to teach without a credential.

Commission of the Calcutta University, 1917

The Sadler Commission, which examined every facet of university education, delivered its extensive findings in 1919. Additionally, it discussed the teacher education program and offered some insightful suggestions. It made clear the severe inadequacies of educational institutions and the subpar instruction they provide. It was proposed that the training program should develop the trainee into a capable administrator as well as a classroom instructor. The group recommended creating post-graduate education departments at universities, staffing each with a professor, a reader, and many assistants, and instituting a post-graduate degree in education. It suggested adding education as an elective topic for graduation and graduate study. The teacher training program in India benefited from the Sadler Commission's recommendations. In 1925, Mysore University established a faculty of education.

The Hartog Committee

The Hartog Committee continued the work started by the Sadler Commission. Although the Committee's focus was mostly on elementary education, it also offered significant suggestions for teacher preparation. It correctly noted that teacher quality, prestige, and compensation all contributed to the effectiveness of education. It was proposed that individuals who were familiar with rural society should be hired as instructors in rural regions. Additionally, it said that the training time was too short, the curriculum was too constrained, and the teaching personnel lacked acceptable credentials[10].

The article made the case that diaries for teachers written in their native tongue, refresher courses, conferences, and gatherings of teacher organizations may all help instructors live happier lives and do better work. The same recommendations came from the committee for secondary school instructors as well.

The Wood Report by Abbott

This 1937 study, which was presented, is yet another important one for schooling. It addressed the role of vocational education in particular, but it also offered insightful advice on teacher preparation. The paper states that the training should last three years to allow the student to continue with both general education and professional training. For the instructor to get more expertise, it was also advised that he take a refresher course. The proportion of

qualified instructors increased from 56.8% in 1937 to 61.3% in 1942, yet there was still improvement. However, there was still a lot that needed to be done to achieve a qualitative improvement. There were 376 male-only normal schools and 236 female-only normal schools out of a total of 612 in 1941. These institutions offered one- or two-year training programs. For graduates, there were 25 training schools, but they weren't enough to satisfy the demands of the day. The Vidya Bhawan Teacher's College in Rajasthan and the Tilak College of Education in Poona both opened their doors in 1941. The same year, Bombay took the initiative to launch the first doctoral program in education.

The Sergeant Report

The Central Advisory Board of Education unveiled the "Sergeant Plan," also known as the "Post-War Educational Development in India" plan, in 1944. The program was a comprehensive instructional strategy. It provided several helpful program recommendations for teachers. After high school, it was suggested that young boys and girls enter the teaching profession; practical training, refresher courses, and research facilities should all be made available. It recommended a three-year programme for senior basic schools and a two-year course for pre-primary and junior basic schools. In high schools, non-graduate instructors were required to complete a two-year training program whereas graduates underwent a one-year program. The general and professional courses should be studied during the first year of the two-year training program. It should be backed up with conversations, school visits, and other experiences that pique the trainee's interest in learning. In order to recruit better instructors, it suggested updating pay rates for all types of educators.

3. CONCLUSION

In conclusion, the 21st century's models for teacher education and training represent a paradigm shift in how to get educators ready for a time of fast technology change, cultural diversity, and changing educational paradigms. The emphasis is shifted from the conventional delivery of knowledge to outcomes that stress skills, flexibility, and problem-solving in competency-based frameworks. These models make sure that teachers are informed about the 21st century's abilities, such as critical thinking, teamwork, and creativity, as well as well-equipped to help pupils in doing the same. Approaches that include technology recognize how digital technologies have the power to alter education. Teachers need to be adept at utilizing technology but also understand how to use it to increase student engagement, personalize learning, and encourage lifelong learning.

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CHAPTER 11

NATIONAL POLICY ON EDUCATION AND PROGRAMME OF ACTION

Gautam Kumar, Assistant Professor
College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India,
Email Id- gautamkumar.edu@gmail.com

ABSTRACT:

National Policies on Education (NPEs) and their accompanying Programmes of Action (PoAs) serve as pivotal documents that guide a country's educational development. This abstract explores the significance and impact of these comprehensive frameworks on shaping educational systems and fostering societal progress. It delves into the key principles and goals outlined in NPEs, such as access to quality education, equity, skill development, and cultural preservation. The abstract also examines how PoAs operationalize these policies through strategic implementation plans and initiatives. By analyzing case studies and global trends, this abstract underscore the transformative potential of well-crafted NPEs and PoAs in driving educational reforms and advancing nations toward their socio-economic and cultural aspirations.

KEYWORDS:

Curriculum Development, Educational Objectives, Holistic Development, Inclusive Education, Lifelong Learning, National Education Policy.

1. INTRODUCTION

Under the leadership of Dr. S. Radhakrishnan, the University Education Commission was established shortly after Independence. In 1949, the Commission turned in its final report. The Commission noted that the theoretical papers supplied at the different teacher-training institutes were plainly identical. However, they practiced quite differently from one another. Ten to sixty supervised classes were given, and each one had a different amount and style of practice teaching and student teaching.The Commission noted that the training institutions lacked a fundamental introduction to the fundamentals. It was suggested that, in order to improve teacher education, teacher educators should approach the entire course from a different perspective, that theory and practice should complement one another, that rule-of-thumb methods should be applied intelligently, that candidates for trainees should have prior experience teaching in schools, that courses in the theory of education should be adaptable and tailored to local conditions, and that professors and lecturers should produce original research[1], [2].

Plan Time in The Fifty's

The first conference of training colleges in India was held in 1950 in Baroda, where there was an idea exchange. The meeting covered the training colleges' programs and duties. The second All India Conference was held in Mysore the following year, 1951. It expanded the scope of the teacher training program and advised using the word "Education" instead of "Training" to approach it from a wider angle. For college instructors in Mysore, a six-week summer school in education was offered the same year. The curricula for teacher education have been updated, new areas of expertise have been introduced, and practical practice has been enhanced. The number of workshops, seminars, and conferences focusing on teacher education has increased[3], [4].

The Report of the Secondary Education Commission was one of the significant occurrences during the Plan Decade. It provided a thorough analysis of both the training programs and instructors' shortcomings. It highlighted that the teacherhis or her personal traits, educational background, professional training, and position within the school and communityis the most crucial component in educational reconstruction. In order to address all of these issues, the Commission came up with three different kinds of teacher training institutions: primary teacher training, secondary teacher training institutions, and training colleges. It recommended two different kinds of institutions: one for those who have earned their high school diploma and whose training should last for two years; and one for graduates, whose current training should last for one academic year but might be extended to two academic years as part of a long-term program. While secondary grade training institutions should be under the authority of a different Board, graduate training institutes should be recognized and sanctioned to the universities that should give the degree. For the M.Ed. degree, it advised training in extracurricular activities, refresher courses, and research. After earning a degree in education, it suggested three years of teaching experience for admission to the M.Ed. program. The foundation of Extension Centers was prompted by the passion for seminars, workshops, etc. The establishment of the All-India Council for Secondary Education occurred in 1995. The Council provided service education via its Extension Centers.

The All-India Council for Elementary Education was established in 1957. When the Second Five Year Plan was introduced in 1955–1956, it was anticipated that 68% of instructors would have received training by 1960. 17 crore rupees were allotted for expanding training facilities. The Examination Reform Unit was established by the All-India Council of Secondary Education in 1951. To oversee and manage the extension programs, the Directorate of Extension Program for Secondary Education was established in 1959. In order to educate English instructors and carry out research in the area, Hyderabad's Central Institute of English was founded in the same year.In October 1969, the nation's first national seminar on the education of primary teachers was conducted. The Report of the Study Group on the Training for Elementary Education included the seminar's results. The results showed a depressing situation. Every teacher needed to be trained, and the State Government should develop a phased approach to reach the goals since the institutions lacked enough staffing and equipment. It advised choosing a few training facilities as role models for expanding primary teacher education in the proper direction.

The ideal number of trainees for training institutes is 200. It was suggested that primary school teachers be a part of the extension programs. It recommended establishing State Institutes of Education. Extension Training Centers in Primary Teacher Education Institutions began operating in 1962–1963. By 1964, the State Institutes of Education had been created, and the National Institute of Education had a Department of Teacher Education. The National Council of Educational Research and Training was established in 1961 during this time. It was designed to enhance academic instruction via training, investigation, publishing, and coordination. Ajmer, Bhubaneswar, Bhopal, and Mysore are the locations of the four Regional Colleges of Education that the NCERT developed. A research team for a few educational programs was established by the Committee on Plan Projects in 1961, and it turned in its report on teacher preparation in 1964. According to the Committed's findings, teacher education programs hardly ever allowed for experimentation or innovation, the training colleges lacked adequate laboratory facilities and instructional resources, and they made only a small contribution to the field of education. These insights were startling yet accurate. At the M.S. University of Baroda's Faculty of Education and Psychology, the UGC established a Center for Advanced Studies in Education. It was suggested that comprehensive colleges be established in 1964 at the All India Association of Teachers' Colleges' Seventh

Conference in order to close the gap between primary and secondary teacher preparation programs. The establishment of a State Council of Teacher Education was suggested by the Conference[5], [6].

Kothari Commission

The Indian government established an education commission in 1964, with Dr. D.S. Kothari as its chairman, to provide recommendations on the system of education. The Commission found that a strong program of professional development for teachers was crucial for raising the quality of instruction. The Commission identified the flaws in the current system and made recommendations for improvements. It was advised that the separation between teachers' colleges, universities, and the institutions themselves be abolished. It outlined the steps to take in detail. It suggested topic focus and the development of integrated general education and professional education courses for quality enhancement. It provided advice on how to raise the quality of teacher educators. The State Governments were instructed to draft a strategy for the growth of training facilities.

The Commission provided highly accurate diagnoses of the problems with teacher preparation and offered workable solutions. The Education Commission's recommendations from 1964–1966 led to certain modifications in teacher preparation. Some institutions, including Aligarh, Kurukshetra, Kanpur, and others, now offer an M.A. in Education. To address the backlog of unskilled instructors and certain States' setup, several Universities launched summer schools and correspondence courses. Boards of education for teachers in each state. These adjustments were intended to address the demands in the area of teacher education and were a positive development.

Organizing in-service training, increasing the number of women teachers and teachers from tribal areas, educating science and math instructors for the middle classes, and enhancing the quality of teacher education were all priorities for the Planning Commission's Fourth Five Year Plan. For the training of teachers who are currently in the classroom, it recommended correspondence courses. It suggested more coordination between the NCERT and the SIEs to improve the quality of school instruction. Additionally, it recommended training courses for teacher educators[7], [8].

The Sixteens

Implementing the new educational model, or 10+2+3 pattern, received a lot of attention in the 1970s. This required reconsideration and changes in teacher education. The Indian government made a daring and creative move in 1973. In order to serve as a national advisory body for teacher education, it established the National Council for Teacher Education. For the purpose of preparing instructors for the new 10+2 pattern, the NCTE created a curriculum. The new curriculum focused on tasks. The framework envisioned that the teacher would take on the role of the leader both within and outside of the classroom, operate as a catalyst for social change and aid in achieving the objective of national development. The framework highlighted and worked out the Socially Useful Productive Work, built the interaction with the community, and defined the role and duties of the teacher in the evolving Indian Society.

It also clearly stated the goals of teacher education.In 1976, the NCTE and UGC panel members on teacher education met together and prepared a position paper on the subject. Through a variety of centers for continuing education, the NCERT created programs for training teachers who were already in the classroom. Education was added to the Concurrent list in 1975 as a result of the 42nd Amendment to the Constitution. Due to a shift in government at the center, education became a priority, and significant developments were seen in the 1980s.

2. DISCUSSION

In 1983, the Indian government established two national commissions on teachers. One aimed to address problems with teachers at the school level, while the other dealt with concerns involving instructors at the higher education level. Both commissions had very broad areas of inquiry, ranging from the National Foundation for Teachers' Welfare to the goals of the teaching profession. These Commissions met with a cross-section of society to learn about their opinions on how to make the teaching profession better.

Conflicts with the Educational Policy

The Government of India published "The Challenge of Education: A Policy Perspective" in August 1985, which envisioned an educational system that would educate the next generation for the twenty-first century. The text accepted that teacher performance was the most important factor in the area of education, but regretted that much of teacher preparation was unnecessary, that recruiting and selection processes were flawed, and that teaching was still the profession of last resort. It placed a strong focus on the applicants' ability for teaching, the restructuring of the teacher education program, and in-service training. The text was heavily contested and discussed across the nation, and the Government of India was provided with proposals from educators, intellectuals, and workers for inclusion in the Education Policy, 1986. The emphasis on the teacher education program was made in the National Policy on Education of 1986. Training colleges became Colleges of Teacher Education and Institutes of Advanced Studies in Education, while training schools became District Institutes of Education and Training. IASEs included provisions for innovation and research. The effectiveness of teacher education institutions was another focus of the 1992 revision of the National Policy on Education[9], [10].

According to the NPE and POA, 1986 and 1992, both infrastructural and curriculum transactions have undergone development. The coordination of many service programs and infrastructure upgrading both cost a lot of money. There were 45 DIETs, 76 CTEs, and 34 lASEs by 1998–1999, respectively. However, it is shown that none of them have much of an influence on teacher preparation. The NCTE has also made an effort to enforce standards and requirements for these training institutes to be recognized. The NCTE received 2426 applications for recognition and running teacher training programs for the 1998–1999 academic year from the current training institutions. In addition to the 1294 institutions that were given provisional recognition, recognition was later awarded to 408 institutions. In a similar vein, 1349 applications for establishing new institutions and programs were received. There were just 277 new institutions and courses that received recognition. In addition, 1035 institutes received provisional recognition.

The Acharya Ramamurthy Committee amended the NPE in the 1990s and provided a humanistic approach to education that placed a greater emphasis on value-oriented education. Additionally, NCTE became a formal government organization during this time. when the NCTE Act of 1993 was approved by the legislature of India. On August 17, 1995, NCTE went into operation to support the planned and coordinated growth of the nation's teacher preparation programs. During this time, when the Indian market was opened to outsiders and free trade and business were promoted, the policy of liberalization, privatization, and globalization was announced.

Deux Thousands

The liberalization program that was originally implemented in the early 1990s was advantageous for the first ten years of the twenty-first century. There was a Public commercial Partnership and the education sector was made available to the commercial

sector. Many private universities were founded at this time, and the UGC, in accordance with section 3 of the UGC Act 1956, encouraged foreign institutions to establish their campaigns on Indian territory and promote education. A national knowledge commission has been established, and its recommendations call for higher education to reach a gross enrollment ratio of 15% by 2015. Through the Rashtriya Madhyamik Shiksha Abhiya, efforts are currently being made to universalize secondary education after the universalization of education and the flagship initiative of Sarva Shiksha Abhiya. Due to its increased focus on education, particularly higher education, the eleventh plan is often known as the education plan. A number of central universities have emerged at this time, and the 11Ts and 11Ms have launched a fresh drive to promote high-quality engineering and management education across the nation.

The current educational structure in India was patterned after the English and Welsh educational framework. As a result, our system of teacher education is based on English standards. The level of education in schools in England is already quite good, but teacher educators want to elevate it even higher. James Report and the Robbins Committee Report concur. In the UK, there are teacher educators. as well as other nations are worried about how content and technique are integrated in their programs for teacher education. Understanding other industrialized nations' teacher education programs would enable India to adopt as many of their practices as is practical. The English system of teacher education is the result of lengthy evolutionary processes out of customs or traditions rather than the result of any revolution or upheaval. There is no such thing as a generic teaching license, and nothing public nor municipal regulation prohibits anybody from starting a school, claims Ward. Teachers' credentials and staffing standards are either predetermined by tradition, highlighted by public sentiment and government pressure, or left up to chance.

The Initial Period

Monitorial System: There was no official system of teacher preparation in the United Kingdom at the start of the nineteenth century. The Monitorial System was used in the initial, rudimentary effort to create instructors. In accordance with the method, a select group of older students, referred to as "monitors," were initially given a selection of basic facts or phrases to learn by memory. Each of these individuals then gathered in the large hall with a group of other kids to whom he imparted the knowledge he had just learned. The method was abandoned and replaced with the "pupil-teacher system" because it had several flaws. Mr. Kay Shuttleward promoted a new approach called the pupil-teacher system after criticizing the monitoring system. According to this plan, the most talented students in an elementary school were selected as "Pupil-teachers" at the age of thirteen. They were legally apprenticed to the headmaster for a period of five years, and at the conclusion of each year, they were tested on a graded curriculum. The Government gave the headmaster a payment of 5 pounds for one pupil-teacher, 9 pounds for two, and 3 pounds for each subsequent one if they performed well. The pupil-teacher was eligible to take the departmental examination at the conclusion of the apprenticeship, or at age eighteen. The Queen's Scholarship was given to the chosen applicants, entitling them to a three-year program at a training institution. They were deemed to be "certified teachers" at the conclusion of it. The bursar and student-teacher system permitted secondary school students to stay there until they were seventeen or eighteen as "bursars" before going directly to a training college, or they might choose to become teachers.A "student-teacher" divides his time between studying at the secondary school and practicing teaching in an elementary school. With various revisions, this method of initial teacher preparation is still in use today.

Report of the Robbins Committee

The following suggestions were made in relation to teacher preparation.

Scheme A System of McNair Committee

It should be implemented, but it was suggested that the next logical step should be to first combine the Departments of Education of the colleges and Institutes into Schools of Education, and then to implement a block grant for all the Colleges in each school, to be administered by the University, which would then take on not only academic supervision of the Colleges but also financial responsibility for their upkeep. Although it should be acknowledged that this was not the greatest course of action for the Colleges, the Council for National Academic Awards. Academic and financial control over colleges of education should go hand in hand, and vice versa. should be funded by the University Grants Committee and become an essential component of a university school of education. Some of the larger Colleges may merge with or become a part of a University on an individual basis. They need to be called Colleges of Education in the future. The majority of these suggestions were put into practice. Colleges of Education were given new names for the colleges. The bachelor's degree in education was established.

Regional Advice. Government Report

The Central Advisory Council's study, titled "Children and Their Primary Schools," was released in 1967. It suggested the following: The recently founded B. Ed. All primary school teachers should be numerate as well as literate, and efforts should be made to improve their qualifications. Degrees should be a major source of graduates for primary schools. There should be a thorough investigation into the system of teacher training. An expansion of the network of day colleges and outposts where mature students who had adopted hours and modified s had proven their value, as well as an increase in the number of primary school graduates and more training facilities for them, as well as the promotion of closer communication and collaboration between colleges and schools, are all necessary.

In order to improve the overall cooperation between Schools and Colleges, there should be more combined appointments to College and School staffs and a greater role for the Schools in the monitoring of student teaching.It offered the recommendations listed below for the preparation of teachers for an upcoming plan for secondary education for all students. The same entry standards as for universities should apply to teacher education, which should be included in higher education. All instructors' general education should be expanded and developed. A four-year education and training program leading to a degree should replace the current three-year certificate program. The current four-year program should be expanded to a five-year program. A one-year internship should fit each pattern. be a crucial component. The educator should never stop learning for his career. The three cycles of teacher education should be as follows: The first cycle would be delivered by a university or the Council for National Academic Awards Committee.

The second cycle would be a typical, more than two-year professional training program. The first year would be spent in the Colleges or Department of Education, with less focus on formal courses in educational theory and more on preparation for work suited for a teacher at the start of his career. The student would become a licensed teacher after the second year, at which point he would start being paid. The third cycle will begin with training registration and span a variety of training, education, and activities. There will be lengthy programs leading to advanced degrees that will free instructors to work in the classroom full-time. Abolition of the Area Training Organization system and its replacement at the local and

federal levels by the Regional Council for Colleges and Departments of Education and National Council for Teacher Educational and Training were also recommended in the study.

Teacher education curriculum and courses

The majority of vocational schools provide a two-year program. Nevertheless, as a result of the McNair Committee's recommendations, there is a general tendency to prolong the course to a total of three years. The training colleges' curriculum. is accepted by the Board of Studies at various educational institutes. The majority of the facets of a teacher's job are covered by rather broad and thorough curricula. Of course, the Boards of Studies merely specify the broad contours of the curriculum; the training institutes themselves choose the specifics. Currently, the following types of study and practical activities are often included in the curriculum of training institutions in England:

Academic Studies

This section of the curriculum aims to provide the pupils a solid general education. As a result, it is dedicated to the in-depth study of certain educational topics.

Professional Studies

These are designed to provide students with a solid foundation in the theories and methods of teaching, and they include topics including health education, the history of education, and educational psychology. The education of young infants in infant schools and the teaching of students in the age range of 7 to 11 in junior high schools both provide opportunities for specialization.

Practice-based instruction makes up the course's practical component. Although there is no set curriculum for it, students are often expected to teach for a total of twelve weeks while being supervised by all faculty members.Courses in school organization and administration, teaching methods and techniques, educational psychology, child psychology, and theory of education have all been included to the teacher education curriculum. The theoretical component of teaching and learning has been given greater weight in the curriculum than the practical component. The phases of curriculum development are as follows:

- Primary school teachers.
- Secondary school teachers.
- Special educators, educators in arts and vocational schools, and
- Teachers provide further education.

The training program lasts three years for physical education and home science, and four years for art and music. Both male and female student teachers are able to enroll in any of them. The universal certificate of education is a requirement for admission.

Assessment for training

Teachers' associations and direct selection from schools are both used in the selection process. One third of those chosen are female instructors. Girls who have finished their schooling and have worked for a year or two in an industrial or commercial institution are chosen for this position.

The need for female instructors is growing daily. for technical topic instruction. The students are chosen from the industrial training program, and after a year of probation, their appointment becomes permanent. Students who are interested in receiving training are offered assistance by organizations of teacher colleges and teacher training departments. Regarding teacher preparation, they provide the Education Ministry and students insightful suggestions. They aid young boys and girls in obtaining admission as well. The willing

applicant submits an application for admission to the Teacher's organization, and after reviewing it, the organization makes an effort to have the applicant accepted into a training facility.

Teachers' terms of service

Typically, management and the teacher will have a service agreement in place before the teacher is hired. When a school is operated by a volunteer group, the full management committee picks the instructors as opposed to the manager alone in assisted schools. The service conditions are decided with the assistance of the teacher organizations. The Education Act of 1944 adopted the Burnham Committee's recommendation. The service conditions for teachers are jointly decided by the Teachers' Association and L.E.A.

Education of teachers

The development of teacher education in the United States began at the beginning of the nineteenth century via private academies. Normal Schools, Education Colleges, etc. Three distinct phases may be used to examine this development: The Normal School Movement, which began in the early 19th century when private academies began to educate teachers. In Concord, Vermont, Samuel R. Hall founded the first Normal School for Teachers. Horace Mann, Edmund Dwight, Cyprus Pierce, Charles Brookes, and others who were inspired by the European system of teacher education supported his efforts. A private teachers' seminar was established by James Carter in Lancaster, Massachusetts, in 1834. The public helped the Normal School movement acquire a lot of momentum. The State Government has also been involved in teacher training. In Lexington, Massachusetts, the first public normal school in the United States was founded in July 1839. Many additional States and County School Authorities adopted this. 170 Public Normal Schools were operational by 1860. The training program at a Normal School lasted around one year. Some brilliant pupils, however, were permitted to complete this course early. Candidates who successfully completed the one-year program were given a credential to teach in Massachusetts' district elementary schools. Anyone who has completed elementary school was eligible for admittance.

Unique Features

There is no national system of teacher education in America since there is so much variability and flexibility in the field. According to an American educationist, "There is no One way to educate teachers and no One type of institution is best suited to the job." A variety of institutions, from High Schools and County Normal Schools to Education Departments of Universities, have their own programs of teacher training with hardly any uniformity in their curricula or system.

Opportunity Equality

In the American system of teacher preparation, men and women from all socioeconomic stratarich and poor, high and lowhave easy access to the institutions that train future educators.

Cooperative Enterprise

Rather than being the exclusive domain of a single authority or organization, the system of teacher education is a cooperative enterprise. It is a collaboration between local and state organizations, universities, schools of liberal arts, teacher preparation programs, and governmental agencies.

Education as Total Development

According to Americans, education is the process through which the physical, mental, moral, social, and intellectual facets of a person's personality are fully developed. As a result, the teacher training program is comprehensive and aims to produce both the appropriate kind of teacher and the right kind of person. The phrase "teacher education" has taken the role of "teacher training" due to the focus on new and wide concepts in education.

General and professional education courses that are combined

These courses are designed to provide instructors a comprehensive or entire education that prepares them to be effective teachers and decent people. These programs combine B.A. degrees and last four or five years. or a B.S.C. plus an education-related degree or certificate.

Like two sides of the same coin, pre-service and in-service teacher education are complimentary and equally necessary. Thus, teacher training is a continuous process that lasts throughout a teacher's professional career rather of being restricted to the time spent in teacher training facilities.

3. CONCLUSION

In conclusion, the pillars of a country's commitment to education, which determine the course of its development and progress, are its national policies on education and the corresponding programmes of action. These papers represent the values, objectives, and priorities of a country and capture its vision for its educational system. In order to provide fair access to high-quality education, promote cultural preservation, and prepare students for the challenges of the future, NPEs develop overarching principles that direct educational endeavors. The ensuing Programmes of Action put these concepts into practice by defining achievable goals and implementation schedules for the policies. NPEs and PoAs that are well-designed have a significant effect.

They act as catalysts for educational transformation, promoting advancements in teaching techniques, curriculum design, and infrastructural development. They advocate for diversity, making sure that education reaches underserved groups and accommodates a range of learning requirements.

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CHAPTER 12

AN OVERVIEW OF TYPES OF TEACHER TRAINING INSTITUTIONS

Pawas Kumar Mandal, Assistant Professor
College of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India,
Email Id- PKM6282@GMAIL.COM

ABSTRACT:

Teacher training institutions play a critical role in preparing educators for the complex and evolving demands of modern education. This abstract examines the various types of teachers training institutions, ranging from traditional universities to specialized colleges and online platforms. It delves into the unique characteristics, advantages, and challenges associated with each type. The abstract also explores the evolving nature of teacher training institutions in response to technological advancements, changing pedagogical approaches, and the need for continuous professional development. Through an analysis of case studies and educational trends, these abstract underscores the importance of diverse teacher training pathways in nurturing skilled and adaptable educators who can effectively shape the future of learning.However, the effectiveness of teacher training institutions relies on a balance between theory and practice. Practical experience, mentorship, and classroom observation are essential components of teacher training that require thoughtful integration into any training model.

KEYWORDS:

Certification Programs, Continuing Professional Development (CPD), Curriculum Design, Education Colleges, Faculty Development, Initial Teacher Education.

1. INTRODUCTION

In America, there are two types of teacher training institutions: public and private. While commercial institutions are operated and managed by private companies, public institutions are funded and governed by the government. The majority of institutions are public since many commercial organizations have stopped engaging in this activity due to the high expense of such institutions[1], [2].

Children's moral and mental growth, as well as teaching principles and practices

The Normal Schools have seen significant modification recently. The training process now takes three years to prepare instructors for primary schools as they have advanced. The course material is more thorough and integrated. Both professional training and subject-matter orientation are included in the program. Currently, teacher colleges have largely taken the position of normal schools.

Teachers Colleges

In the second half of the 20th century, certain Normal Schools were replaced with Teachers Colleges, which were more cutting-edge and up-to-date teacher preparation programs. The movement gained traction as a result of the backing of teachers, teacher educators, and other public organizations, including the National Educational Association. These colleges provide integrated courses lasting 4 or 5 years for both elementary and secondary education and are solely focused on the preparation of teachers. They serve as institutes that provide degrees. A couple of these institutions even offer Ph.D. programs in teacher education. Many of these colleges provide courses leading to an education master's degree. Some of them also provide courses for college and university professors and train specialized teachers. The primary

characteristic of these Colleges is the blending of general and professional courses to provide a solid foundation in both the subject matter and the art of instruction[3], [4].

Departments of Education

As a component of larger liberal arts colleges and universities, departments of education were established. The Department of Pedagogy at Iowa University was the first to establish a distinct division to educate instructors in the art of instruction. Numerous colleges and institutions of liberal arts were encouraged to imitate it as a result of its success. As the campaign gathered steam throughout the country, almost all institutions established Departments of Education. These departments' primary duties were providing potential teachers with a well-rounded, comprehensive education as well as resources for additional study and pedagogy and teaching methods research.

Education schools or colleges

A fresh drive to create independent Schools of Education in various universities and institutions of Education was sparked by the formation of university Departments of Education and liberal arts institutions. The University of Michigan took the initiative by establishing "Chairs of Education." Many additional colleges created their own schools of education after Michigan University set the precedent, with the aim of doing research into the theory and practice of pedagogy and for the in-depth analysis of the issues with teacher education. The internal autonomy, autonomous administration, and sound financial management of the Schools and Colleges of Education contributed to their popularity. They set their own spending limits and awarded their own degrees to the chosen individuals. They created more rigorous teacher education programs and added a new dimension to the prospective teachers' professional preparation. The most relevant literature in the field of education science that had been absent in the nineteenth century was written by them.

Curriculum and study options

the purpose of teachers' curricula the goal of colleges and colleges of education is to provide potential teachers with an all-encompassing education. Their role is to blend general and professional courses in order to provide students a solid foundation in both the subject matter and the teaching craft. The majority of colleges' teacher training programs last three to five years. The following three fundamental components are a part of every teacher preparation program in America: general education[5], [6].

Professional training and field-specific specialization

General Education is often taught to aspiring teachers for at least two years in most institutions in order to prepare them for success in modern society. in the words of the American Council on Education's Committee on Teacher Education. When it comes to aspiring teachers, such education should work to further the development of information, skills, attitudes, and interests that are fundamentally connected to the demands and obligations shared with contemporaries headed for other occupations. The goal of this style of education is to provide people with different occupations in a complex society cultural, social, and intellectual basis. Its subject matter includes of introductory courses in the humanities, the social sciences, and the sciences. They sometimes provide beginning classes in many disciplines with a focus on communication skill development. Professional Education's main goal is to provide the aspiring instructors with professional knowledge and methods. Theory and practical teaching are the two sections. The first or second year of the four-year degree introduces the theoretical part of teaching, which is carried until the final year. These are the topics covered in this section of the curriculum and how much time they get.

Practice teaching, also known as student teaching, is often introduced at the end of the professional courses that student teachers complete. They may do this in the normal public schools or the Laboratory School on the university campus. It involves participating in critique or discussion sessions, seeing classes being taught, and then actually teaching in a classroom while being expertly supervised by the supervisors, who are faculty members from the College of University. Practice teaching is sometimes referred to as "internship in teaching," according to the internship model used by medical colleges. The plan calls for the student teachers to work constantly for eight or nine weeks while being supervised by one or more experienced educators from the partner school. The senior school teacher, the students' instructors, and the college lecturer collaborate to organize and carry out the full internship task.

Topic specialization Americans have a strong belief that a teacher's knowledge of the topic she is expected to teach her students is of utmost significance. Without this competence, one cannot provide his pupils with accurate and comprehensive information. As a result, the student instructors must become proficient in the subject(s) of their choosing. The most recent tendency at many institutions is toward specialization in integrated disciplines or topics, in line with the curricula of the schools, such as social sciences, languages, general science, etc.

Educating instructors in higher education

State laws governing faculty requirements in public postsecondary education vary, but since public faculty are not considered to be civil servants, it is up to each institution's faculty, department, or school to set the academic and professional standards and requirements for faculty positions as well as for recruitment and promotion. Even for public organizations, state legislation only aims to prevent hiring discrimination and other violations of labor or employment regulations. Institutions may have different requirements depending on the faculty member's expected teaching level, the subject or field they will be teaching, whether they will be conducting research, whether they will need a professional license or qualification, and whether the position is full- or part-time and tenure-track. Additionally, accredited schools adhere to any faculty criteria established by the regional accrediting association to which they are affiliated as well as any requirements established by the organization that accredits programs in a specific discipline. Faculty in higher education are required to have the knowledge and credentials needed to instruct, do research, and advise in their area of study or profession, as appropriate. The standard prerequisite is either a terminal research degree in the area of expertise or, for certain professional and clinical faculties, the relevant professional certification with a track record of successful practice and applied research[7], [8].

2. DISCUSSION

Content Analysis and Systems Approach

Recent developments in communication media and information technology have had a significant impact on all fields of knowledge. Every profession has seen the effects of this progress. Systematizing knowledge and information have become necessary as a result of the development of computers and other electronic media. Today, every activity is seen as a process system made up of several interconnected components.A system is defined as a full form in structure or operation, idea or function made up of joined or integrated pieces, according to Webster's Dictionary. A system is a cohesive whole, function, process, or piece of material with connected parts working together to achieve a purpose. The term "system" is often used in information technology. When a group of ideas, tasks, or procedures are taken

into consideration, it becomes easier to comprehend how they operate and to process, store, and transmit information. System principles are currently applied in all fields of study and in all vocations[9], [10].

You can tell that most developed or underdeveloped nations today are development-minded since every nation strives to advance in its own unique manner. 'Education' is the primary element in all of these developments. Teachers must thus overcome difficulties in order to satisfy the society's growing requirements. Every person in our society has to be developed, and their potential must be used to the fullest extent possible.It is impossible to achieve economic progress and social wellbeing without maximizing human potential. How efficiently we utilise our natural resources will have a major impact on the stability of our economy in the future. If the pace of national development is to be accelerated," the Education Commission Report states, "there is a need for a well-defined, bold, and imaginative educational policy and determined vigorous action to vitalize, expand, and improve education.

Our instructors should be concerned with assisting future generations in acquiring the information, skills, and attitudes essential to develop the country if education is to play such a significant role. All instructors must comprehend the mechanics and dynamics of teaching technology in order to provide their students the greatest education possible while maximizing the use of our resources.You are aware that technology has produced a wide range of new tools, resources, and media with enormous potential for application in education. More efficient and effective learning may be achieved via the wise use of technologies in conjunction with new roles and responsibilities for education workers. We now have a way to quickly and efficiently store information in a little amount of space and retrieve it as needed. Today, effective education may be delivered to children and adults in distant and inaccessible locations through mass media. Without their physical presence, the services of professionals and capable teachers may be made accessible everywhere in the nation.

The Greek words for "technology" are "login," which means science or study, and "techno," which means art or talent. A broad definition of technology includes the study of art or skill as well as the science of art or talent. 'Technology' has distinct connotations in various circumstances. Whether they are professionals or academics, engineers, physicians, scientists, economists, and politicians all have their own terminology and knowledge.

J. Naughton. According to the author of the book "Technology in Schools," technology may be understood in two different ways: as stuff and as a social activity. The term "technology of things" refers to the application of scientific knowledge to real-world problems by organizations that include both men and machines.

The use of structured scientific and other information to perform practical tasks by hierarchically arranged social systems with both humans and robots is known as social process technology. Because of this, technology not only serves as a "tool" for scientific advancement but also as a "change" in how society functions. Technology and society interact on an ends-and-means basis. On the one hand, society chooses certain purposes for which technology offers means, and on the other, technology impacts the solution of inputs leading to the output's society needs and demands.

Theory of Teaching

You now have a basic understanding of technology. You now have a better understanding of teaching. Due of its complexity, the notion of teaching might be interpreted in the following ways.

i.by examining and researching how the word "teaching" is defined.

ii.by looking at numerous theories on the attributes and nature of teaching.

iii.by examining its relationships to similar or comparable phrases.

As you are aware, teaching is both a science and an art. As a work of art, it shows how the teacher used creativity and creative talent to make the classroom a worthwhile place for students to study and advance both the short-term and long-term aims of education.As a science, it identifies the logical, mechanical, and procedural processes that must be taken to achieve objectives in an efficient manner. Teaching is a complicated activity done by complex people in a complex environment (the school) to even more complex people who are continually going through complex changes. Thus, it becomes evident that there is no precise conceptual knowledge in the field of education. According to Barr, "teaching means many different things, that is, the teaching act varies from person to person and from situation to situation" in this context.

Morrison asserts that "teaching is a disciplined social process in which the teacher impacts the conduct of the less experienced student and aids in his development in accordance with societal goals and standards by virtue of his ideas, position, status, knowledge, and experiences. Here, instructors serve as the primary knowledge-transfer agents while kids act as passive listeners and blind followers. According to Bubacher's definition, "teaching is a process in which students play the central role." The teacher's job is to provide learning scenarios where students may freely choose what they want to study. Students who get this kind of instruction may develop their independence in learning and problem-solving.

As you are undoubtedly aware, teaching is both a science and an art. The notion of teaching technology has evolved as a result of scientific study of education. In this field of educational technology, Davies, Gage, Bruner, and Gagne have all made major contributions.

The foundations of technology in education are important.

i. The three main pillars of effective teaching are content, communication, and feedback.

ii.Teaching and learning are closely related to one another.

iii.The teaching and learning processes may be changed, enhanced, and developed.

iv.The right educational environment may determine the learner's technical behavior in terms of the learning structure.

v. With or without advanced procedures, feedback devices may be used to build and grow teaching abilities.

vi.Through signing sui instructional activities, pre-established learning goals may be met.

vii. Utilizing achievement motivating approaches improves student and instructor performance.

Understanding the mechanics of education in the classroom, degrees of teaching, principles and conditions-operations, etc. are all examples of what is meant by technology of teaching.It has clearly defined parts. human resources, techniques, supplies, and media. Methods refer to the employment of a few tools during training, such as customized learning systems, team teaching, microteaching, and models of programmed learning. A material refers to educational resources such as written/printed materials, manuals, guides, and programmed text books. For a successful teaching and learning process, media refers to the employment of audio-visual or both audio-visual media, such as radio, tape recorders, films, and television. The last element, personnel, is crucial since all methods, materials, and media need sufficient

labor to run and function. so that a favorable atmosphere for teaching and learning may be established. These four techniques so serve as the teaching technology's inputs. You already know that technology is a field of study or a branch of art. It is the organization's application of scientific knowledge to real-world challenges. Both persons and machines are involved. Technology is another way that scientific knowledge is used to social processes so that social patterns might change. A student serves as the teaching agent, and there are a set of goals that are intended and controlled mainly to affect the behavior of the pupils. Teaching technology entails having a thorough grasp of the mechanisms by which education takes place in a classroom setting, including levels of instruction, conditions and rules, processes, etc. It has well defined human resources, procedures, materials, and media components.

The idea of a system

Let's attempt to define what a system means. We'll use the bicycle as an illustration for this. What components make up a bicycle? The handles, chain paddle, breaks, etc. One could wonder why we need so many parts, such as wheels, batteries for breaks, rear brakes, etc. The answer is that each of these parts is necessary for the bicycle to function correctly, which is why they are referred to as bicycle components. The bicycle won't operate if the break isn't functioning. The bicycle won't be able to move if the wheel is devoid of air. The operation of every other component is impacted. This demonstrates how several parts of a bicycle interact with one another and rely on one another in order to work properly. Most of you have probably noticed that the bicycle in the example above must carry out a number of tasks. It consists of a number of interconnected and interdependent parts that work together to make the bicycle operate properly.

System Definition

A system is made up of several parts that work together to accomplish certain functions in an interconnected and interdependent way.

Systems Parameters

There are four fundamental parameters in any system. input, action, result, context of the environment, and feedback. Input refers to what is introduced into a system. For instance, in the educational system, personnel, materials, and money were introduced. Process is the activity that takes place in a system, medium, technique, etc. Output is the thing that the system produces. Environment is the circumstance in which the system functions.

Systems by Types

Now that you are familiar with systems, let's study more about their many kinds.

Secure Systems

A closed system is one that rejects new information and is cut off from interacting with other systems. It may also refer to a system where the barrier is impermeable.

Launch System

Let's now think of the bicycle and the rider as a single system. These systems are referred to as open systems because they improve the system's ability to respond to external environments. The majority of systems are always open. They interact with an open environment system that includes the following features. They distinguish between closed systems.

Systems Analysis and Systems Approach

As you are aware, every person who lives in our world has some kind of issue. Currently, these issues can be reduced by using some of the approaches accessible. We must hunt for a fresh method that examines human, industrial, and social issues while treating the problem as a whole, or "systems approach." By making effective use of resources like people, money, and other resources, a systems approach allows us to build complex systems.

The phrase "systems approach" was coined during World War II, and soon after, the notion of a scientific method to decision-making appeared. Scientists from the United States and Great Britain methodically attempted to find solutions to the issues caused by the first Nazi attacks during World War II. Later on, this strategy was made available to business and other non-military government entities. This methodical, scientific approach to problem solving, planning, and decision-making is now extensively applied in social service and educational fields. A scientific approach to problem-solving, decision-making, and planning is known as the system approach.

You will comprehend some of the definitions in this unit. According to Churchman, a systems approach is a method for describing a system's nature so that decisions may be made in a rational and coherent manner and a system's performance can be represented.In his further explanation of the idea, Bertalanffy said that "systems approach required an evaluation of different solutions and of picking those promising optimization at maximum efficiency and least cost in a complicated network of interconnections.

An operational concept known as a "system approach" refers to a scientifically logical method of improving the performance of systems through the application of a series of sequentially related activities for analyzing current systems, deriving solutions to issues, and developing new or modified entities. It uses the resources that are already accessible to create changed things.The challenge is articulated in terms of the goals after a detailed study of the requirements of the systems, the resources at hand, and the restrictions already in place. This stage involves two steps: declaring the goals and deciding how they are to be met. System analysis provides the solutions. and what is necessary? As a result, the analyst formulates the goals here while taking into account the environment's restrictions, examines interactions inside the system as well as between the system and its environment, explains the structures, functions, and roles, points out constraints, and outlines potential courses of action.

3. CONCLUSION

In conclusion, the landscape of institutions that educate teachers is dynamic and diversified, reflecting the complexity of contemporary education. Each sort of school has certain benefits and meets particular educational demands. Traditional colleges provide students a solid academic basis in pedagogy and subject matter, preparing them to become teachers. It may be useful for people looking to specialize in certain educational settings to attend specialized colleges since they provide concentrated instruction that is tailored to particular age groups or topic areas. Access to teacher training has increased thanks to the advent of online learning tools and remote education, which also gives teachers the freedom to pursue professional development at their own speed and convenience. Online organizations also make it easier for people to collaborate internationally and exchange best practices across boundaries.

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