

Re-Imagining **THE TEACHER EDUCATION**

PROSPECTS AND CHALLENGES IN AI ERA



EDITORS

Kulandai Theresal L | Elin Shibi Y | Beulah Jayarani C

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FOREWORD

In an era where artificial intelligence and digital technologies are rapidly transforming every facet of human endeavor, education stands at a pivotal crossroads. The very essence of teaching and learning is being redefined, demanding a profound reimagining of teacher education for the 21st century. *Re-Imagining Teacher Education: Prospects & Challenges in the AI Era* could not be more timely or necessary.

As Rector & Vice-President of Loyola Institutions, I have witnessed first-hand how technological disruption intersects with our enduring mission to form men and women for and with others. Our institutions have always been at the forefront of educational innovation while remaining anchored in the Jesuit ideals of intellectual excellence, ethical discernment, and holistic human development. This book powerfully extends that tradition by addressing four critical dimensions of contemporary teacher education:

The Evolution of Modern Education

The journey from traditional pedagogical models to today's technology-enabled classrooms reflects broader societal transformations. This section provides invaluable historical context while challenging us to envision how Loyola's time-honoured educational values can inform future-ready teaching paradigms.

Understanding Learners & Teachers in the Digital Age

Today's digital natives require educators who can bridge the gap between technological fluency and human connection. The insights here resonate deeply with our commitment at Loyola to form educators who combine digital literacy with the Ignatian emphasis on *cura personalis* - the care for the whole person.

Harnessing Technology for Teaching & Learning in the AI Era

While AI presents remarkable opportunities for personalized learning, it also raises crucial questions about equity, ethics, and the irreplaceable human dimension of education. This chapter echoes Loyola's approach of engaging critically with technology while preserving our core pedagogical values.

Holistic Education: Nurturing Mind, Heart, and Soul

In an age of increasing automation, this section reminds us that true

education must cultivate not just cognitive abilities but also compassion, creativity, and conscience - the very qualities that define Loyola's educational philosophy and make us distinctly human in an AI-driven world.

This work represents more than just academic reflection; it is a call to action for all stakeholders in teacher education. It challenges us to boldly reimagine how we prepare educators while remaining faithful to our fundamental mission. At Loyola Institutions, we recognize that the future of education lies not in resisting technological change, but in harnessing it to serve our higher purpose of forming individuals who will create a more just and humane world.

I commend this important contribution to the field and invite educators, policymakers, and all who care about the future of teaching to engage with its insights. May it inspire the same spirit of *magis* - the restless pursuit of excellence for the greater good - that animates all our work at Loyola Institutions.

Rev. Dr. J. Antony Robinson SJ
Rector and Vice President,
Loyola College Society,
Chennai - 600 034.

PREFACE

In today's world, where the call for "Quality" resonates in every aspect of life, the acronym "AI" is also being echoed globally, encouraging everyone to engage with the growing intelligence of machines. In the context of the digital age, teachers are expected to keep pace with the tech-driven learning-teaching process and meet the demands of various stakeholders—learners, parents, and society at large. While lifestyle, thought patterns, and communication have undergone significant changes with the advent of liberalization, privatization, and globalization (LPG) and the rapid growth of technology, we must recognize that the future is likely to experience even greater change. It is crucial to ensure that the younger generation remains informed about both the consequences and the importance of maintaining strong human relationships. In other words, there needs to be a balance between a technology-centred life and human connections.

At this critical juncture, a teacher must serve both as a guide and a facilitator. Teachers must creatively fulfill their roles, training adolescents and adults to use technology judiciously, while also fostering a commitment to living an ethically sound, human-centered life. This requires that the restructuring of individuals begin in the classroom, supported by parents at home, so that children are empowered to critically assess their surroundings, form their own judgments, and respond authentically. Through this process, a holistic personality is developed.

In shaping a mature individual who can positively contribute to society, it is essential to consider their psychological, social, mental, and emotional development. This leads to the design of effective, innovative strategies for instruction, as well as the integration of content and values. Needless to say, the teacher plays a pivotal role in this development, accompanying the learner and fostering growth, ultimately contributing to the creation of citizens who are well-equipped for an AI-driven modern society.

Therefore, the urgent task before us is to reflect on the challenges we face and find solutions that will contribute to the better formation of young minds. This book aims to critically explore AI-based education from various perspectives, particularly from teacher educators, offering suggestions and solutions for productive classroom interactions. I am confident that the eighteen thematic papers included in this book will encourage innovative thinking and provide momentum for future educational planning and techniques.

Let me conclude with these words: “Reading, listening, and communicating enlighten a person—not just for employment, but for the discovery of one’s true self.”

I extend my sincere gratitude to the Principal, Research Coordinator, and all the faculty of LCE for their intellectual efforts and cooperation in bringing this remarkable academic work to fruition. May God bless us all!

Rev. Dr. D. Thomas Alexander, SJ.
Secretary, LCE, Chennai.

*“AI won’t replace teachers, but teachers who use
AI will probably replace those who don’t”*

*— Richard Culatta, CEO of ISTE
(International Society for Technology in Education)*

EDITORIAL

As we navigate the complexities of the AI era, the landscape of education is undergoing a profound transformation. The role of teachers, in particular, is evolving rapidly, requiring them to adapt, innovate, and reimagine their practices.

This book, ‘Reimagining Teacher Education: Prospects and Challenges in the AI Era’ aims to explore the intersections of technology, pedagogy, and human connections in the digital age.

Through four comprehensive themes comprising of nineteen chapters, we delve into the evolution of modern education, the nuances of understanding learners and teachers in the digital age, the potential of technology for teaching and learning, and the importance of holistic education that nurtures the mind, heart, and soul.

Our contributors, comprising experts and practitioners in the field, offer insightful perspectives, practical strategies, and thought-provoking reflections on the future of teacher education.

We hope that this book will inspire educators, policymakers, and researchers to reimagine the possibilities of education in the AI era and work towards creating a more inclusive, effective, and compassionate learning environment for all.

I congratulate the editorial team, contributors, and advisors for their hard work and commitment in producing this book.

Dr. L.Kulandai Theresal,
Principal
(For the Editorial Team)

CONTENT		
CHAPTER 1 Evolution of Modern Education		
S.No.	TITLE	P.No.
1.	The Evolution of Education: From Chalkboards to Digital Classrooms - Dr. Y. Elin Shibi	1
2.	The Role of Digital Tools in Modern Learning - Dr. V. Mary Hilda	12
3.	Interactive Tech Tools for the Modernday Classroom - Dr. L. Kulandai Theresal	21
4.	வகுப்பறையில் தொழில்நுட்ப மேலாண்மையின் போது எதிர்கொள்ளும் சவால்கள் மற்றும் எதிர்பார்ப்புகள் - முனைவர் மா. வெண்மணி	35
CHAPTER 2 Understanding Learners and Teachers in the Digital Age		
5.	Psychological Understanding of the Needs and challenges of Gen Z & Alpha Learners - R. Sridevi	53
6.	Inclusive behaviour of an effective teacher - Dr. J. Antony Joseph	69
7.	Professional Development for Teachers in the Digital Era - Dr. C. Beulah Jayarani	77
8.	Interpersonal and Intrapersonal Relationship among the Gen Z & Alpha learners . Dr. M. Nandhini	88
CHAPTER 3 Harnessing Technology for Teaching - Learning		
9.	Artificial Intelligence in Education: Personalized Learning for Every Student - S. Catherine Nithya	96
10.	Enhancing Collaboration Skills with Digital Tools in the Teaching - Learning Process - Dr. A. Jasmine Christy	107

11.	Entrepreneurship in education in the AI era - Dr. H. A. Anbu Selvi	121
12.	Gamification in Education: Learning through Play, Pros and Cons - Dr. T. Ponmalini	131
13.	Impressions of Open Educational Resources (OER) in Global Learning - Dr. E. Karthikeyan	139
CHAPTER 4 Holistic Education : Nurturing the Mind, Heart, and Soul		
14.	Gender Sensitivity in Artificial Intelligence - K. Nandha	153
15.	Value Inculcation for a Better Humane Society in View of Re-imagining Teacher Education : Perspectives and Processes - Dr. S. Pondyselvi	160
16.	Crafting of Integral Personality through Inclusive Curriculum - Dr. D. Thomas Alexander	168
17.	Influence of Social Media among Students and Enhancing Classroom Culture through Social Media Management - Dr. V. Ajantha	179
18.	Digital Reflections: The Impact of social media of personality formation among Teacher Educators, Prospective Teachers, and Students - Dr. M. Amala Jansi	184
19.	Preparation of teachers and students for STEAM Education - Dr. T. Komalavalli	195

CHAPTER - I



Evolution of Modern Education

THE EVOLUTION OF EDUCATION: FROM CHALKBOARD TO DIGITAL CLASSROOM

*** Dr Y. Elin Shibi**

INTRODUCTION

The education sector has witnessed a profound metamorphosis over the years, catalysed by the convergence of technological advancements, evolving learner needs, and shifting societal expectations. Communications education, and more specifically agricultural communications education, has undergone a transformation over time, adapting to the requirements of students by incorporating new technologies, methods, and approaches (Murphrey et al., 2013). As we navigate this complex landscape, it becomes increasingly evident that the traditional paradigms of education are giving way to innovative, technology-driven approaches. The chalkboard, once an indispensable tool in the classroom, has gradually ceded ground to interactive whiteboards, tablets, and an array of digital learning platforms. This transformation is not merely a matter of replacing outdated tools with sleek, modern alternatives; rather, it represents a fundamental shift in the way we approach education, with a renewed emphasis on personalized learning, collaboration, and digital literacy. This article delves into the evolution of education, tracing the trajectory from traditional chalkboard-based learning to the modern digital classrooms that are redefining the educational experience. By examining the key drivers of this transformation and exploring the implications for educators, learners, and the broader education ecosystem, we hope to provide a nuanced understanding of the complex, dynamic landscape of modern education.

THE ANCIENT ROOTS OF COMMUNICATION EDUCATION

The history of communication dates back to the very beginning of human civilization. The earliest form of communication was undoubtedly the human voice. However, with the invention of writing systems, significant transformations took place. The development of structured writing in Mesopotamia, Greece, and Egypt marked a major milestone in communication. Since prehistoric times, communication technologies have continued to evolve, bringing remarkable advancements in the field of education (Parihar, 2022). In ancient times, education was primarily oral, with information passed down through stories, observation, and practical learning. Early humans learned essential survival skills from their elders, such as hunting and farming. As civilizations progressed, formal schooling systems formed.

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I) Sumerian Education System (c. 3000 BCE)

The Sumerian education system, dating back to around 3000 BCE, marked a significant milestone in the history of education by establishing the first formal schools. These institutions provided a structured learning environment where students could acquire essential skills in writing and arithmetic, laying the groundwork for literacy and numeracy. However, this pioneering system had its limitations. Education was largely reserved for the elite, restricting accessibility and social mobility for the broader population. Additionally, the curriculum's focus on practical skills, while useful for administrative and economic purposes, likely neglected other vital areas of knowledge, such as philosophy, arts, and sciences, potentially limiting the development of well-rounded individuals. Despite these drawbacks, the Sumerian education system's emphasis on formal instruction and core skills paved the way for future educational advancements.

II) Ancient Egyptian Education System (c. 2500 BCE)

The Ancient Egyptian education system, flourishing around 2500 BCE, was a sophisticated and specialized system primarily catering to scribes and priests. This education emphasized writing, religion, and astronomy, providing students with a well-rounded foundation in these critical areas. The system's merits lay in producing skilled scribes and priests who played pivotal roles in Egyptian society, contributing to the development of literature, spiritual practices, and astronomical knowledge. However, the system had significant limitations. Education was largely reserved for these select groups, restricting accessibility and opportunities for others. Moreover, the curriculum's focus on preserving traditional knowledge and practices may have limited the scope for innovation and exploration of new ideas, potentially hindering the evolution of various fields. Despite these constraints, the Ancient Egyptian education system's emphasis on writing, religion, and astronomy helped shape the cultural and intellectual landscape of the civilization.

III) Indian Gurukul System (c. 1500 BCE)

The Indian Gurukul system, dating back to around 1500 BCE, was a unique educational framework where students resided in ashrams under the guidance of revered gurus. This system offered a holistic education, encompassing the study of ancient texts, mathematics, philosophy, and spiritual growth, aiming to develop well-rounded individuals. The merits of the Gurukul system lay in its emphasis on fostering strong teacher-student relationships, where gurus provided personalized guidance and mentorship. However, the system had limitations, including restricted accessibility, as only those who could afford to live in ashrams had the opportunity to benefit

from this education. Furthermore, the curriculum's focus on traditional texts and philosophical debates might have overlooked the importance of practical skills, potentially leaving students unprepared for certain vocations. Despite these drawbacks, the Gurukul system played a significant role in preserving and transmitting ancient knowledge, shaping the intellectual and spiritual heritage of Indian civilization.

IV) Confucian Education System (c. 500 BCE)

The Confucian education system in Ancient China, which emerged around 500 BCE, was deeply rooted in the teachings of Confucius and focused on imparting moral principles and governance. This system was designed to cultivate virtuous individuals who could serve as effective government officials, with a strong emphasis on ethics, morality, and leadership. One of the notable merits of this system was its use of competitive examinations to select government officials, promoting a meritocratic approach to governance. However, the system's limitations included a narrow curriculum that prioritized moral principles and governance over other areas of knowledge, such as science, technology, and the arts. Additionally, education under this system was largely reserved for those who aspired to government careers, potentially excluding individuals from other socio-economic backgrounds. Despite these constraints, the Confucian education system played a significant role in shaping the moral and intellectual fabric of Chinese society, influencing governance and civic engagement for centuries.

V) Ancient Greek Education System (c. 500 BCE - 400 CE)

The Ancient Greek education system, which flourished from around 500 BCE to 400 CE, was characterized by institutions like Plato's Academy, where students engaged in rigorous studies of philosophy, science, and physical education. This holistic approach to education aimed to cultivate well-rounded individuals with a deep understanding of the world and their place in it. The emphasis on philosophy, particularly in the Socratic method, fostered critical thinking and intellectual curiosity, laying the groundwork for Western philosophical traditions. However, the system had significant limitations, including restricted accessibility, as education was largely reserved for free-born males, excluding women, slaves, and non-citizens. Additionally, the curriculum's focus on theoretical knowledge might have overlooked the importance of practical skills, potentially leaving students unprepared for certain vocations. Despite these drawbacks, the Ancient Greek education system's emphasis on intellectual inquiry and critical thinking had a profound impact on the development of Western philosophy and continues to influence education to this day.

VI) Roman Education System (c. 500 BCE - 400 CE)

The Roman education system, spanning from around 500 BCE to 400 CE, was a structured and organized framework designed to train individuals in law and administration, essential for governance and civic life. This system was notable for its emphasis on practical skills, providing students with hands-on experience in areas such as rhetoric, law, and governance, which were crucial for careers in public service. The Roman approach to education laid the groundwork for modern teaching methods by focusing on the development of specific, applicable skills. However, the system had its limitations, including restricted accessibility, as education was primarily reserved for those who could afford to pursue careers in law and administration, potentially excluding individuals from lower socio-economic backgrounds. Furthermore, the curriculum's strong focus on practical skills might have come at the expense of theoretical knowledge, which could have broadened students' understanding and adaptability in a rapidly changing world. Despite these constraints, the Roman education system's influence on modern teaching approaches is evident in the continued emphasis on practical training in various professional fields.

THE CHALKBOARD ERA (1800S-1980S)

Classrooms, as we remember them from our student years, were the cornerstone of learning and virtual ones heavily base their approaches there. We're talking big chalkboards, carefully arranged desks, lively students participating or talking with their peers, and teachers loudly explaining their subjects. This format traces back to ancient times, when people gathered around in outdoor spaces to listen to what scholars had to say. The idea of school as we know it, though, first started during the Middle Ages. Back then, the church was responsible for education, and classes were held in monasteries and temples. The first educational institutions were invented during the Renaissance, filled with wooden desks in rows and the first books. Chalkboards were introduced much later, in the 19th century, giving teachers the freedom to draw and scribble everything that was on their minds, visualizing complex concepts and ideas. Traditional classrooms were a central hub for knowledge sharing but they became more than that. To this day, they foster a sense of community since students form bonds with their peers and teachers and have real-time access to resources and support. Teachers act as mentors, helping students along the way and focusing on providing the best learning experience possible. The chalkboard was a staple of traditional classrooms for over a century. The necessity of conveying information to a large audience simultaneously led to the development of teaching boards. These boards allow an entire class or group of students to

visualize the presented content effectively. Across the world, classrooms in universities, colleges, and schools utilize various types of boards, including blackboards, green boards, whiteboards (dry-erase boards), and smart boards (Muttappallymyalil et al., 2016). Teachers wrote notes, drew diagrams, and delivered lectures using chalk and blackboards. This method was effective for its time but had limitations, such as difficulty in engaging students and limited access to resources.

CHALLENGES IN TRADITIONAL EDUCATION

i) Lack of Personalization

What usually happens in a traditional classroom is, the teacher stands at the front of the room, delivering the lesson while everyone listens at their desks, with, often, little interaction between them. This makes it tough for teachers to identify individual students' needs while also addressing the larger group's needs. As a result, some students may not receive the attention and help they need, thus underperforming and quickly losing interest.

ii) Passive Learning

Speaking of loss of interest, learner engagement may be significantly lower due to the traditional classroom's passive learning style. Students are expected to take a back seat and merely listen to the material. Unfortunately, this approach can lead to disengagement and a lack of critical thinking skills. When students don't get to ask questions, engage in conversations, or apply what they learn, they struggle to grasp the material.

iii) Less Focus on Soft Skills

Traditional classroom structures often focus solely on academic and technical skills, while soft skills like communication, teamwork, and problem solving are frequently overlooked. These skills are important for success not just in school but in all areas of life. The ability to communicate effectively, work collaboratively, and solve problems efficiently is vital in personal relationships, community involvement, and leadership positions.

iv) Class Size

The size of a classroom can impact student success. Studies have shown that smaller class sizes can lead to better academic achievement and fewer discipline problems. This is because teachers can interact with students on an individual or small group basis, which can really help those who are struggling. However, if smaller class sizes aren't possible, teachers can try to make adjustments and find alternative ways to support their students.

v) Limited Use of Technology

Traditional classrooms sometimes limit the use of technology, which can be challenging for students who are used to learning and having fun with technology. This can result in a lack of digital literacy, leading to a gap in the student's knowledge and abilities. On the other hand, students who have access to technology in the classroom are better prepared for those technical skills and the digital era.

vi) The Advent of Technology (1980s-1990s)

The introduction of personal computers, CD-ROMs, and early internet connectivity marked the beginning of a new era in education. Teachers started using educational software, multimedia resources, and online materials to supplement traditional teaching methods.

THE RISE OF ONLINE LEARNING (2000S-2025S)

The main question is: how did we get from textbooks to tablets? The answer is simple: with the advent of personal computers. These machines laid the groundwork for eLearning and opened up new education opportunities by providing learning resources through the screen. Then the internet came, allowing information to flow freely and reach everyone who could connect. These advancements paved the way for virtual classrooms, which started becoming more popular. Since their widespread use during the pandemic, learners and instructors have been able to connect effortlessly, share opinions, exchange resources, and transfer the traditional classroom's sense of community to their screens.

However, the tech revolution in education didn't stop there. Nowadays, we have interactive media, making education a dynamic experience that thrives in digital environments. And let's not forget mobile learning, which allows people to carry their virtual classroom in their pocket, learning from anywhere and at any time they want.

The widespread adoption of high-speed internet, mobile devices, and learning management systems enabled the growth of online and blended learning. This shift allowed for greater flexibility, accessibility, and personalization of education.

Digital Classrooms and Flipped Learning

The digital classroom revolutionized the way teachers deliver instruction and students learn. Flipped learning models, where students watch lectures at home and work on activities in class, became increasingly

popular. This approach encouraged active learning, collaboration, and critical thinking.

Mobile Learning and Gamification

“Mobile learning can be defined as any teaching and learning activity that takes place using mobile devices or in environments where mobile technology is accessible.” (Colazzo et al., 2003). The proliferation of mobile devices and educational apps transformed the way students access and interact with learning materials. Gamification, which involves using game design elements in educational contexts, enhanced engagement, motivation, and learning outcomes.

Artificial Intelligence and Adaptive Learning

The integration of artificial intelligence (AI) and machine learning algorithms in educational platforms enabled adaptive learning experiences. AI-powered systems adjusted the difficulty level, content, and pace of learning to suit individual students’ needs, abilities, and learning styles.

Virtual and Augmented Reality in Education

The emergence of virtual reality (VR) and augmented reality (AR) technologies opened up new possibilities for immersive, interactive, and experiential learning. VR and AR enhanced student engagement, understanding, and retention of complex concepts and skills.

CHALLENGES AND OPPORTUNITIES

The evolution of education has brought numerous benefits, including increased accessibility, flexibility, and personalization. However, challenges persist, such as ensuring equity, addressing digital divides, and maintaining teacher training and support. Embracing innovation, collaboration, and continuous improvement will be essential for navigating these challenges.

BENEFITS OF VIRTUAL CLASSROOMS

i) Flexibility

One of the best things about virtual classrooms is that they’re perfect for working people who want to study at their own pace. With online learning, people have the freedom to decide when and where to study, making it easier to fit their education around their lives. Whether you’re a morning person or a night owl, you can choose to study whenever it’s most convenient for you. Plus, virtual classrooms offer a wide range of resources that are available 24/7, including online libraries, digital textbooks, and recorded lectures.

ii) Personalization

Virtual classrooms utilize LMSs that thrive on data analysis. As such, instructors are always aware of what type of content resonates with their learners and can adapt it easily to accommodate their needs. Data can also show participation rates, which gives professionals an idea of what topics trouble learners or what they find easier to follow. With these insights, they can create personalized learning paths for each user or allow them to create their own and monitor their progress.

iii) Immediate Feedback

In virtual classrooms, tests are assessed right away after learners complete them, which means they get immediate feedback on how well they've done and where they can improve. So, they can quickly focus on areas that need more attention. The best part is that they can also get personalized feedback from their teachers through video calls and instant messages, giving them a helping hand in the process of improving their work.

In overall, Virtual classrooms provide relevant and rewarding learning experiences. The use of new technologies enhances the effectiveness of content delivery. Academically, they create a motivating environment for students. The learning process becomes more flexible, accessible, and inclusive.

Additionally, virtual learning is a more cost-effective option. It eliminates preferences in education, treating all individuals equally regardless of religion, language, or caste. Learners are granted unrestricted freedom in their education, with more opportunities for active participation. Creativity is encouraged, and the use of multimedia makes the learning process more engaging and effective (Tamilselvi, n.d.)

CHALLENGES OF VIRTUAL CLASSROOM

i) Technical Problems

Issues with Connectivity Both students and teachers may become frustrated when virtual lessons are disrupted by poor internet connectivity, slow bandwidth, and dropped calls. Low-quality video Effective communication and participation in virtual classes can be impeded by low-resolution video, pixelation, and freezing. Problems with Software Compatibility Technical issues like screen sharing issues or audio delays might result from incompatibilities between various software platforms, operating systems, and devices.

ii) Insufficient Social Engagement and Community Feeling:

Absence of In-Person Communication The body language, social interactions, and nonverbal clues that are present in traditional classrooms may not be available in virtual learning environments. Relationship Difficulty In virtual contexts, students may find it difficult to establish relationships with instructors and peers, which could cause them to feel alone. Fewer Possibilities for Informal Education Opportunities for casual learning, including study sessions or talks in the hallway, may be restricted in virtual classrooms.

iii) Engaging students and encouraging active learning can be challenging:

Short Attention Duration Students may find it difficult to stay focused and pay attention in virtual classrooms, especially if the lessons are long or don't include interactive components. Challenges in Promoting Involvement In virtual classes, instructors may find it difficult to promote involvement and engagement, especially if students are reluctant to speak up or express their opinions. Limited Hands-on Learning Opportunities Virtual classrooms may restrict opportunities for fieldwork or laboratory activities, which are examples of hands-on learning.

iv) Difficulties in Evaluating Student Engagement and Learning:

Measuring Engagement Is Hard In virtual classrooms, instructors may find it difficult to gauge student participation and interest, especially if students aren't actively participating in conversations. Inadequate Feedback Systems Instant feedback may be limited in virtual classrooms, which could make it difficult for teachers to evaluate students' development. Genuineness of Evaluations In virtual classrooms, instructors can find it difficult to guarantee the validity of exams, which could raise questions over academic integrity.

Moreover, Students have expressed concerns about the extended duration of online classes, which lead to fatigue, boredom, and difficulty maintaining concentration. Another issue they face is the overheating of electronic devices due to prolonged online sessions. To address this, students suggest limiting each online session to a maximum of 100 minutes.

Additionally, unstable Wi-Fi connections pose a significant challenge, as students fear losing their online work and assessments midway. Many also worry that their limited IT skills might negatively impact their performance in final online tests.

During interviews, several students highlighted the lack of opportunities for social interaction, emphasizing that virtual communication cannot fully replace face-to-face interactions (Doan, 2020).

From the teachers' perspective, one of the biggest drawbacks of online teaching is the difficulty in managing virtual classrooms. Students frequently join late or leave sessions abruptly. Furthermore, most students are reluctant to turn on their cameras, making communication even more challenging. The survey revealed that only 18% of participants were willing to enable their cameras during virtual classes, while 96% did not find it necessary to use them.

CONCLUSION

The journey from chalkboard to digital classroom has been remarkable. As education continues to evolve, it is crucial to prioritize student-centered approaches, foster collaboration, and harness the potential of technology to enhance teaching and learning. By doing so, we can create a more inclusive, effective, and inspiring education system for all. This chapter provides a thorough overview of the evolution of education, highlighting key milestones, benefits, and challenges. It emphasizes the importance of embracing innovation, collaboration, and continuous improvement to create a more inclusive and effective education system. As we reflect on the evolution of education, it's evident that virtual learning is the future. While traditional methods may be nostalgic, modern tools and resources can accelerate learning. Embracing this shift can be transformative, offering boundless opportunities for growth and knowledge, whether you're an educator, parent, or student.

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THE ROLE OF DIGITAL TOOLS IN MODERN LEARNING

***Dr.V. Mary Hilda**

INTRODUCTION

Technology permeates everyday life, including the process of education. Thanks to the development of technology, we now have the tools and techniques to make the education process innovative and teaching and learning more interesting. Traditional classroom teaching does not provide an immediate learning environment, faster assessment and greater engagement. In contrast, digital learning tools and technology fill this gap. Some of the efficiencies that such technologies offer is simply unsurpassed by traditional learning methods. With smartphones and other wireless technology devices becoming increasingly popular among the general public, it makes sense that schools and educational institutions are making effective use of them by bringing technology into the classroom. Indeed, the adaptability and non-intrusive nature of today's technology is making learning more attractive to the next generation. Digital tools play a crucial role in modern learning, offering personalized access to information, fostering collaboration, and enhancing digital literacy, ultimately preparing students for a tech-driven world.

DIGITAL TOOLS FOR LEARNING AND ITS TYPES

Digital tools are software and online resources that help people do many tasks easily. They include apps like word processors and spreadsheets, as well as software for graphic design, data analysis, and project management. These tools help people be more productive, work together, and communicate better.

LEARNING MANAGEMENT SYSTEMS (LMS)

Learning management systems are vital for managing educational courses, often termed virtual learning environments. They serve as primary platforms for distance learning and can enhance traditional face-to-face teaching. LMS allows educators to provide digital learning content accessible to students anytime via the Internet, enabling them to revisit materials as needed. For students who effectively manage their workload, these systems offer deeper insights into course content. Educators typically have dashboards to track student progress and gain an overview of overall performance. Some LMS also facilitate the creation of courses for external participants, known

as massive open online courses (MOOCs), which aim to make educational content widely available. The term ‘mass’ indicates accessibility to a large audience, while ‘open’ signifies free and public access to online courses. Learning materials on these platforms can take various forms, including recorded videos, problem sets, and public forums.

COLLABORATION TOOLS

Document collaboration tools enable multiple users to work on the same or different documents simultaneously, aiming to produce a cohesive final version. This collaborative approach fosters involvement from all project participants and accelerates decision-making, as everyone can contribute in real-time. Users can view changes made by others instantly and comment on specific sections to highlight issues. This simultaneous collaboration enhances the quality of work and boosts productivity. Examples of such tools include Google Docs, Microsoft Teams, and Slack.

a. Virtual Classrooms and Web Conferencing

Video conferencing tools connect participants who are geographically separated, allowing them to communicate via the internet. These tools capture audio and video, which are then encrypted and transmitted to users. Over time, the functionality of these systems has significantly expanded; in addition to video calls, users can now communicate through text messages and traditional voice calls. Popular features of video conferencing tools include screen sharing for presentations, remote control of another user’s computer, data storage and exchange, and calendar applications for scheduling meetings. Notable platforms in this category include Zoom, Skype, and Adobe Connect. Data exchange and cloud systems

Data exchange and cloud systems ensure the secure exchange of all kinds of data. In cloud systems, data is not stored locally on a hard drive, but in logical pools in the so-called cloud. This storage space is distributed over several servers, which may be in different physical locations at the same time. The content can be accessed from anywhere at any time by anyone with the appropriate end devices and can be modified or deleted at any time.

Gamification and simulation tools

Game-based learning tools harness the popularity of video games to make learning interactive and motivating for 21st century learners. Learning content is combined with game elements to achieve a didactic effect. This should both motivate the learner to learn and increase interest in the subject.

The idea of game-based learning is that learners learn new things through repetition, failure and goal achievement.

b. The digital library and database tools

The digital library and database tools are used to store electronic media centrally on a data server. The stored resources are accessible at any time via the Internet or, in special cases, via the organisation's intranet. These databases may include e-books, digitised books, electronic journals, audio files and films.

c. Mobile learning apps

Mobile learning app learning objectives should focus on engaging, flexible, and personalized learning experiences through microlearning, gamification, and social interaction, while also ensuring content is optimized for mobile devices and accessible anytime, anywhere. The popular apps like Duolingo, Coursera, edX, Google Classroom and Khan Academy

d. Digital whiteboard

Digital whiteboard devices allow you to transfer the familiar whiteboard used in class into the digital world. On the one hand, a distinction needs to be made between the devices used in e.g. video conferencing software and the physical digital whiteboard/chalkboard used in the classroom.

e. Digital notebooks

Digital notebooks are used by teachers to record activities in class and to store assignments and their grades. In the digital notebook, users can view their timetable.

THE ROLE OF DIGITAL TOOLS IN MODERN LEARNING

- 1. *Personalized Learning:*** Digital tools facilitate customized learning experiences that cater to individual student needs and learning styles, ensuring content is tailored to their specific requirements.
- 2. *Information Access:*** The internet has democratized access to information, enabling instant learning and exploration.
- 3. *Enhanced Access to Information:*** Students can tap into a vast array of resources through online platforms, databases, and educational websites, broadening their knowledge base and learning opportunities.
- 4. *Increased Engagement and Motivation:*** Interactive digital tools make

learning enjoyable and stimulating, enhancing student motivation and participation in the educational process.

5. ***Collaboration and Communication:*** Digital tools promote collaboration among students and teachers, allowing them to work together on projects, share ideas, and communicate effectively, regardless of their location.
6. ***Development of Digital Literacy:*** Equipping students with digital skills prepares them for academic and career success, enabling them to navigate the complexities of the digital age.
7. ***Remote Learning and Flexibility:*** Digital tools support remote learning and flexible schedules, empowering students to learn at their own pace and on their own terms.
8. ***Assessment and Feedback:*** Digital tools provide immediate feedback on student progress and performance, helping them identify areas for improvement.

IMPORTANCE OF DIGITAL TOOLS IN EDUCATION

Digital tools have become essential in modern education, offering numerous benefits:

1. ***Enhanced engagement:*** Interactive digital content increases student participation and motivation.
2. ***Improved accessibility:*** Digital tools reach students with disabilities, remote or underprivileged communities.
3. ***Real-time feedback:*** Automated assessments and instant feedback facilitate timely interventions.
4. ***Data-driven insights:*** Analytics help teachers refine instruction, identifying areas of improvement.
5. ***Preparation for digital citizenship:*** Educating students on digital literacy, online safety, and responsible technology use.

EFFECTIVE INTEGRATION OF DIGITAL TOOLS

To effectively integrate digital tools, focus on pedagogy-driven integration, aligning tools with learning objectives and student needs, and utilizing platforms that foster collaboration and engagement.

Here's a more detailed breakdown of how to achieve effective digital tool integration:

1. Start with a Clear Purpose and Alignment

- **Define Learning Objectives:** Before selecting any tool, clearly articulate the learning outcomes you want to achieve.
- **Align Technology with Pedagogy:** Choose tools that support your teaching methods and learning activities, rather than simply using them because they are trendy.
- **Curriculum Alignment:** Ensure that the digital tools and activities align with the curriculum and learning standards.

2. Choose Interactive and Engaging Tools:

- **Interactive Resources:** Utilize interactive resources, such as online quizzes, simulations, and virtual field trips, to enhance student engagement.
- **Collaborative Platforms:** Leverage platforms that facilitate collaboration and communication, such as online discussion boards, shared documents, and project management tools.
- **Gamification:** Consider incorporating gamified learning tools to make learning more fun and engaging.

3. Supplement Traditional Materials:

- **Enhance Learning:** Use digital tools to supplement traditional materials, providing students with multiple ways to access and engage with content.
- **Differentiated Instruction:** Use digital tools to cater to diverse learning styles and needs, providing differentiated instruction and personalized learning experiences.
- **Real-world Applications:** Integrate digital tools to connect learning to real-world applications and contexts.

4. Stay Updated and Adapt:

- **Keep Learning:** Continuously update your knowledge and skills in using educational technology.
- **Evaluate and Iterate:** Regularly evaluate the effectiveness of your digital tool integration and make adjustments as needed.
- **Consider the SAMR Model:** The SAMR model (Substitution, Augmentation, Modification, Redefinition) can be a helpful framework for thinking about the different levels of technology integration.

5. Consider LMS Integration:

- **Learning Management Systems (LMS):** Integrate digital tools with your LMS to create a seamless learning experience.

- ***Data-Driven Insights:*** Utilize the analytics features of your LMS to gain insights into student performance and engagement.
- ***Blended Learning:*** Consider blended learning models that combine in-person and online instruction, leveraging the strengths of both approaches.

BENEFITS OF DIGITAL TOOLS IN LEARNING

- Increased accessibility
- Enhanced engagement
- Personalized learning
- Real-time feedback and assessment

BEST PRACTICES FOR IMPLEMENTING DIGITAL TOOLS

To effectively implement digital tools, focus on strategic planning, employee engagement, continuous learning, and robust security measures, while also prioritizing data privacy. Here's a more detailed breakdown of best practices for implementing digital tools:

1. Strategic Planning

- ***Define Clear Objectives:*** Before implementing any digital tool, clearly define the specific business goals you aim to achieve with it.
- ***Conduct a Digital Readiness Assessment:*** Evaluate your organization's current digital capabilities and identify areas for improvement.
- ***Develop a Digital Transformation Strategy:*** Create a roadmap outlining how you will leverage digital tools to achieve your goals.
- ***Prioritize and Focus:*** Don't try to implement everything at once; focus on the most impactful tools and initiatives first.

2. Employee Engagement and Training

- ***Foster a Digital Mindset:*** Encourage employees to embrace new technologies and see them as opportunities for improvement.
- ***Provide Adequate Training:*** Ensure employees are well-trained on using the new digital tools and understand how they can benefit their work.
- ***Promote Collaboration:*** Encourage employees to share their experiences and best practices with each other.
- ***Empower Employees:*** Give employees the autonomy to use digital tools in ways that best suit their needs and improve their productivity.

3. Security and Compliance

- ***Prioritize Cybersecurity:*** Implement robust security measures to protect sensitive data and prevent cyberattacks.
- ***Ensure Data Privacy:*** Comply with relevant data privacy regulations and protect the privacy of your customers and employees.
- ***Regularly Update Software:*** Keep your software and applications up-to-date to patch security vulnerabilities.
- ***Anticipate and Mitigate Harm:*** Be proactive in identifying and mitigating potential risks associated with the use of digital tools.

4. Continuous Learning and Improvement

- ***Evaluate Success:*** Regularly evaluate the effectiveness of your digital tools and initiatives.
- ***Identify Areas for Improvement:*** Use data and feedback to identify areas where you can improve your digital strategy.
- ***Stay Up-to-Date:*** Keep abreast of the latest trends and technologies in the digital space.
- ***Embrace Agile Methodologies:*** Adopt agile methodologies to allow for flexibility and rapid adaptation to changing needs. \
- ***Prioritize Initiatives:*** Not all digital initiatives can be implemented simultaneously. Prioritize those that align closely with your business goals .

SUGGESTIONS TO MAXIMIZE THE POTENTIAL OF DIGITAL TOOLS IN EDUCATION

1. Pedagogical integration: Pedagogical integration of digital tools involves strategically incorporating technology to enhance teaching and learning, aligning with curriculum goals and student needs, and fostering active engagement.

2. Teacher training and support: Teacher training and support programs help teachers improve their skills and performance, which in turn improves student learning.

3. Student-centered design: Highlight the importance of involving students in the design and implementation of digital tools.

4. Continuous evaluation and feedback: Continuous assessment and feedback involve ongoing evaluation and providing regular, actionable feedback to learners, fostering a culture of continuous learning and improvement.

5. Infrastructure support: To ensure reliable internet connectivity, devices, and technical support, prioritize a robust network infrastructure, utilize reliable devices, and implement proactive monitoring and troubleshooting, including readily available technical support channels.

6. Parental involvement: To foster effective parental involvement in digital learning, schools can utilize mobile apps for communication, offer simple video guides and quick help with tools, and create interactive learning experiences that involve parents and students.

CHALLENGES AND LIMITATIONS OF DIGITAL TOOLS

1. Digital divide: The digital divide, or unequal access to technology and internet connectivity, creates a chasm between those who have access to digital tools and those who do not, leading to social, economic, and educational disparities

2. Technical issues and support: Common technical problems include software glitches, hardware failures, connectivity issues, and security breaches, while reliable support ensures smooth operations, resolves issues efficiently, and improves user satisfaction.

3. Information overload and distraction: Critics often highlight the potential for distraction, citing the fact that an overwhelming 92% of college students admit to texting during classes. This concern is real, as smartphones can certainly pull attention away from the lesson.

4. Data security and privacy: Information such as location, browsing habits, and social interactions is sometimes tracked without parental consent, raising ethical questions about data usage

CONCLUSION

Educational applications and websites are used in digital classrooms to assist students in improving their learning experience. Students can learn more efficiently and track their progress with the help of technology and sophisticated equipment. In the upcoming days, these technologies will successfully be implemented in education to enhance the students' digital learning environment and performance. Digital content production tools that customise teaching and learning, students can study at their own pace. The digital classroom uses electronic devices and software to instruct students and incorporates technology into education. We have to explore and integrate digital tools, focus on providing training, resources, and a supportive

environment, highlighting the benefits of technology for both teachers and students.

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INTERACTIVE TECH TOOLS FOR THE MODERNDAY CLASSROOM

***Dr. L. Kulandai Theresal**

INTRODUCTION

As we navigate the complexities of the 21st century, it has become evident that technology plays an important role in shaping our world. To equip students with the skills necessary to succeed in this rapidly evolving landscape, educators must harness the power of interactive technology. The modern classroom has undergone a significant transformation, with technology-enhanced learning tools making education more engaging, enjoyable, and effective. By incorporating simple yet impactful technologies, educators can cater to diverse learning styles, foster student engagement, and drive academic growth. This chapter delves into the most effective interactive tech tools that are revolutionizing the education sector, transforming the way we teach and learn.

INTERACTIVE TECHNOLOGY

Interactive technology refers to any technological system that digitally facilitates interaction between people, empowers users to actively engage, permits for user content creation or manipulation and generate dynamic immersive experiences. It includes various methods, tools, and devices that empower users to actively engage in crafting their experiences and affecting results. In essence, it is technology intended for real-time engagement and dynamic interaction, in contrast to passive mediums that merely convey information.

DEFINITION

J. Mitchell Vaterlaus defines Interactive technology as Technology that digitally facilitates interaction between people or allows for user content or manipulation.

S.S. Kashlev describes interactive technology in the classroom as: types of technology that have students engage in active interaction in class. He suggests that this active participation fosters deeper learning through collective activity and knowledge creation.

THE EVOLUTION OF INTERACTIVE TECHNOLOGY

The evolution of interactive technology has been marked by significant milestones, each contributing to its growing significance across various industries. The integration of technology in educational settings has revolutionized conventional learning spaces, transitioning from basic blackboards to advanced computer-based educational tools.

The journey of educational technology commenced with early innovations such as overhead projectors and handheld calculators, which paved the way for more sophisticated classroom technologies, including personal computers and digital textbooks.

In the current landscape, emerging technologies like artificial intelligence and mobile devices equip students to meet contemporary challenges by offering instant feedback and improving learning outcomes, thereby ensuring that classroom technology addresses a wide range of educational requirements.

INTERACTIVE TECH TOOLS

Today's students, born and raised in a technology-driven world, expect interactive and immersive learning experiences. To meet these expectations, educators must integrate innovative tech tools into their teaching methods. Interactive learning technologies enable the users to engage with educational content, transforming them from passive recipients to active participants. This could range from interactive displays like smart boards that turn finger taps into mathematical equations, to Artificial Intelligence (AI).

INTERACTIVE TECH TOOLS FOR THE MODERN CLASSROOM

Some of the Essential Interactive Tech Tools for Educators are:

- Classroom response systems
- Online Discussion Forums and Collaborative Projects
- Interactive Simulations and Games
- Augmented Reality (AR) and Virtual Reality (VR)
- Interactive AI (Artificial intelligence)

1.CLASSROOM RESPONSE SYSTEMS (AUDIENCE RESPONSE SYSTEMS)

Classroom response systems once called “clickers” are now digital tools that promote active learning. It is a powerful tool that allows teachers to interact with their students more practically and promotes active student

engagement. They boost student participation with interactive features like live quizzes, surveys, Q&As, Word Clouds, and more.

KEY ASPECTS

i. Real-time Feedback: CRSs allows teachers, to receive instant feedback on their students' understanding during the lesson, which help them spot difficult areas and modify their teaching strategies accordingly.

ii. Increased Participation and Anonymity: CRSs frequently permit anonymous responses from the students. They encourage participation from students who might be reluctant to speak up in front of a large class.

iii. Engagement and Gamification: By implementing gamified components such as surveys and quizzes, CRSs can increase student enjoyment and engagement in the learning process.

iv. Improved Interaction and Conversation: CRSs can help students have conversations with one another, giving them a forum to share knowledge and practice collaborative learning.

v. Accessibility: CRSs can be used in different settings, from small group discussions to large lectures.

CRS TOOLS

1. **Kahoot!** is a game-based learning platform that allows educators to design quizzes and games and offers students an enjoyable and competitive learning experience.
2. **Mentimeter** is a tool designed for crafting interactive presentations can be used to engage students through quizzes, polls, and word clouds.
3. **Poll Everywhere** is a web-based platform compatible with various devices, offering a range of polling options and the ability to integrate with other applications.
4. **Socrative** is a platform that enables teachers to create quizzes, polls, and varied interactive activities.
5. **Slido** is another platform that facilitates student engagement through Q&A sessions and live polls.
6. **Google Forms** is a more flexible tool for developing surveys, polls, and interactive activities.

ADVANTAGES OF CRS

- ***Student participation:*** CRSs can encourage participation from all students, even those who may be shy or hesitant to speak in class.
- ***Real-time assessment and feedback:*** CRSs can provide valuable formative assessment data, helping teachers monitor student progress and identify areas where they may need additional support. Teachers can get immediate insights into students' understanding and adjust their teaching accordingly.
- ***Student collaboration:*** CRSs can be used to promote student collaboration by allowing them to share their answers and discuss different perspectives.
- ***Simplify complicated concepts:*** CRSs enable teachers to ask questions and collect student answers confidentially, facilitating immediate evaluation of understanding and pinpointing topics where students might be having difficulty. This instant feedback mechanism empowers teachers to modify their instruction and offer focused assistance, making challenging concepts more understandable.
- ***Inclusive learning environment:*** CRSs play a vital role in fostering an inclusive educational atmosphere. By enabling students to respond to questions anonymously and interact with the content.

CRSs are valuable tools for enhancing classroom engagement, assessing student understanding, and promoting active learning. They provide instructors with real-time feedback and data, enabling them to make informed decisions about their teaching.

2. ONLINE DISCUSSION FORUMS AND COLLABORATIVE PROJECTS

Online Discussion Forums and Collaborative Projects are excellent resources for encouraging students to participate in active learning and building a sense of community. Forums offer a setting for asynchronous conversations where students can consider the content and gain insight from one another's viewpoints. Students can collaborate on projects that frequently involve discussion boards, which helps them to improve their communication and teamwork skills. These platforms enable students to engage in virtual discussions, share ideas, and collaborate on projects.

KEY ASPECTS OF ONLINE DISCUSSION FORUMS

i. Asynchronous communication: Unlike real-time interactions, forums allow users to post and respond at their own pace fostering introspection and careful thought process before posting.

ii. Wide Accessibility: A wide range of participants, even those who have restricted to synchronous contact due to time zone differences or other limitations, can access forums

iii. Knowledge sharing and Reflection: These Forums facilitate sharing of knowledge, ideas and perspectives among users fostering collective learning and reflection.

iv. Variety of Interaction: Forums cater to diverse purposes, starting from simple interactions to complicated cognitive tasks and collaborative tasks.

ONLINE DISCUSSION FORUM TOOLS

Online discussion forums are flexible resources with a wide range of uses, from community development to educational environments.

1. **Kialo** is a platform that encourages critical discourse and participation, particularly in educational settings, by facilitating debates and subject mapping.
2. **Canvas** is a collaborative learning platform that offers chat capabilities, discussion boards, and components of other learning management system (LMS).
3. **Piazza** is a platform designed specifically for the purpose of online Q&A and discussions in educational contexts with features like private and public publishing and question-answering.
4. **Online video platforms** such as Zoom, Microsoft Teams, and Webex allow students to take part in quizzes and in real time discussions and also offer polling functions.

ADVANTAGES OF ONLINE DISCUSSION FORUMS

- **Increased participation and engagement:** Students even those who might be bashful or apprehensive in person, can share their ideas and opinions in forums.
- **Critical Thinking and Problem-Solving:** Students are able to evaluate data, discuss opposing ideas, and work together to create solutions.
- **Better Communication Skills:** Students are encouraged to express their opinions, reply to others remarks, and observe various communication philosophies in forums.
- **Knowledge Creation and Sharing:** Students can develop a deeper comprehension of the subject by exchanging resources and building on one another's ideas.

KEY ASPECTS OF COLLABORATIVE PROJECTS

i. Shared Responsibility and Accountability: Collaborative projects help in fostering a sense of collective responsibility among team members. to achieve a common goal.

ii. Diverse perspectives and Knowledge sharing: Enhances knowledge sharing among team members, fosters the growth and development of critical abilities, benefit from each other, enriching the project outcome.

iii. Problem solving and Innovation: Expects team to brainstorm, listen to each other, analyse and synthesise information to find solutions to complex problems.

iv. Creating Common Ground: Working together can help people understand each other better and feel more accountable for the project's success.

COLLABORATIVE PROJECT TOOLS

Tools ranging from General platforms like Google Workspace and Microsoft Teams to specialized tools for communication, content creation and project management are available for use in educational collaborative projects.

1. General Platforms

- *Google Workspace* offers a suite of tools including Docs, Sheets, Slides and Drive, enabling students to collaborate on these in real-time.
- *Microsoft Teams* is a hub for file sharing, communication and collaboration, that includes features like chat, video conferencing, and task management.
- *Google Classroom* is a platform specifically designed for educational settings, for assignments, communication, and grades.

2. Communication and Discussion Tools

- *Slack* is a messaging app for real-time communication with channels dedicated to various tasks or subjects.
- *Microsoft Teams* as mentioned above also makes it easier to communicate via channels, video conferencing, and chat.
- *Zoom* is a video conferencing platform for virtual classes and meetings.

3. Content creation and sharing Tools

- *Padlet* is a digital bulletin board for sharing content, ideas, and resources.
- *Miro* is a visual collaboration tool for brainstorming, and project development.

- *Notion* is a flexible workspace for note-taking, task management, and project collaboration.

4. Project Management and Organisation Tools

- *Click Up* is a project management platform with features for task tracking, communication, and collaboration.
- *Trello* is a visual task management platform with boards and lists for organizing projects.
- *Base Camp* is a platform for team project management and collaboration.

5. Interactive Learning Platforms

- *Nearpod* is an interactive learning platform for creating interactive presentations and lessons.
- *Classcraft* is a role-playing game useful for classroom management

6. Other Notable Tools

- *One Note* is a digital notebook for taking notes, and sharing ideas.
- *Concept Board* is an online whiteboard for visual brainstorming and collaboration.
- *Figma* is a design collaboration tool where students can work on visual projects together.

The best tools for collaborative projects will depend on the specific needs of the project and the learning environment. While some tools offer more general capabilities, others are more appropriate for particular types of projects or activities.

ADVANTAGES OF COLLABORATIVE PROJECTS

- ***Teamwork and collaboration:*** Teamwork and collaboration are two advantages of collaborative projects.
- ***Organization and Time Management:*** Students must efficiently plan, schedule, and manage their time when working on group projects. Projects offer students the chance to assume leadership roles, and effectively express their opinions.
- ***Applications in the Real World:*** Students can put their knowledge and abilities to use in a real-world context by working on collaborative projects that mimic real-world situations.

3. INTERACTIVE SIMULATIONS AND GAMES

Interactive simulations and games serve as tools that deliver engaging, dynamic experiences, enabling users to interact with a representation of a system or environment. This educational software allows students to interact with simulations, manipulate virtual environments, and experiment with concepts in a safe and engaging way.

KEY ASPECTS

- i. Engagement:* Participants can actively participate in the simulated environment, making choices and observing the outcomes of their decisions.
- ii. Authenticity:* These tools strive to mirror actual situations or systems, allowing users to hone their skills and acquire knowledge within a realistic framework.
- iii. Discovery:* Users have the freedom to test various scenarios and tactics without the dangers associated with real-life consequences.
- iv. Versatility:* Interactive simulations and games find applications across a multitude of sectors, such as education, training, research, and entertainment.

INTERACTIVE SIMULATIONS AND GAMES TOOLS

- 1. Educational Simulations** such as PhET Interactive Simulations - emphasize on Math & Science, and EdTech Books games and simulations - help students learn new ideas in a safe environment
- 2. Business simulations:** In economics classes, students can practice making decisions in a simulated market by participating in mock business scenarios.
- 3. Medical simulations** allow students to practice procedures and make decisions in a safe setting by simulating patient care scenarios during medical training.
- 4. Engineering simulations** are used in engineering education to model intricate systems and procedures using software.

ADVANTAGES OF INTERACTIVE SIMULATIONS AND GAMES

- **Enhanced engagement and motivation:** The interactive elements of simulations can significantly enhance the learning experience, making it more engaging and enjoyable.
- **Better retention and recall:** Active involvement in simulations fosters a deeper understanding and improved retention of information.

- ***Safe and controlled environment for practice:*** Simulations provide users with the opportunity to experiment and learn from mistakes without facing real-world repercussions.

Interactive games and simulations provide a dynamic and captivating means of interacting with intricate systems and scenarios, making them an effective tool for learning, training, and exploration.

4. AUGMENTED REALITY (AR) AND VIRTUAL REALITY (VR)

These technologies create immersive and interactive experiences that can enhance learning through visualization and exploration. Augmented Reality overlays digital information onto the real world while, Virtual Reality creates fully simulated environments, allowing students to explore concepts in new ways.

KEY ASPECTS OF AUGMENTED REALITY (AR)

1. ***Improved Visualization:*** Augmented Reality allows users to visualize abstract or complex concepts in 3-Dimensions, for easy and clear understanding. A static cell diagram, for instance, can be turned into an interactive three-dimensional model that students can explore from different angles.
2. ***Interactive and Gamified Learning:*** By using simulations and virtual worlds to make traditional teachings more dynamic and engaging, AR encourages students to delve deeper into the course materials.
3. ***Enhanced Engagement:*** By keeping students actively engaged, AR makes learning more enjoyable and manageable.
4. ***Personalized Learning:*** AR allows for customization of interactions and content, catering to individual learning styles, and paces, which can improve learning outcomes.
5. ***Hands-on Experience:*** AR gives students practical experience in virtual environments, enabling them to manipulate objects, conduct simulations and explore in a safe and engaging way.

AUGMENTED REALITY (AR) TOOLS

1. ***Merge Cube*** uses a physical cube with AR apps to explore 3D models of objects, simulations, and more.
2. ***CoSpaces Edu*** allows students to create their own AR experiences and share them with others.

3. ***JigSpace*** is a platform for creating and presenting 3D models in AR, useful for STEM subjects and presentations.
4. ***Wonderscope*** is an AR app for interactive storytelling, making books come alive.
5. ***Assemblr*** enables students to create AR content and explore existing experiences.

UNIQUE FEATURES OF VIRTUAL REALITY (VR)

Virtual Reality (VR) offers unique immersive and interactive learning experiences in education that go beyond Augmented Reality (AR), such as creating fully simulated environments, allowing students to explore concepts hands-on, and facilitating remote collaboration.

VIRTUAL REALITY (VR) TOOLS

VR Headsets:

- ***ClassVR*** is a versatile platform with VR and AR capabilities for both classrooms and meeting rooms.
- ***Google Expeditions*** uses Google Cardboard to provide virtual field trips and immersive experiences.
- ***Standalone VR headsets*** offer a simple and cost-effective way to introduce VR to students.

Web-Based VR Creation Tools:

- ***Cospaces Edu*** is a platform for creating and sharing VR environments.
- ***ENTiTi*** Creator is a commonly used free VR creation tool.
- ***InstaVR***, a platform for creating 360° videos and VR experiences.

VR Applications:

- ***Google Earth VR*** allows users to explore the world in a virtual environment.
- ***HistoryView VR*** offers interesting virtual field trips to historical sites and museums.
- ***Virtual Field Trips and Lab Simulations*** can recreate real-world environments.

Advantages of AR and VR

- ***Enhanced Motivation and Engagement:*** Immersion experiences boost

student motivation and engagement by making learning more engaging and enjoyable.

- *Enhanced Retention:* Complex concepts can be better understood and retained through experiential learning with AR and VR.
- *Experiential Learning:* Students can virtually experience historical events, investigate scientific phenomenon, or even visit other cultures as part of experiential learning.
- *Training and Simulations:* AR and VR can offer lifelike simulations for training and practical skills in a variety of domains.

CHALLENGES AND CONSIDERATIONS

- *Cost and Accessibility:* The cost of hardware and software of AR/VR can be a barrier for some educational institutions.
- *Technical Complexity:* Implementing and maintaining can require expert assist.
- *Pedagogical Integration:* Teachers need to understand how to effectively incorporate AR and VR into their lesson plan.
- *Ethical Considerations:* Concerns related to accessibility, data privacy, and misuse of AR/VR technology need to be addressed.

AR and VR Have a great deal of potential to revolutionize education by creating more engaging, interactive, and personalized learning experiences. However, for maximizing the benefits of these technologies careful planning, consideration of the challenges, and effective integration into the curriculum are essential.

5. INTERACTIVE AI (ARTIFICIAL INTELLIGENCE)

Interactive AI is an artificial intelligence technology that can engage in real-time, bidirectional communication between users and systems. AI can understand and respond to natural language input, and can also pose questions or provide information in a conversational way.

Interactive AI is used in numerous applications, from virtual assistants such as Siri and Alexa, to customer service chatbots and interactive learning platforms. It facilitates for more natural and efficient interaction between humans and machines, making it easier for users to get the information or assistance they need with ease.

KEY ASPECTS

- i. **Two-way Communication:** Interactive AI enables dynamic dialogues, allowing the AI to ask clarifying questions, offer insights, and respond to user input in a way that feels like a conversation.
- ii. **Real-time Interaction:** Unlike static AI, interactive AI provides prompt responses, fostering a dynamic and engaging experience.
- iii. **Personalized Responses:** Interactive AI learns about users, remembers their preferences, and tailors its responses accordingly.
- iv. **Natural Language Processing (NLP):** NLP enables AI to understand both written and spoken words, bridging the gap between human and machine communication and understanding

ADVANTAGES OF INTERACTIVE AI

a) For Businesses

- *Enhanced Customer Experience:* Interactive AI provide real-time support, personalized recommendations, and a more engaging user experience.
- *Increased Efficiency:* By automating tasks and providing instant access to information, interactive AI can streamline processes and save time and money.
- *Cost Reduction:* Automation can reduce labour costs, while improved efficiency can lead to greater resource allocation.
- *Improved Decision-Making:* AI can analyse large amounts of data to identify patterns and insights, enabling more informed decisions.
- *24/7 Availability:* AI systems are available around the clock and week, providing support and assistance whenever needed.
- *Enhanced Engagement and Conversions:* Interactive AI can lead to higher engagement and conversions by providing a more tailored and dynamic experience.

b) For Individuals

- *Personalized Learning:* Interactive AI can adapt to individual learning styles and needs, providing personalized learning experiences.
- *Enhanced Accessibility:* Voice-activated assistants and other AI-powered tools can make technology more accessible to people with disabilities.
- *Improved Communication and Collaboration:* Interactive AI can facilitate more natural and efficient communication and collaboration.

- *Innovation and Creativity:* Interactive AI can open up new possibilities for entertainment, education, and other creative pursuits.

BENEFITS OF INTERACTIVE TECH TOOLS

The strategic integration of interactive tech tools in modern classrooms yields a multitude of benefits, including:

Amplified Student Engagement: Interactive tech tools inject fun and interactivity into learning, boosting student participation, motivation, and overall enthusiasm.

Personalized Learning Experiences: These tools empower teachers to tailor instruction to meet the unique needs and abilities of each student, fostering a more inclusive and effective learning environment.

Seamless Collaboration and Communication: Interactive tech tools facilitate effortless communication, collaboration, and feedback among students and teachers, promoting a culture of teamwork and mutual support.

Enhanced Teacher Productivity: By automating administrative tasks, interactive tech tools free up teachers to focus on what matters most—delivering high-quality instruction and providing personalized student support.

CONCLUSION

The modern classroom has undergone a transformative revolution, courtesy of interactive tech tools. These innovative solutions have created a dynamic, immersive, and highly effective learning environment that caters to the diverse needs of students. As technology continues to advance at breakneck speed, it's imperative for educators to stay abreast of the latest interactive tech tools and best practices. By doing so, teachers can provide their students with a world-class education that prepares them for success in an increasingly complex and interconnected world.

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வகுப்பறையில் தொழில்நுட்ப மேலாண்மையின் போது எதிர்கொள்ளும் சவால்கள் மற்றும் எதிர்பார்ப்புகள்

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முன்னுரை

நவீனமாகி வரும் கல்வித்துறையில், தொழில்நுட்பம் முக்கிய பங்காற்றுகிறது. தொழில்நுட்ப பயன்பாடு வகுப்பறையில் கல்வி முறையை மாற்றி, மாணவர்களின் பங்களிப்பை அதிகரிக்க உதவுகிறது. ஆனால், இதன் செயல்பாட்டில் சில சவால்களும் உள்ளன. தொழில்நுட்ப மேலாண்மை கருவிகளின் செயல்பாடுகளில் உள்ள நன்மைகள் மற்றும் தொழில்நுட்ப மேலாண்மையில் சவால்கள் மற்றும் எதிர்பார்ப்புகளைப் பற்றி இவ்வியல் எடுத்துரைக்கிறது.

வகுப்பறையில் தொழில்நுட்பம்

கற்றல் கற்பித்தல் செயல்பாடுகளுக்கு தொழில்நுட்ப ஊடகம் முக்கியமானது. இவை மாணவர்களின் கற்றல் வெளிப்பாடுகள் மற்றும் பயன்படுத்துதலில் அதிகளவு உதவிப் புரிகிறது. நிர்வாகப் பணிகளை தன்னிச்சையாக்குவதன் மூலமும், கற்றலைத் தனிப்பயனாக்குவதற்கான வாய்ப்புகளை விரிவுபடுத்துவதன் மூலமும், வகுப்பறையில் செயல்திறனை தொழில்நுட்ப மேலாண்மை மேம்படுத்துகிறது.

கீச்சகம் (Twitter)

முகநூல் (Facebook)

இணைக்கப்பட்ட வலைப்பின்னல் (Linkedin)

மின்னஞ்சல் (Email)

அச்சு (Printed) போன்றன

வகுப்பறை செயல்முறைகளில் தொழில்நுட்பத்தின் முக்கியத்துவம்

1. கல்வி தொழில்நுட்பம் மாணவர்களின் கற்றலை அதிகரிக்கிறது
2. கல்வி தொழில்நுட்பம் சமீபத்தியவற்றைப் புதுப்பித்த நிலையில் இருக்கிறது.
3. கல்வி தொழில்நுட்பம், நிர்வாகப் பணிகளை ஒழுங்குபடுத்துகிறது,
4. நிகழ்நேர மதிப்பீடுகளை எளிதாக்குதல் மற்றும் தரப்படுத்தலை தானியங்குபடுத்துதல் மூலம் வகுப்பறையில் செயல்திறனை மேம்படுத்துகிறது.
5. மின்னிலக்கப் பாடம் (digital lesson) திட்டமிடுபவர்கள் மற்றும் கற்றல் மேலாண்மை அமைப்புகள் போன்ற கருவிகள் காகித பயன்பாட்டினைக்

குறைத்து நேரத்தை மிச்சப்படுத்துகிறது.

6. தொழில்நுட்பம் விரைவான கருத்துகள் மற்றும் முன்னேற்றத்தினை கண்காணிக்க உதவுகிறது,
7. கல்வியாளர்கள் தனிப்பயனாக்கப்பட்ட அறிவுறுத்தலில் அதிக கவனம் செலுத்த முடிகிறது.

வகுப்பறையில் தொழில்நுட்பத்தின் பயன்பாடுகள்

தொழில்நுட்பம் வகுப்பறையில் மாணவர்களுக்கு பல நன்மைகளை அளிக்கிறது

1. கற்பித்தல் மற்றும் கற்றல் அனுபவங்களை மேம்படுத்துகிறது.களுக்கு கற்றலில் ஈடுபாட்டை அதிகரிக்கிறது .
2. காணொளிகள் மற்றும் மின்னிலக்க உருவகப்படுத்துதல்கள் ஊடாடும் கருவிகள் போன்றவை கல்வி செயல்பாடுகளில் பாடங்களை மிகவும் ஆர்வத்துடனும் ஈடுபாட்டுடனும் கற்க உதவுகின்றது. இந்த வளங்கள் பல்வேறு கற்றல் பணிகளைப் பூர்த்தி செய்கின்றன மேலும் மாணவர்கள் சிக்கலான கருத்துக்களை மிகவும் திறம்பட புரிந்துகொள்ள உதவுகின்றது.
3. தொழில்நுட்பம் தனிப்பயனாக்கப்பட்ட கற்றலை செயல்படுத்துகிறது. தகவமைப்பு கற்றல் தளங்கள் தனிப்பட்ட மாணவர் செயல்திறனின் அடிப்படையில் உள்ளடக்கத்தின் கடினத்தை சரிசெய்ய முடிகிறது. இதனால் கற்பவர்கள் தாங்களாகவே கற்று முன்னேற முடிகிறது. இந்த தனிப்பயனாக்கப்பட்ட அணுகுமுறை ஒவ்வொரு மாணவருக்கும் பொருத்தமான அளவிலான சவால்கள் மற்றும் ஆதரவு பெறுவதை உறுதி செய்வதோடு பல்வேறு கற்றல் தேவைகளை நிவர்த்தி செய்ய உதவுகிறது.
4. தொழில்நுட்பம் மாணவர்களிடையே ஒத்துழைப்பை மேம்படுத்துகிறது. கூகுள் வகுப்பறை மற்றும் கூட்டு பயன்பாடுகள் போன்றவை மின்னிலக்க கருவிகள் குழுப்பணியை எளிதாக்குகின்றது, இதனால் மாணவர்கள் வகுப்பறைக்கு உள்ளேயும், வெளியேயும் எளிதாகத் தொடர்பு கொள்ளவும் கருத்துக்களைப் பகிர்ந்து கொள்ளவும் உதவுகிறது. இது குழுப்பணியை வளர்த்து மேலும் சிக்கல் தீர்க்கும் திறன்களை மேம்படுத்துகிறது
5. தொழில்நுட்பம் வளங்களுக்கான அணுகலை விரிவுபடுத்துகிறது. மாணவர்கள் ஆராய்ச்சி தரவுத்தளங்கள் முதல் ஊடாடும் பயிற்சிகள் வரை பரந்த அளவிலான இணையவழி தகவல்களை ஆராயலாம். இது சுயமான கற்றலை ஆதரித்து மேலும் பாரம்பரிய பாடப்புத்தகங்களுக்கு அப்பால் ஆய்வுகளை ஊக்குவிக்கிறது.
6. தொழில்நுட்பம் மின்னிலக்க எழுத்தறிவை வளர்க்க உதவுகிறது. மின்னிலக்க கருவிகளைத் தொடர்ந்து பயன்படுத்துவதன் மூலம், மாணவர்கள் எதிர்கால கல்வி மற்றும் தொழில்முறை வெற்றிக்குத் தேவையான திறன்களைப்

பெறுகிறார்கள். ஒட்டுமொத்தமாக, தொழில்நுட்பம் வகுப்பறையை மிகவும் ஈடுபாட்டுடன் கூடிய, தனிப்பயனாக்கப்பட்ட மற்றும் ஒத்துழைப்புடன் கூடிய கற்றல் சூழலாக மாற்றுகிறது.

கற்றலை மேம்படுத்தும் தொழில்நுட்பம்

ஆசிரியர்களுக்கும் மாணவர்களுக்கும் கல்வி செயல்முறைகளை நெறிப்படுத்துதல், அணுகலை மேம்படுத்துதல் மற்றும் கற்றல் அனுபவத்தை மேம்படுத்துதல் மூலம் தொழில்நுட்பம் கற்றலை மிகவும் சிறப்புடையதாக்குகிறது.

1. தொழில்நுட்பம் வளங்களுக்கான அணுகலை மேம்படுத்துகிறது.

மின்னிலக்கத் தளங்கள் மற்றும் இணையத் தரவுத்தளங்கள் போன்றவை மாணவர்களுக்கு ஆராய்ச்சி கட்டுரைகள், பயிற்சிகள் மற்றும் ஊடாடும் உருவகப்படுத்துதல் உள்ளிட்ட பரந்த அளவிலான கல்விப் பொருட்களை வழங்குகின்றது. தகவலுக்கான இந்த எளிதான அணுகல் மாணவர்கள் பொருத்தமான வளங்களை விரைவாகக் கண்டறிய அனுமதித்து மற்றும் சுய கற்றலை வளர்க்கிறது.

2. தொழில்நுட்பம் தனிப்பயனாக்கப்பட்ட கற்றலை எளிதாக்குகிறது

தகவமைப்பு கற்றல் அமைப்பானது மாணவர்களின் செயல்திறனைப் பகுப்பாய்வு செய்து, அவர்களின் தனிப்பட்ட தேவைகளுக்கு ஏற்ப உள்ளடக்கத்தின் கடினத்தை சரிசெய்கின்றது. இந்த வடிவமைக்கப்பட்ட அணுகுமுறை மாணவர்கள் தாங்களாகவே வேகமாக கற்றுக்கொள்ள உதவுகிறது, அவர்கள் பொருத்தமான அளவிலான சவால்கள் மற்றும் ஆதரவைப் பெறுவதை உறுதி செய்கிறது. இது மிகவும் பயனுள்ள கற்றல் விளைவுகளுக்கு வழிவகுக்கிறது.

3. தொழில்நுட்பம் நிர்வாகப் பணிகளில் செயல்திறனை மேம்படுத்துகிறது

மின்னிலக்க தரப் புத்தகங்கள், தானியங்கி மதிப்பீடுகள் மற்றும் கற்றல் மேலாண்மை அமைப்புகள் போன்றவை ஆசிரியர்கள் கருவிகளைத் தயார்படுத்தல் மற்றும் காகித வேலைகளில் செலவிடும் நேரத்தைக் குறைக்கின்றது. இது கல்வியாளர்கள் மற்றும் மாணவர்களுக்கு அறிவுறுத்தலிலும் தனிப்பயனாக்கப்பட்ட ஆதரவை வழங்குவதிலும் அதிக கவனம் செலுத்துகிறது.

4. தொழில்நுட்பம் குழுக் கற்றலை ஊக்குவிக்கிறது.

மின்னிலக்கக் கருவிகள் மாணவர்கள் வகுப்பறைக்கு வெளியில் கூட குழுத் திட்டங்களில் ஒன்றாக வேலை செய்யவும், கருத்துக்களைத் தடையின்றி பகிர்ந்து கொள்ளவும் உதவுகின்றது. இந்த ஒத்துழைப்பு ஆழமான புரிதலையும், சிக்கல் தீர்க்கும் திறனையும் வளர்க்கிறது. கற்றல் செயல்முறையை மிகவும் திறமையாகவும் ஈடுபாட்டுடனும் செயல்பட உதவுகிறது.

5. தொழில்நுட்பம் வளங்களுக்கான அணுகலை ஒழுங்குபடுத்துகிறது.

கற்றல் அனுபவங்களைத் தனிப்பயனாக்குகிறது. நிர்வாகச் சமைகளைக் குறைத்து மற்றும் ஒத்துழைப்பை மேம்படுத்துகிறது. கற்றல் செயல்முறையை மிகவும் திறமையாகவும்இ பயனுள்ளதாகவும் மாற்றுகிறது.

6. வகுப்பறையில் தொழில்நுட்பத்தை திறம்பட பயன்படுத்தும் விதங்கள்

வகுப்பறையில் தொழில்நுட்பத்தை திறம்பட பயன்படுத்தவும், கல்வியாளர்கள் கற்றலை மேம்படுத்தவும், பல்வேறு தேவைகளை நிறைவேற்றவும் மற்றும் வகுப்பறை நிர்வாகத்தை நெறிப்படுத்தும் கருவிகளை ஒருங்கிணைப்பதில் கவனம் செலுத்த வேண்டும். முதலில், கல்வி குறிக்கோள்களுடன் ஒத்துப்போகும் பொருத்தமான கருவிகளைத் தேர்ந்தெடுக்க செய்தல் வேண்டும்.

எ.கா. ஆசிரியர்கள் வகுப்பறையில் தொழில்நுட்பத்தை எவ்வாறு பயன்படுத்துகிறார்கள் என்பதைப் பார்வையிடவும் ஊடாடும் கருவிகளான வெண்பலகை (Whiteboard) மற்றும் பல்லுட விளக்கக்காட்சிகள் ஆகியவை பாடங்களை மிகவும் ஈடுபாட்டுடன் மாற்றுகிறது. அதே நேரத்தில் கல்வி பயன்பாடுகள் மற்றும் தகவமைப்பு கற்றல் தளங்கள் தனிப்பட்ட மாணவர் தேவைகளுக்கு ஏற்ப அறிவுறுத்தலை வடிவமைக்க முடியுகிறது.

➤ பாரம்பரிய கற்பித்தல் முறைகளுக்குப் பொருத்தமான வகையில் பாடத் திட்டங்களில் தொழில்நுட்பத்தைச் சேர்க்க வேண்டும்.

எ.கா. பாடப்புத்தகங்களைச் சேர்க்கவும்,ஆன்லைன் வளங்களைப் பயன்படுத்தவும், ஒரு தலைப்பில் மாணவர்களுக்கு மாறுபட்ட கண்ணோட்டங்களை வழங்கவும், மெய்நிகர் ஆய்வகங்கள் (Virtual Labs) மற்றும் உருவகப்படுத்துதல்கள் போன்ற கருவிகள் புரிந்து கொள்ளவும் நேரடி அனுபவங்களை வழங்க முடிகிறது.

➤ மின்னிலக்கக் கருவிகளைப் பயன்படுத்தி மாணவர்களின் தொடர்பை மற்றும் ஒத்துழைப்பை ஊக்குவிக்க கூகுள் வகுப்பறை அல்லது மைக்ரோசாஃப்ட் நிறுவனம் போன்ற தளங்களின் குழு திட்டங்கள் மற்றும் விவாதங்களை எளிதாக்குகின்றது. மாணவர்கள் குழுப்பணி மற்றும் தகவல் தொடர்பு திறன்களை வளர்க்க உதவுகின்றது. இந்த கருவிகள் வகுப்பறைக்கு உள்ளேயும்இ வெளியேயும் நிகழ்நேர கருத்துகளையும் மற்றும் ஒத்துழைப்பையும் அனுமதிக்கின்றது.

➤ கல்வி நோக்கங்களைப் பூர்த்தி செய்வதை உறுதிசெய்யவும், தொழில்நுட்ப பயன்பாட்டை தொடர்ந்து கண்காணித்து மதிப்பிடுதல் வேண்டும். மாணவர்களின் முன்னேற்றத்தைக் கண்காணிக்கவும், தேவைக்கேற்ப அறிவுறுத்தலைகளை சரிசெய்யவும் கற்றல் மேலாண்மை அமைப்புகளிலிருந்து தரவைப் பயன்படுத்தவும் உதவுகிறது.

► ஆசிரியர்கள் மற்றும் மாணவர்கள் இருவரும் பயன்படுத்தும் தொழில்நுட்பம் வசதியாகவும் திறமையாகவும் இருப்பதை உறுதி செய்ய பயிற்சி அளிக்கிறது. தொழில்நுட்பம் பயனுள்ள ஒருங்கிணைப்புக்கு நன்மைகளை அதிகரிப்பதற்கு தொடர்ச்சியான ஆதரவு மற்றும் தொழில்முறை மேம்பாடு தேவைபடுகிறது. தொழில்நுட்பத்தை சிந்தனையுடன் ஒருங்கிணைப்பதன் மூலம், கல்வியாளர்கள் கற்றலை மேம்படுத்தலாம். ஒத்துழைப்பை வளர்க்க மற்றும் வகுப்பறை நிர்வாகத்தை நெறிப்படுத்த ஈடுபாட்டுடன் கூடிய பயனுள்ள கல்விச் சூழலை உருவாக்கலாம்.

வகுப்பறையில் கல்வி தொழில்நுட்பத்தின் முக்கியம்

வகுப்பறையில் கல்வி தொழில்நுட்பம் மிக முக்கியமானது. இது கற்பித்தல் மற்றும் கற்றல் அனுபவங்களை மேம்படுத்துகிறது. இதன் முதன்மையான காரணங்களில் ஒன்று அதிகரித்த ஈடுபாடு பல்லாடக விளக்கக்காட்சிகள், கல்வி பயன்பாடுகள் மற்றும் மெய்நிகர் உருவகப்படுத்துதல்கள் போன்ற ஊடாடும் கருவிகள் மூலம் பாடங்களை மிகவும் ஈடுபாட்டுடனும், பார்வைக்கு ஊக்கமளிப்பதாகவும் அமைகின்றது, இது மாணவர்களின் கவனத்தை ஈர்க்கவும் அவர்களின் ஆர்வத்தை பராமரிக்கவும் உதவுகிறது. இந்த ஈடுபாடு பெரும்பாலும் தகவல்களை சிறப்பாகப் புரிந்துகொள்வதற்கும், தக்கவைத்துக்கொள்வதற்கும் வழிவகுப்பதோடு வகுப்பறையில் தொழில்நுட்பத்தின் முக்கியத்துவத்தை எடுத்துக் காட்டுகிறது.

தனியியனாக்கியிட்ட கற்றல்

தகவமைப்பு கற்றல் தளங்கள் மூலம் தனிப்பட்ட மாணவர்களின் தேவைகளைப் பூர்த்தி செய்ய கல்வியாளர்கள் தொழில்நுட்பத்தைப் பயன்படுத்துகின்றனர். இந்த அமைப்புகள் மாணவர்களின் முன்னேற்றத்தை மதிப்பிடுகின்றது. மேலும் நிகழ்நேரத்தில் உள்ளடக்கத்தை சரிசெய்கின்றது. தனிப்பயனாக்கப்பட்ட ஆதரவுகள் மற்றும் சவால்களை வழங்குகின்றது. ஒவ்வொரு மாணவரும் பொருத்தமான அளவிலான கடினத்தைப் பெறுவதை உறுதிசெய்கிறது, மேலும் உள்ளடக்கிய கற்றல் சூழலை வளர்க்கிறது.

தொழில்நுட்பத்தால் வளங்களுக்கான அணுகுமுறைகள் மேம்படுத்தப்பட்டுள்ளது. மாணவர்கள் ஆராய்ச்சி தரவுத்தளங்கள், எண்மின் பாடப்புத்தகங்கள் (digital book) மற்றும் அறிவுறுத்தல் காணொளி உள்ளிட்ட பல்வேறு வகையான இணையதளப் பொருட்களை ஆராய முடிகிறது. இந்த பரந்த அணுகல் சுதந்திரமான கற்றலை ஆதரித்து மற்றும் பாரம்பரிய வளங்களை ஆராய்வதை ஊக்குவிக்கிறது.

தொழில்நுட்பம் ஒத்துழைப்பை எளிதாக்குகிறது. கூகுள் வகுப்பறை மற்றும் கூட்டுத் தளங்கள் போன்ற எண்மின் கருவிகள் மாணவர்கள் வகுப்பறைக்கு உள்ளேயும், வெளியேயும் செயல்திட்டங்களில் ஒன்றாக வேலை செய்யவும், கருத்துக்களைப் பகிர்ந்து கொள்ளவும், திறம்பட தொடர்பு கொள்ளவும் உதவுகின்றது. இது எதிர்கால வெற்றிக்குத் தேவையான குழுப்பணி மற்றும் சிக்கல்களைத் தீர்க்கும் திறன்களை வளர்க்கிறது.

கல்வி தொழில்நுட்பம் கற்றல் சூழலை வளப்படுத்துவதோடு, கல்வியை மிகவும் ஈடுபாட்டுடன், தனிப்பயனாக்கி, அணுகக்கூடியதாக மாற்றுகிறது. அதே நேரத்தில் தொழில்நுட்பம் நிறைந்த உலகத்திற்கு மாணவர்களை தயார்படுத்துகிறது.

வகுப்பறை கற்பித்தலில் தொழில்நுட்பத்தின் நன்மைகள்

- தனிப்பயனாக்கப்பட்ட கற்றல்
- படிப்பில் சிறந்த ஈடுபாடு
- ஆசிரியர்கள் மற்றும் சகாக்களுடன் எளிதான ஒத்துழைப்பு
- நவீன உலகத் திறன்களை வளர்த்துக் கொள்ளுதல்
- பரந்த அளவிலான வளங்களுக்கான அணுகல்
- உலகளாவிய கற்றல்
- சுயமாக வேகமாக தானே கற்றல்
- மாணவர்களின் முன்னேற்றத்தைக் கண்காணிக்க தரவு சார்ந்த நுண்ணறிவுகள்

பள்ளிக் கூடத்தில் தொழில்நுட்பத்தின் நன்மைகள்

1. மாணவர்களின் ஈடுபாட்டை அதிகரித்தல்

மாணவர்கள் தொழில்நுட்பத்துடன் நெருக்கமாக உள்ளனர். Minecraft, Fortnite போன்ற விளையாட்டுகள், Twitter, Instagram, TikTok போன்ற சமூக ஊடகங்கள் மிகப்பெரிய வரவேற்பைப் பெற்றுள்ளது. இந்த தொழில்நுட்பத்தை கல்வியிலும் பயன்படுத்திப் பாடங்களை மாணவர்கள் ஆர்வத்துடன் கற்க உதவுகிறது.

2. குழு பணிகளை ஊக்குவித்தல்

- Google Docs மூலமாக மாணவர்கள் சேர்ந்து குறிப்பெடுத்தல்
- WebQuests மற்றும் Wiki Pages உருவாக்குதல்
- கேமி.பிகேஷன் (Gamification) மூலம் கேள்வி பதில் போட்டிகள் மற்றும் Team Paste ஒப்படைப்புகளை கொண்டு வருதல்

3. மாணவர்களை எதிர்கால வாழ்க்கைக்குத் தயார்ப்படுத்துதல்

- மைக்ரோசா.்டி ஆபிஸ், தட்டச்சு திறன்கள், மின்னஞ்சல் தொடர்பு, மின்னிலக்க காலண்டர் மேலாண்மை போன்ற திறன்கள் கட்டாயமாக்குதல்.
- பல்கலைக்கழங்களில் ஆன்லைன் மற்றும் ஹைப்ரிட் வகுப்புகள் அதிகரித்தல்

4. ஆசிரியர்- மாணவர் தொடர்பு அதிகரித்தல்

- Google Forms மூலம் மாணவர்களிடமிருந்து கருத்து பெறலாம்
- GoGuardian Teacher Chat மூலம் நேரடியாக மாணவர்களை வழிநடத்தலாம்

5. மேம்பட்ட கற்பித்தல் பயனளிப்பு

- வலைத் தேடல்கள் (WebQuests) மூலம் மாணவர்கள் சுயமாகக் கற்றுக்கொள்ளுதல்
- GoGuardian Teacher Screen View கொண்டு மாணவர்கள் பாடத்தைப் புரிந்துகொண்டார்களா என்பதை உறுதி செய்தல்.

6. வேறுபட்ட கற்பித்தல் முறைகளை ஆதரித்தல்

- Screen Function ➤ தேர்வுகளுக்குப் பாதுகாப்பாகவும், மாணவர்களை குறிப்பிட்ட உள்ளடக்கங்களுக்கு மட்டுமே அணுக அனுமதியளித்தல்.

பள்ளிக் கூடத்தில் தொழில்நுட்பப் பயன்பாட்டில் உள்ள சவால்கள்

1. மாணவர்கள் தொழில்நுட்பத்தை தவறாகப் பயன்படுத்துதல்

- VPNS மற்றும் Incognito Mode தடுப்பு
- சாதனங்களை லாக் செய்வதன் மூலம் தேவையற்ற நேரங்களில் பயன்படுத்துவதைத் தடுக்கும் வசதி

2. ஆசிரியர்களின் தொழில்நுட்ப அறிவு மற்றும் பயிற்சி

- GoGurdian Teacher பயிற்சிகள் மற்றும் ஆதரவு குழு
- ஆசிரியர்களுக்கான வளங்கள்

3. இணையவழி பாதுகாப்பு பிரச்சனைகள்

- தவறான உள்ளடக்கங்களை தடுக்கும் முக்கியச் சொல் வடிப்புக் கட்டுப்பாடு
- குறிப்பிட்ட செயல்பாடுகள் மீதான பாதுகாப்பு எச்சரிக்கைகள்

4. தொழில்நுட்பத்தின் செலவு

- இலவச தொழில்நுட்ப விருப்பங்கள்
- Wiki Pages மூலம் வகுப்பு வலைப்பதிவு உருவாக்குதல்
- Podcast, Slideshow, Video போன்ற மின்னிலக்கத் திட்டங்களைப் பயன்படுத்துதல்
- Google Calender மூலம் இணையவழிப் பாடத்திட்ட அட்டவணைகளை உருவாக்குதல்

5. தொழில்நுட்ப மாற்றங்களுடன் தொடர்பு கொள்ளுதல்

- GoGuardian குழு தற்போதைய தொழில்நுட்ப மேம்பாடுகளுக்கு ஏற்ப புதுப்பிக்கப்படுகிறது
- GoGuardian Admin மற்றும் Teacher ஆகியவை ஆசிரியர்களின் வேலைப்பளுவைக் குறைத்து, மாணவர்களின் கற்றல் அனுபவத்தை மேம்படுத்தவும், பாதுகாப்பானதாகவும் வைத்திருக்க உதவுகின்றது.

வகுப்பறையில் தொழில்நுட்ப மேலாண்மை

வகுப்பறையில் தொழில்நுட்ப மேலாண்மை என்பது, தொழில்நுட்ப கருவிகளைப் பயன்படுத்தி வகுப்பறை மேலாண்மையை மேற்கொள்வதாகும். இவற்றின் மூலம், கற்றல் செயல்முறை மேம்படுத்தப்பட்டு, மாணவர்களின் கற்றல் திறன் வளர்க்கப்படுகிறது.

வகுப்பறையில் தொழில்நுட்ப மேலாண்மைக்குப் பயன்படுத்தியுள்ள கருவிகள்:

- கணினி (Computer)
- பலகைக் கணினி (Tablet)
- திறன்பேசி (Smart Phone)
- மெய்நிகர் கற்றல் மையங்கள் (Virtual Learning Centre)
- மிகை மெய்ம்மை (Augmented Reality)
- மெய்நிகர் மெய்ம்மை (Virtual)
- மின்னிலக்கப் பாடம் திட்டமிடுபவர்கள் (Digital lesson Planning)

1. கற்பித்தல் மற்றும் கற்றல் கருவிகள்

- கற்றல் மேலாண்மை அமைப்பு (LMS) (Moodle, Google Classroom, Blackboard)
- வழிநடத்தும் செயலிகள் – Kahoot, Quizizz, Mentimeter
- வகுப்பறை ஒழுங்குமுறை செயலிகள் – ClassDojo, Edmodo

2. தகவல் தொடர்பு மற்றும் ஒத்துழைப்பு கருவிகள்

- வீடியோ காட்சி மற்றும் சந்திப்பு கருவிகள் – Zoom, Microsoft Teams, Google Meet
- ஆவண பகிர்வு மற்றும் ஒத்துழைப்பு கருவிகள் – Google Docs, OneDrive, Dropbox

3. மதிப்பீடு மற்றும் திருத்தம் செய்யும் கருவிகள்

- தனிப்பட்ட மற்றும் குழு மதிப்பீடு – Google Forms, Socrative
- தனிப்பட்ட பின்னூட்டம் வழங்குதல் – Turnitin, Grammarly

4. வகுப்பறை மேலாண்மை மற்றும் கட்டுப்பாடு கருவிகள்

- Digital Whiteboards – Jamboard, Miro, Whiteboard.fi
- Screen Monitoring Tools – GoGuardian, LanSchool
போன்ற கருவிகள் வகுப்பறையின் செயல்திறனை அதிகரிக்க உதவுகின்றது.

வகுப்பறை மேலாண்மை கருவிகள் மற்றும் உத்திகளின் வகைகள்

வகுப்பறை மேலாண்மைக்கு உதவ பல எண்மின் கருவிகள் மூலம் பயன்படுத்தக்கூடிய பல்வேறு கருவிகள் மற்றும் உத்திகள் உள்ளன. இந்தப் பிரிவில், Class Dojo, Group Maker மற்றும் Class123 ஆகியவற்றின் Edtech கருவிகள் பற்றிய விவாதங்கள் இருக்கிறது. இந்தக் கருவிகள் ஒவ்வொன்றும் வகுப்பறை நடைமுறைகளை மேம்படுத்துவதற்கான செயல்பாடுகளை கட்டமைப்பதன் மூலமும், மாணவர் நடத்தை தொடர்பான தகவல்களை பெற்றோருடன் பகிர்ந்து கொள்வதன் மூலமும், அனைத்து மாணவர்களுக்கும் நேர்மறையான கற்றல் சூழல்களைப் பராமரிக்க உதவும் வகையில் மின்னிலக்க முறையில் மேம்படுத்தப்பட்ட உத்திகளை வழங்குவதன் மூலமும் வகுப்பறை மேலாண்மைக்கு உதவுகிறது.

வகுப்பு டோஜோ (Class Dojo)

வகுப்பறை நிர்வாகத்தின் பல்வேறு அம்சங்களில் ஆசிரியர்களுக்கு உதவும் தொழில்நுட்பக் கருவிகளில் ஒன்று கிளாஸ் டோஜோ. இது மாணவர்களின் தரவுகளைச் சேகரிக்க ஆசிரியருக்கு உதவுகிறது. மேலும் வாராந்திர அல்லது மாதாந்திர அறிக்கைகளை உருவாக்குகிறது. இதன் விளைவாக, இது ஆசிரியருக்கு நேர்மறையான வெகுமதி அமைப்புகளை அமைக்க அனுமதிக்கிறது. 2011 ஆம் ஆண்டில் முன்னாள் மேலாண்மை ஆலோசகர் மற்றும் விளையாட்டாளரால் ஆசிரியர்கள் மற்றும் பெற்றோருடன் கலந்தாலோசித்து வகுப்பு டோஜோ உருவாக்கப்பட்டது. அவர்களில் யாருக்கும் குழந்தைகள் இல்லை. வகுப்பு டோஜோ ஆசிரியர்கள் மாணவர்கள் மற்றும் பெற்றோருடன் சரியான நேரத்தில் தகவல்களைப் பகிர்ந்து கொள்ளும் திறனை வழங்குகிறது. அதில் 30க்கும் மேற்பட்ட மொழிகளில் மொழிபெயர்க்க முடியும். இது கணினி, பலகைக்கணினி மற்றும் திறன்பேசி மூலம் அணுகக்கூடிய பல்துறை பயன்பாடாகும். கிளாஸ் டோஜோ கருவித்தொகுப்பில் எட்டு வெவ்வேறு கருவிகள் இடம்பெற்றுள்ளன.

இயக்கம்:

இயக்கம் என்பது ஆசிரியர் மாணவர்களுக்கு மின்னணு முறையில் வழிமுறைகளைக் காண்பிக்கப் பயன்படுத்தக்கூடிய ஒரு கருவியாகும்.

குழு உருவாக்குபவர்:

குழு உருவாக்குபவர் தோராயமாக மாணவர்களை இணைகளாகவோ அல்லது மூன்று, நான்கு அல்லது அதற்கு மேற்பட்ட குழுக்களாகவோ உருவாக்குதல்

இசை:

வகுப்பு சூழலை மேம்படுத்த பின்னணி இசையாக இசைக்கலாம்.

இரைச்சல் மீட்டர்:

மாணவர்கள் சுயமாக நிர்வகிக்க உதவும் வகையில், ஒரு இரைச்சல் மீட்டர், காட்சி காட்சிகள் மூலம் வகுப்பு இரைச்சல் அளவைக் கண்காணிக்கிறது.

திங்க் பேர் ஷேர்:

கிளாஸ் டோஜோ, மாணவர்கள் ஒரு கூட்டாளருடன் திரும்பிப் பேசுவதற்கான அறிவுறுத்தல்களின் மின்னிலக்க காட்சியை உருவாக்க பயனாளர்களை அனுமதித்து, இந்த திங்க் பேர் ஷேர் உத்தியைப் பயன்படுத்துகிறது.

சீரற்றது:

சீரற்றது என்பது ஒரு சீரற்ற மாணவர் ஜெனரேட்டராகும். இது புரிதலுக்காக அல்லது தன்னார்வத் தொண்டு செய்ய ஒரு மாணவரைத் தேர்ந்தெடுக்க உதவுகிறது.

டைமர்:

குழு மாற்றங்கள், குழு வேலை,சுதந்திர வேலை போன்றவற்றுக்கு உதவ டைமர் அம்சம் உட்பொதிக்கப்பட்டுள்ளது.

இன்று:

இன்றைய அம்சம் மாணவர்களுக்கு தினசரி செய்திகள் மற்றும் செய்திமடல்களுக்கான காட்சிப் பொருளாக செயல்படுகிறது.

குரூப்மேக்கர்

குரூப்மேக்கர் என்பது வகுப்பறை நிர்வாகத்தை மேம்படுத்தவும், அனைத்து குழு உறுப்பினர்களையும் பட்டியலிடுவதன் மூலம் உற்பத்தித்

திறன் கொண்ட மாணவர் ஒத்துழைப்பை அதிகரிக்கவும் பல அம்சங்களைக் கொண்ட மற்றொரு தொழில்நுட்பக் கருவியாகும். தற்போது, இது iPhone, iPad மற்றும் iTouch க்கு மட்டுமே கிடைக்கிறது. இது பயன்பாட்டின் முதன்மை கவனம் பல்வேறு மாணவர்களின் குழுக்களை உருவாக்கி நிர்வகிப்பதாகும். குழுக்களில் இருக்க வேண்டிய அனைத்து மாணவர்களையும் அடையாளம் காண்பதில் மாற்றுகளுக்கு உதவக்கூடிய மாணவர்கள் படங்களுக்கான அம்சத்தை GroupMaker கொண்டுள்ளது.

Class Dojo ஐப் போலவே, Group Maker இன் பிற அம்சங்கள்:

டைமர்:

வகுப்பறையில் டைமரைப் பயன்படுத்துவதைப் போலவே, இந்தப் பயன்பாடும் ஆசிரியரை வெள்ளைப் பலகையில் டைமரைப் பயன்படுத்தி மாணவர் குழுக்களை உருவாக்க அனுமதிக்கிறது. இது மாணவர்கள் கையில் இருக்கும் பணியில் ஈடுபடும்போது அவர்களுக்கு ஒரு காட்சியை அனுமதிக்கிறது.

இரைச்சல் கண்காணிப்பு:

இந்த அம்சம் மாணவர்களின் இரைச்சல் அளவைக் கண்காணித்து, அவர்களின் ஒலி அளவு கற்றல் சூழலுக்கு ஏற்றதாகவும், உகந்ததாகவும் உள்ளதா என்பதை வகுப்பிற்கு நினைவூட்டுகிறது.

வகுப்பு 123

Class123 என்பது பல வகுப்பறை கருவிகள் மற்றும் தகவல் தொடர்பு வளங்களைக் கொண்ட இலவசமாக பதிவிறக்கம் செய்யக்கூடிய வகுப்பறை மேலாண்மை ஊடகமாகும். Class123 மொபைல் செயலி மற்றும் டெஸ்க்டாப்பில் உள்ள இணைய அடிப்படையிலான செயலி இரண்டிலும் கிடைக்கிறது. இந்த வகுப்பறை மேலாண்மை ஊடகம், பெற்றோர்கள் தங்கள் குழந்தையின் வகுப்பறை பங்கேற்பில் ஈடுபடும்போது ஆசிரியர்கள் எதிர்கொள்ளும் அன்றாட வழக்கங்களுக்கு உதவுகிறது. கூடுதலாக, Class123 வளிமண்டலத்தை உருவாக்குகிறது, ஏனெனில் ஆசிரியர்கள் வகுப்பறை அமைப்பில் தங்கள் நம்பிக்கையை வளர்த்துக் கொள்கிறார்கள், வகுப்பறை மேலாண்மை என்பது மிகவும் பொழுதுபோக்கு அனுபவமாகும். அதன் பயன்பாடு வண்ணமயமானது.

ஆசிரியர்களுக்கு அலைபேசி சாதனம் அல்லது கணினியிலிருந்து மாணவர்களுக்கு உடனடி கருத்துகளை வழங்க வாய்ப்பளிக்கிறது. இது 'லக்கி டிரா' மற்றும் டைமர் என இரண்டு அம்சங்களையும் கொண்டுள்ளது. முன்னர் குறிப்பிட்டது போல, 'லக்கி டிரா' அம்சம், ஆசிரியரால் அமைக்கப்பட்ட, வெள்ளைப் பலகையில் வெளிப்படுத்தப்பட்ட அத்தனை மாணவர்களையும் தோராயமாகத் தேர்ந்தெடுக்கும். 'டைமர்' பாடத்தின் அல்லது பணிகளின் பகுதிகளை நேரப்படுத்தக்கூடிய ஒரு வசதியான கவுண்டவுன் மற்றும்

ஸ்டாப்வாட்ச் வளத்தைக் கொண்டுள்ளது. இந்த அம்சங்களுக்கான அனிமேஷன்கள் வேடிக்கையாகவும் கவர்ச்சியாகவும் இறுதியில் குறிப்புகள் பகுதி கூடுதலாகவும் வழங்கப்படுகின்றது.

கற்றல் மேலாண்மை வகுப்பு (LMS) போல் Class123 இன் மூன்று அம்சங்களும்: மின்னிலக்க சாக்போர்டு:

மின்னிலக்க சாக்போர்டு தகவல்களைக் காண்பிக்கவும், சிக்கல்களைத் தீர்க்கவும் பயன்படுத்தப்படலாம். இதை ஆசிரியர்கள் அல்லது மாணவர்கள் சேமித்து மீண்டும் பயன்படுத்தலாம்.

மணி:

வகுப்பை ஆர்டர் செய்ய அழைக்க ஆசிரியர் பயன்படுத்த வேண்டிய ஒரு அம்சம் மணி.

இலக்கு நிர்ணயம்:

மாணவர்கள் அடைய வேண்டிய இலக்குகளை பாடத்திற்குள் ஆசிரியர்கள் வகுக்க இந்த செயலி அனுமதிக்கிறது.

கருத்து:

ஆசிரியர்கள், பெற்றோர்கள் மற்றும் மாணவர்களிடமிருந்து கருத்துகளைப் பெறலாம். மேலும் பெற்றோர்கள், மாணவர்களுக்கு கருத்துக்களை அனுப்பலாம்.

தனிப்பயனாக்கம்:

Class123 மாணவர்கள் தங்கள் குறிப்பிட்ட விருப்பங்களுக்கு ஏற்றவாறு இடைமுகம் மற்றும் அமைப்புகளைத் தனிப்பயனாக்க அனுமதிப்பதன் மூலம் தங்கள் செயலியைத் தனிப்பயனாக்க அனுமதிக்கிறது.

இந்த தொழில்நுட்ப கருவிகள், சரியான முறையில் பயன்படுத்தப்படும்போது, மாணவர்களை மையமாகக் கொண்ட வகுப்பறையை மேம்படுத்த உதவுகிறது. டைமர்கள், இரைச்சல், மானிட்டர்கள் மற்றும் மின்னிலக்க சாக்போர்டுகள் போன்ற அம்சங்கள் மாணவர்களுக்கு கட்டமைப்பு மற்றும் கருத்துக்களை வழங்க முடிகிறது.

ஆசிரியர் சார்மிலக்கியக் கண்ணோட்டம்

வகுப்பறை மேலாண்மை இல்லாதபோது கற்பித்தல் மற்றும் மாணவர்கள் கற்றல் பாதிக்கப்படுகின்றது. வகுப்பறைகள் நிறுவப்பட்ட நடத்தை எதிர்பார்ப்புகளைக் கொண்டிருக்காதபோது, ஒழுங்கற்றதாக இருக்கும்போது அல்லது மாணவர்கள் மரியாதையற்றவர்களாக இருக்க அனுமதிக்கப்படும்போது குழப்பம் தொடர்ந்து நிலவுகிறது. இருப்பினும் “மாணவர்கள் கற்றலில் ஈடுபடும் போது ஆபத்து இல்லாத சூழலை உருவாக்குவதில் ஒழுக்கம், வகுப்பறை மேலாண்மை மற்றும் ஈடுபாட்டு உத்திகள் மிக முக்கியமானவை” (ரிஷர், 2009)

ஒரு நல்ல வகுப்பறை மேலாண்மை அமைப்பைக் கொண்ட கல்வியாளர்கள் மற்றும் ஆசிரியர்கள் மாணவர்களைத் திறமையடைய கற்றல் சூழலை அனுமதிக்கின்றனர். முப்பது ஆண்டுகளுக்கு மேலாக நடத்தப்பட்ட ஆராய்ச்சி, வெற்றிகரமான கற்பித்தலில் வகுப்பறை மேலாண்மை ஒரு முக்கிய அங்கமாகும் என்பதைக் குறிக்கிறது (மார்க்சானோ, 2003).

வகுப்பறை மேலாண்மையை திறம்படச் செய்வதற்கு, வகுப்பறை விதிகள் மற்றும் நடைமுறைகளை வடிவமைத்து செயல்படுத்துவது இதில் அடங்கும் (மார்க்சானோ, 2003).

நடத்தை எதிர்பார்ப்புகள் மற்றும் நடைமுறைகள் ஏன் முக்கியம்? மாணவர்கள் கற்றல் செயல்பாட்டில் ஈடுபடும் ஒரு கற்றல் சூழலை அடைய உதவுகின்றது. ஒவ்வொரு கல்வி அமைப்பிலும் அவர்களின் கற்றல் மற்றும் நடத்தையின் அனைத்து பகுதிகளிலும் அவர்களிடமிருந்து என்ன எதிர்பார்க்கப்படுகிறது என்பதை மாணவர்கள் அறிந்துகொள்கிறார்கள். விதிகள் மற்றும் நடைமுறைகள் பள்ளி நாளில் ஏற்படும் மாற்றங்களின் போது வீணாகும் நேரத்தைக் குறைக்கின்றன மேலும் பணி நேரங்களை அதிகரிக்கின்றது. இது விதிகள் அல்லது “நடத்தை விதிவிலக்குகள்” எனவும் அழைக்கப்படுகிறது. அவை புரிந்துகொள்ள எளிதாக இருக்க வேண்டும். “இல்லை” என்ற வார்த்தை இல்லாமல் நேர்மறையாகக் கூறப்பட வேண்டும். மேலும் மாணவர்கள் பார்க்க அறையில் இடுகையிடப்பட வேண்டும். ஆண்டின் தொடக்கத்தில் உங்கள் வகுப்பறை மேலாண்மை விதிகள் மற்றும் நடைமுறைகளை அமைப்பது அவசியம். தேவைக்கேற்ப ஆண்டு முழுவதும் சரிசெய்தல்களைச் செய்யலாம். (மார்க்சானோ, 2003).

வகுப்பறை நிர்வாகத்தின் ஒரு முக்கிய அம்சம், மாணவர்கள் தவறாக நடந்து கொள்ளாமல் இருக்க மிகவும் பிஸியாக இருக்கும் வகையில் பல பணிகளை வகுப்புகளுக்கு வழங்குவதாகும் (மார்க்சானோ, 2003). எதிர்பார்ப்புகளை அறிந்திருக்கும்போது கற்பவர்கள் செழித்து வளர்கிறார்கள். பின்னர், அந்த தினசரி பணிகள் சீராக இருப்பதை அவர்கள் நம்பலாம். ஆசிரியர்கள் தங்கள் வகுப்புகளில் தினசரி பழக்கங்களை எவ்வளவு அதிகமாக ஏற்படுத்துகிறார்களோ, அவ்வளவு எளிதாக மாணவர்கள் தங்கள் வாழ்க்கையின் வழியைக் கண்டுபிடிப்பார்கள். ஆண்டின் தொடக்கத்தில், சரியானதைச் செய்பவர்கள் மீது கவனம் செலுத்தப்படுகிறது. மற்றவர்கள் விரைவாக எதிர்வினையாற்றாமல் கவனிக்கப்படுகிறார்கள் என்பதை வேறுபடுத்துவது முக்கியமானது. அதாவது, ஈடுபாடுள்ள மாணவர்களிடம் உங்கள் கவனத்தைத் திருப்பும் போது, மற்ற மாணவர்களும் உங்களின் நேர்மறையான கவனத்தைப் பெறுவார்கள் என்ற நம்பிக்கையில் வேலையைத் தொடங்குவார்கள்.

வகுப்பறை மேலாண்மையில் தொழில்நுட்பம்

ஆசிரியர் பொறுப்புகளின் பட்டியல் தொடர்ந்து, வளர்ந்து வருவதால்

வகுப்பறை நிர்வாகத்தை ஆதரிக்க தொழில்நுட்பத்தைப் பயன்படுத்துவது, கற்பித்தலின் அன்றாடப் பணிகளைச் சமாளிக்க வேண்டியிருக்கும் மன அழுத்தத்தைக் குறைக்க உதவுகிறது. தொழில்நுட்பம் ஆசிரியர்களுக்கு மாணவர்களைக் கண்காணிக்கவும், அவர்களின் கற்றலில் சிரமமின்றி ஈடுபடவும் வாய்ப்பளிக்கிறது. இறுதியில், தொழில்நுட்பத்தைப் பயன்படுத்துவது பணிகளை மிகவும் எளிதாக்குவதோடு, கல்வியாளர்கள் தங்கள் வகுப்பறைகளை திறமையாக நிர்வகிக்கவும் உதவுகிறது (கோலாங், 2012). கூடுதலாக, தொழில்நுட்பம் ஆசிரியர்களுக்கு மாணவர்களின் சாதனைகளைக் கொண்டாடவும், அவர்களின் நேர்மறையான நடத்தைக்கு வெகுமதி அளிக்கவும், பெற்றோருடன் எளிதாகத் தொடர்பு கொள்ளவும் ஒரு சிறந்த தளத்தை உருவாக்குகிறது. ஒரு ஆசிரியர் வகுப்பில் எந்த வகையான மேலாண்மைக் கருவியை இணைத்தாலும், அப்போது வேலை செய்யவில்லை எனில், பல கருவிகள் மற்றும் திட்டங்களைத் தயாராக வைத்திருப்பது புத்திசாலித்தனமான செயலாகும்.

தொழில்நுட்பம் ஆசிரியர்களுக்கு உலகின் பல பகுதிகளை அணுக உதவுகிறது. எனவே பாடம் வழங்கும் முறையையும் இந்த கருவிகளை எவ்வாறு அணுகுவது என்பதையும் மாற்றுவது அவசியம். வெவ்வேறு பயன்பாடுகளைப் பயன்படுத்துவதற்கான பாடத் திட்டங்களை உருவாக்குவதின் நோக்கம் என்ன என்பதைப் பொறுத்ததாகும். தொழில்நுட்பம் ஒரு இடையூறாகவோ அல்லது கருவிகள் எவ்வாறு பயன்படுத்தப்படுகின்றன என்பதன் அடிப்படையில் பாடத்தை நடத்துவதற்கான ஒரு வழிமுறையாகவோ தோன்றுகிறது.

கடினமான மாற்றங்களைக் கொண்டிருப்பது, மாணவர்கள் கற்றுக்கொள்வதற்கான நடுநிலையான நடைமுறைகளை நிறுவும் ஒரு உத்தியாகும். கணிசமான ஆசிரியர்களின் வழிகாட்டுதல் இல்லாமல் மாணவர்கள் மீண்டும் மீண்டும் கற்றல் நிகழும் நிகழ்வுகளுக்கு விரைவாகத் தகவமைத்துக் கொள்கிறார்கள். எடுத்துக்காட்டாக, Class123 டைமர் வலைத்தளக் கருவியில் காணப்படும், ஒரு டைமரை சுவரில் அல்லது திரையில் திரையிடலாம். இது ஒவ்வொரு பணியின் நேர அளவுகள் மற்றும் அடுத்த மாற்றத்திற்கு எவ்வளவு நேரம் மீதமுள்ளது என்பதை மாணவர்களுக்கு எச்சரிக்க முடிகிறது. இந்த உத்தியானது, செயல்பாடுகளுக்கு இடையிலான மாற்றங்களுடன் தொடர்புடைய சாத்தியமான குழப்பம் மற்றும் தாமத நேரத்தைக் குறைப்பதன் மூலம் கற்பித்தல் நேரத்தை அதிகரிக்க உதவுகிறது. இது மாணவர்களை விழிப்புடனும், பாடத்தில் ஈடுபாட்டுடனும் வைத்திருக்கிறது.

வகுப்பறையில் தொழில்நுட்பத்தின் பயன்பாடு

1.மாணவர்களின் ஈடுபாட்டை அதிகரித்தல்

காணொளி பாடங்கள் மற்றும் இடைவினையாற்றும் செயலிகள் மூலம் மாணவர்கள் சிறப்பாக கற்க முடிகிறது.

2. தகவல் அணுகல் வசதி

ஆன்லைன் கல்வி வளங்கள் மாணவர்களுக்கு விரிவான அறிவைப் பெற உதவுகின்றது.

3. தனிப்பட்ட கற்றல் அனுபவம்

செயற்கை நுண்ணறிவு மற்றும் கற்றல் மேலாண்மை அமைப்பு (Learning Management System) போன்ற தொழில்நுட்பங்கள் தனிநபர் தேவைகளுக்கேற்ப கற்றல் அனுபவத்தை மாற்றுகின்றது.

4. கல்வி தரத்தை மேம்படுத்துதல்

புத்தாக்கக் கருவிகள் மற்றும் மெய்நிகர் செயல்பாடுகள் மூலமாக பாடங்களை உயிர்ப்பிக்க முடிகிறது.

5. காகித வேலைகளை குறைத்து நேரம் குறைக்கப்படுகிறது
6. விரைவான கருத்துகள் மற்றும் முன்னேற்றத்தினை கண்காணிக்க உதவுகிறது
7. கற்றல் செயலில் பங்கேற்பதை ஊக்குவிக்கிறது
8. கற்றல் செயல்முறையை மேம்படுகிறது
9. மாணவர்களின் கற்றல் திறன் வளர்க்கப்படுகிறது.
10. வகுப்பறையில் தொழில்நுட்ப மேலாண்மையை வெற்றிகரமாகச் செய்ய, தொழில்நுட்பம் அல்லாத திட்டமிடல் அவசியமாகிறது.

தொழில்நுட்ப மேலாண்மையின் போது ஏதிரீகொள்ளும் சவால்கள்

1. தொழில்நுட்பத்தினை சரியான முறையில் பயன்படுத்துதல்

ஆசிரியர்கள் மற்றும் மாணவர்கள் தொழில்நுட்பத்தினை பயனுள்ளதாக பயன்படுத்துவதை உறுதிப்படுத்த வேண்டும்.

2. தகவல் பாதுகாப்பு மற்றும் தனியுரிமை

மாணவர்களின் தரவுகள் பாதுகாக்கப்படுவது அவசியமாகிறது.

3. தொழில்நுட்ப சார்ந்த கவனச் சிதறல்

சமூக ஊடகங்கள் மற்றும் விளையாட்டு செயலிகள் கவனத்தை திசை திருப்புகின்றது.

4. முடிவற்ற வசதிகள் மற்றும் சமத்துவ பிரச்சினை

அனைத்து மாணவர்களும் இணைய வசதி பெற இயலாத நிலை இருக்கிறது.

உள்கட்டமைப்பு மற்றும் அணுகல் பிரச்சினைகள்

- மின்னிலக்கப் பிளவு
- அனைவருக்கும் சமமான தொழில்நுட்ப அணுகல் இல்லாத போது சில மாணவர்கள் பின்தங்கும் நிலை இருக்கிறது.
- இணைய வசதி, தொழில்நுட்பச் சாதனங்களின் பயன்பாடு போன்றவை சமமாக இல்லையெனில் மாணவர்களுக்கு சமவாய்ப்பு கிடைப்பதில்லை.
- மின்னிலக்க எழுத்தறிவு மற்றும் ஆசிரியர் பயிற்சி ஆசிரியர்களுக்கு தொழில்நுட்ப வளங்களை எப்படி பயன்படுத்துவது என்பதில் தெளிவான பயிற்சியளித்தல்
- ஆசிரியர்களுக்கு நீடித்த தொழில்நுட்ப பயிற்சி வழங்குதல் அதிகளவு தகவல் மற்றும் கவனச் சிதறல்
- இணையம் பல்வேறு தரவுகளை வழங்கினாலும், அவற்றில் உள்ள அதிகளவு தகவல்கள் மாணவர்களைக் குழப்புகிறது.
- சமூக ஊடகங்கள், வீடியோ விளையாட்டுகள் மற்றும் அவசியமற்ற இணைய தளங்கள் மாணவர்களை கற்றலில் இருந்து கவனம் சிதறச் செய்கிறது.
- ஆசிரியர்கள் மாணவர்களுக்கு நேர மேலாண்மை மற்றும் சரியான தகவல்களைத் தேடுதல் பற்றிய வழிகாட்டுதல் வழங்க வேண்டும். பாதுகாப்பு மற்றும் தனியுரிமை பிரச்சனைகள்
- மாணவர் தரவுகள் பாதுகாக்க நம்பகமான பாதுகாப்பு நடவடிக்கைகளை மேற்கொள்ளுதல்
- தகவல் சேகரிப்பு, சேமிப்பு, மற்றும் பயன்படுத்தல் போன்ற முறைகள் நெறிமுறைகளுடன் இருத்தல் வேண்டும்.
- பள்ளிகள் தரவுகளை எவ்வாறு பாதுகாக்க வேண்டும் என்பதிலுள்ள உரிய நடவடிக்கைகளை மேற்கொள்ளுதல் வேண்டும்.

வகுப்பறை மேலாண்மை மாணவர்களின் கற்றலில் நேர்மறையான தாக்கத்தை ஏற்படுத்துகிறது. இருப்பினும், கற்றல் செயல்முறையின் மூலம் மாணவர்களை வழிநடத்தும் திறன், தொடக்க ஆசிரியர்கள் தங்கள் கற்பித்தல் பயணங்களைத் தொடங்கும்போது எதிர்கொள்ளும் சவால்களில் ஒன்றாகும் (ரோஸ் ரு கேலப், 2006). வகுப்பறை மேலாண்மை பல பகுதிகளைக் கொண்ட ஒரு சிக்கலான அமைப்பை உள்ளடக்கியது. இதில் வகுப்பறை சூழல், ஆசிரியர்-மாணவர் உறவுகள், நடத்தை எதிர்பார்ப்புகள் மற்றும் விளைவுகள், அத்துடன் தினசரி வழக்கங்களை உள்ளடக்கியுள்ளது.

வகுப்பறை மேலாண்மை என்பது ஒரு சிக்கலான அமைப்பாக இருப்பதோடு மட்டுமல்லாமல், கல்விப் பணிகளில் மாணவர்களை ஈடுபடுத்த ஆசிரியர்கள் பயன்படுத்தும் உத்திகளையும் உள்ளடக்கியது. பயனுள்ள அணுகுமுறைகளை நிரூபிப்பது, தனி மாணவர்கள் மற்றும் மாணவர்களின்

குழுக்கள் இருவருக்கும் கற்றலைத் தடுக்கும் நடத்தைகளைக் குறைக்க ஆசிரியர்களை அனுமதிக்கிறது. அதே நேரத்தில் கற்றலை வளப்படுத்தும் நடத்தைகளை அதிகரிக்கிறது. திறமையான ஆசிரியர்கள் வலுவான வகுப்பறை மேலாண்மை திறன்களை வெளிப்படுத்துகிறார்கள். குறைவான செயல்திறன் கொண்ட ஆசிரியர்கள் வகுப்பறைகளை ஒழுங்கற்றவர்களாகக் கொண்டுள்ளனர். கவனத்தை சிதறடிக்கும், வேலை செய்யாத அல்லது பாடத்தில் கவனம் செலுத்தாத மாணவர்களால் நிரம்பியுள்ளனர்.

எதிர்பார்ப்புகள் மற்றும் தீர்வுகள்

1. பயிற்சி மற்றும் மேம்பாடு

ஆசிரியர்களுக்கு தொழில்நுட்ப பயிற்சி வழங்குவது அவசியமாகிறது. இதன் மூலம் ஆசிரியர்களின் தொழில்நுட்பத் திறன் மேம்பாடு அடைய முடிகிறது.

2. கட்டுப்பாடுள்ள தொழில்நுட்ப பயன்பாடு

ஆசிரியர்கள் கல்விக்கான சிறப்பு செயலிகள் மற்றும் பயன்படுத்துதல் போன்ற முறைகளைப் பற்றிய அறியாமையை போக்க தக்க பயிற்சிகளை மேற்கொள்ளுதல்.

3. தொழில்நுட்ப அடிப்படையிலான மதிப்பீடுகள்

ஆசிரியர்கள் மாணவர்களின் முன்னேற்றத்தை கண்காணிக்க தொழில்நுட்பம் உதவுகிறது

4. நிறைவான கல்வி வசதிகள்

எதையும் எப்போது வேண்டுமானாலும் கற்கும் வசதிகளை அதிகரித்தல். கல்வி தொழில்நுட்பம், மாணவர் கற்றலை வளர்க்கும் பயனுள்ள வகுப்பறை மேலாண்மை அமைப்புகள் மற்றும் திறன்களை வளர்ப்பதற்கு உதவ முடிகிறது என்பதை அறிய முடிகிறது.

முடிவுரை

வகுப்பறையில் தொழில்நுட்ப மேலாண்மை சரியாக அமைந்தால், அது கல்வி தரத்தை மேம்படுத்தி, புதிய பயிற்சிகளை உருவாக்க உதவும். அதே நேரத்தில், சவால்களை முகாமைப்படுத்தும் முறைகள் இருந்தால் மட்டுமே, தொழில்நுட்பம் வெற்றிகரமாக செயல்படும். சரியான திட்டமிடல் மற்றும் திறமையான மேலாண்மை மூலம், தொழில்நுட்பம் வகுப்பறையில் ஒரு புதிய புரட்சியை உருவாக்கும். ஆசிரியர்களின் ஈடுபாடு மற்றும் நேர்மறையான நடத்தை கட்டமைப்பு கற்றல் முறைகளைப் பயன்படுத்துவதன் மூலம் ஆசிரியர்கள் தங்கள் கற்பித்தல் நேரத்தை அதிகம் பயன்படுத்துவதில் திறம்பட உதவுகின்ற ஆன்லைன் தொழில்நுட்ப வகுப்பறை மேலாண்மை கருவிகள் மற்றும் உத்திகளின் பயன்பாடுகள் பற்றி விளக்கப்பட்டுள்ளன. வகுப்பறை

மேலாண்மைக்குப் பயன்படுத்தக்கூடிய ஆன்லைன் கருவிகளின் பட்டியல் இடம்பெற்றுள்ளது. மாணவர்களின் நடத்தை, வகுப்பறை அறிவுறுத்தல்கள் மற்றும் மாணவர் செயல்திறனை மேம்படுத்த வகுப்பறை மேலாண்மை எண்மின் கருவிகளைப் பயன்படுத்தும் விதம் பற்றி சிறப்பாக எடுத்துரைக்கின்றன. தொழில்நுட்பம் கல்வியில் பெரும்மாற்றத்தை ஏற்படுத்தி மாணவர்களின் ஈடுபாடு தனிப்பயன் கற்றல் மற்றும் உலகளாவிய தொடர்புகளை மேம்படுத்துகிறது. இருப்பினும் உள்கட்டமைப்பு அணுகல் மின்னிலக்கக் கல்வி கவனச்சிதறல் மற்றும் தனி உரிமைப் பிரச்சனைகள் போன்ற சவால்களை சரியாக கையாளாதல் வேண்டும். இந்த சவால்களை சமாளிக்க முறைசார்ந்த முயற்சிகள் மேற்கொண்டால் தொழில்நுட்பத்தின் முழு திட்டத்தையும் பயன்படுத்தி மாணவர்களை எதிர்காலத்தில் தயார்படுத்தலாம். பல்வேறு திறன்களை வளர்த்துக் கொள்ள மற்றும் புதிய வாய்ப்புகளை உருவாக்க தொழில்நுட்பம் தொடர்ந்து வளர்ச்சியடைவதைப் பற்றி இவ்வியல் எடுத்துரைக்கிறது.

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CHAPTER - II



Understanding Learners and Teachers in the Digital Age

PSYCHOLOGICAL UNDERSTANDING OF THE NEEDS AND CHALLENGES OF GEN Z AND ALPHA LEARNERS

*R. Sridevi

INTRODUCTION

The modern educational landscape is characterized by a diverse and complex student population. Two distinct groups, Gen Z learners and Alpha Learners, have emerged as significant forces in shaping the future of education. Born between 1997 and 2012, Gen Z learners bring a unique set of values, preferences, and learning styles that differ from their predecessors. Alpha Learners, on the other hand, are a group of high-achieving, motivated, and independent learners who require tailored educational experiences to reach their full potential.

It is essential for educators, policymakers, and stakeholders, to develop a deeper psychological understanding of Gen Z learners and Alpha Learners. This understanding can inform teaching practices, learning design, and educational policies, ultimately enhancing the learning experience and outcomes for these distinct groups.

This chapter aims to provide an in-depth exploration of the psychological needs, challenges, and characteristics of Gen Z learners and Alpha Learners. By examining the latest research, trends, and insights, we can gain a better understanding of how to create learning environments that cater to the unique requirements of these learners, empowering them to succeed, grow, and thrive in an increasingly complex and rapidly changing world.

DEFINITION AND MEANING OF GEN Z LEARNERS

Definition: A Gen Z learner refers to an individual born between 1997 and 2012, which has grown up in a world dominated by digital technologies, social media, and the internet. Gen Z learners are characterized by their unique learning styles, preferences, and expectations, shaped by their experiences with technology and the world around them.

Meaning: The term “Gen Z” is an abbreviation for “Generation Z,” which refers to the demographic cohort following Millennials (Gen Y). Gen Z learners are often described as:

- *Digitally native:* Having grown up with the internet and digital

technologies, Gen Z learners are highly comfortable with technology and expect it to be integrated into their learning experiences.

- *Diverse and global:* Gen Z learners are more diverse than previous generations, with many having grown up in multicultural communities and being exposed to global perspectives.
- *Entrepreneurial and pragmatic:* Gen Z learners are often characterized as being entrepreneurial, practical, and focused on finding solutions to real-world problems.
- *Visually oriented:* Gen Z learners tend to prefer visual content, such as videos, images, and infographics, over text-based information.

CHARACTERISTICS OF GEN Z LEARNERS

- *Autonomous and self-directed:* Gen Z learners value independence and autonomy in their learning.
- *Tech-savvy and connected:* Gen Z learners are highly connected and expect to use technology to facilitate their learning.
- *Experiential and hands-on:* Gen Z learners tend to prefer hands-on, experiential learning experiences.
- *Socially conscious and activist-oriented:* Gen Z learners are often passionate about social justice and activism.

NEEDS OF GEN Z LEARNERS

Academic Needs

- *Personalized learning:* Gen Z learners require tailored learning experiences that cater to their individual needs, interests, and learning styles.
- *Real-world applications:* Gen Z learners want to see the practical relevance of academic concepts, with real-world examples and case studies.
- *Hands-on learning:* Gen Z learners benefit from experiential learning experiences, such as project-based learning, internships, and service-learning.
- *Flexible pacing:* Gen Z learners need flexibility in pacing, with options for accelerated or decelerated learning.

Social-Emotional Needs

- *Mental health support:* Gen Z learners require access to mental health resources, counseling, and support services.

- *Social-emotional learning:* Gen Z learners benefit from explicit instruction in social-emotional skills, such as emotional intelligence, self-awareness, and self-regulation.
- *Diversity, equity, and inclusion:* Gen Z learners expect inclusive learning environments that promote diversity, equity, and social justice.
- *Positive relationships:* Gen Z learners thrive in positive relationships with educators, peers, and mentors.

Technological Needs

- *Digital literacy:* Gen Z learners require instruction in digital literacy, including online safety, digital citizenship, and media literacy.
- *Access to technology:* Gen Z learners expect access to reliable, high-speed internet and devices that support their learning.
- *Blended learning:* Gen Z learners benefit from blended learning experiences that combine online and offline learning.
- *Virtual collaboration tools:* Gen Z learners require virtual collaboration tools that facilitate teamwork, communication, and feedback.

Career and Life Needs

- *Career guidance:* Gen Z learners require guidance on career exploration, planning, and preparation.
- *Life skills instruction:* Gen Z learners benefit from explicit instruction in life skills, such as time management, financial literacy, and conflict resolution.
- *Entrepreneurship and innovation:* Gen Z learners are interested in entrepreneurship and innovation, requiring opportunities for creative expression and idea development.
- *Global citizenship:* Gen Z learners need instruction in global citizenship, including cultural competence, sustainability, and social responsibility.

By understanding the characteristics and needs of Gen Z learners, educators and policymakers can create learning environments that are relevant, engaging, and effective for this unique generation.

PSYCHOLOGICAL ASPECTS OF GEN Z LEARNERS

- ***Growth Mindset:*** Gen Z learners tend to have a growth mindset, believing that their abilities and intelligence can be developed through effort and learning.

- ***Resilience and Adaptability:*** Gen Z learners have grown up in a rapidly changing world and are adaptable to new situations, technologies, and challenges.
- ***Increased Anxiety and Stress:*** Gen Z learners are experiencing higher levels of anxiety and stress due to academic pressure, social media, and global uncertainty.
- ***Decreased Attention Span:*** Gen Z learners have a decreased attention span due to the constant availability of digital information and the need to multitask.
- ***Visual Learning Preference:*** Gen Z learners tend to prefer visual learning, using images, videos, and graphics to process information.
- ***Social Justice Orientation:*** Gen Z learners are socially conscious and oriented towards social justice, with a strong desire to make a positive impact on the world.
- ***Diversity and Inclusion:*** Gen Z learners value diversity and inclusion, expecting learning environments to be welcoming and inclusive of all backgrounds and identities.
- ***Self-Directed Learning:*** Gen Z learners are self-directed and autonomous, preferring to take ownership of their learning and make choices about their educational pathways.
- ***Emphasis on Mental Health:*** Gen Z learners prioritize mental health and well-being, recognizing the importance of self-care and stress management.
- ***Digital Natives:*** Gen Z learners are digital natives, having grown up with the internet and digital technologies, which shapes their learning preferences and behaviors.
- ***Feedback-Seeking:*** Gen Z learners value feedback and seek it out to improve their performance and achieve their goals.
- ***Pragmatism and Practicality:*** Gen Z learners are pragmatic and practical, focusing on real-world applications and problem-solving.
- ***Creativity and Entrepreneurship:*** Gen Z learners value creativity and entrepreneurship, seeking opportunities to innovate and turn their ideas into reality.
- ***Global Perspective:*** Gen Z learners have a global perspective, recognizing the interconnectedness of the world and the importance of cultural competence.
- ***Emphasis on Experience:*** Gen Z learners prioritize experiences over

material possessions, seeking opportunities for hands-on learning, travel, and personal growth.

TEACHING METHODOLOGY FOR GEN Z LEARNERS

- ***Flipped Classroom:*** Reverse the traditional lecture-homework format by delivering instruction at home through pre-recorded videos or readings, and using class time for interactive activities and discussions.
- ***Project-Based Learning:*** Encourage active learning by assigning real-world projects that require critical thinking, problem-solving, and collaboration.
- ***Personalized Learning:*** Tailor instruction to individual students' needs, interests, and learning styles using technology, adaptive assessments, and learning analytics.
- ***Gamification:*** Incorporate game design elements, such as rewards, badges, and leaderboards, to increase engagement and motivation.
- ***Microlearning:*** Break down complex topics into bite-sized chunks, using short videos, podcasts, or interactive modules to facilitate flexible learning.
- ***Social Learning:*** Leverage social media, online forums, and collaborative tools to facilitate peer-to-peer learning, discussion, and feedback.
- ***Experiential Learning:*** Provide hands-on experiences, simulations, and real-world applications to help students connect theoretical concepts to practical scenarios.
- ***Virtual and Augmented Reality:*** Utilize immersive technologies to create interactive, experiential learning environments that enhance engagement and retention.
- ***Maker spaces:*** Establish collaborative workspaces that encourage creativity, innovation, and experimentation with various materials and technologies.
- ***Competency-Based Progression:*** Focus on students' demonstration of specific skills and competencies, rather than age or grade level, to facilitate personalized progression.
- ***Real-World Applications:*** Connect academic concepts to real-world scenarios, industries, and professions to enhance relevance, interest, and career readiness.
- ***Student-Centered Approach:*** Empower students to take ownership of their learning, making choices about topics, pace, and format, and providing feedback and self-assessment opportunities.

- ***Interdisciplinary Learning:*** Integrate multiple subjects and disciplines to provide a more holistic understanding of complex topics and real-world problems.
- ***Technology Integration:*** Seamlessly incorporate technology into instruction to enhance engagement, accessibility, and effectiveness.
- ***Feedback and Assessment:*** Provide regular, constructive feedback and use competency-based assessments to measure student learning and progress.

CHALLENGES FACED BY GEN Z LEARNERS

- ***Mental health concerns:*** Gen Z learners face increased rates of anxiety, depression, and other mental health issues.
- ***Digital distractions and addiction:*** Gen Z learners struggle with digital distractions, social media addiction, and decreased attention span.
- ***Social isolation and loneliness:*** Gen Z learners may experience social isolation and loneliness due to decreased face-to-face interactions and increased online communication.
- ***Pressure to succeed and academic stress:*** Gen Z learners face intense pressure to succeed academically, leading to stress, burnout, and decreased motivation.

SUGGESTIONS FOR GEN Z LEARNERS

- ***Navigating complex social relationships:*** Gen Z learners must navigate complex social relationships, including online relationships, social media dynamics, and peer pressure.
- ***Managing information overload:*** Gen Z learners must learn to manage the vast amount of information available online, distinguishing between credible and unreliable sources.
- ***Developing emotional intelligence and self-awareness:*** Gen Z learners need guidance on developing emotional intelligence, self-awareness, and self-regulation skills.

DEFINITION AND MEANING OF ALPHA LEARNERS

Definition: An Alpha Learner is an individual who possesses a unique combination of skills, traits, and mindset that enables them to excel in various learning environments and situations. Alpha Learners are characterized by their exceptional ability to adapt, innovate, and lead in the pursuit of knowledge and personal growth.

Meaning: The term “*Alpha*” refers to the first letter of the Greek alphabet, symbolizing leadership, innovation, and excellence. Alpha Learners are:

- ***Self-directed and autonomous:*** Alpha Learners take ownership of their learning, setting goals and pursuing knowledge with independence and initiative.
- ***Curious and inquisitive:*** Alpha Learners are driven by a desire to learn, explore, and discover new concepts, ideas, and perspectives.
- ***Adaptable and resilient:*** Alpha Learners can navigate complex, uncertain, and dynamic learning environments with ease, adapting to new situations and bouncing back from setbacks.
- ***Creative and innovative:*** Alpha Learners think outside the box, generating novel solutions, products, and services that demonstrate their unique perspective and creativity.
- ***Collaborative and communicative:*** Alpha Learners work effectively with others, sharing knowledge, ideas, and expertise to achieve common goals and foster a sense of community.

CHARACTERISTICS OF ALPHA LEARNERS

- ***Growth mindset:*** Alpha Learners believe that their abilities and intelligence can be developed through dedication, hard work, and persistence.
- ***Meta-cognitive awareness:*** Alpha Learners are aware of their own thought processes, learning strategies, and emotional states, enabling them to regulate and optimize their learning.
- ***Emotional intelligence:*** Alpha Learners possess high emotional intelligence, which facilitates effective relationships, communication, and conflict resolution.
- ***Digital literacy:*** Alpha Learners are proficient in using digital tools, technologies, and platforms to support their learning, creativity, and productivity.

NEEDS OF ALPHA LEARNERS

Academic Needs

- ***Challenging and stimulating content:*** Alpha Learners require advanced, complex, and thought-provoking material that pushes them to think critically and creatively.
- ***Autonomy and independence:*** Alpha Learners value self-directed learning, flexibility, and freedom to pursue their interests and passions.

- **Personalized learning experiences:** Alpha Learners benefit from tailored learning pathways, adaptive assessments, and customized feedback that cater to their unique strengths, weaknesses, and learning styles.
- **Interdisciplinary connections and real-world applications:** Alpha Learners seek to understand the interconnectedness of subjects and their practical relevance to real-world problems and scenarios.

Social-Emotional Needs

- **Mentorship and coaching:** Alpha Learners thrive with guidance from experienced mentors and coaches who can provide valuable feedback, support, and encouragement.
- **Collaboration and networking opportunities:** Alpha Learners benefit from interacting with peers, experts, and professionals in their field, fostering meaningful relationships, and building a network of like-minded individuals.
- **Emotional intelligence and well-being support:** Alpha Learners require access to resources and support that promote emotional intelligence, mental health, and well-being, enabling them to manage stress, build resilience, and maintain a healthy work-life balance.
- **Recognition and rewards for achievements:** Alpha Learners appreciate acknowledgment and rewards for their accomplishments, motivating them to continue striving for excellence.

Technological Needs

- **Access to advanced technologies and tools:** Alpha Learners require cutting-edge technologies, software, and platforms that facilitate innovative learning, creativity, and problem-solving.
- **Data-driven learning and analytics:** Alpha Learners benefit from data-driven insights, analytics, and visualizations that help them track progress, identify areas for improvement, and optimize their learning strategies.
- **Virtual and augmented reality experiences:** Alpha Learners are interested in immersive learning experiences that leverage virtual and augmented reality technologies to simulate real-world scenarios, enhance engagement, and deepen understanding.
- **Cyber security and online safety education:** Alpha Learners require guidance on cyber security best practices, online safety protocols, and digital citizenship to ensure responsible technology use.

Career and Future-Ready Needs

- **Career guidance and counseling:** Alpha Learners benefit from expert guidance on career paths, professional development, and industry trends, enabling them to make informed decisions about their future.
- **Entrepreneurship and innovation support:** Alpha Learners require resources, mentorship, and funding opportunities to support their entrepreneurial ventures, innovative projects, and social impact initiatives.
- **Networking and partnership opportunities:** Alpha Learners value connections with industry leaders, researchers, and innovators, facilitating collaborations, partnerships, and knowledge-sharing.
- **Lifelong learning and professional development:** Alpha Learners recognize the importance of continuous learning, up skilling, and reskilling to stay relevant in a rapidly changing world.

CHALLENGES FACED BY ALPHA LEARNERS

i. Academic Challenges

- ***High expectations and pressure to perform:*** Alpha Learners often face intense pressure to excel academically, which can lead to stress and burnout.
- ***Limited feedback and guidance:*** Alpha Learners may not receive adequate feedback and guidance, as educators may assume they can handle challenging material independently.
- ***Lack of challenging coursework:*** Alpha Learners may find that coursework is not sufficiently challenging, leading to boredom and disengagement.
- ***Balancing academic rigor with extracurricular activities:*** Alpha Learners often struggle to balance their academic workload with extracurricular activities and personal interests.

ii. Social-Emotional Challenges

- ***Social isolation and loneliness:*** Alpha Learners may experience social isolation and loneliness due to their intense focus on academics and lack of time for socializing.
- ***Perfectionism and self-criticism:*** Alpha Learners often struggle with perfectionism and self-criticism, which can lead to anxiety and decreased self-esteem.
- ***Difficulty with self-advocacy:*** Alpha Learners may struggle to advocate for themselves and express their needs, leading to frustration and burnout.

- ***Managing stress and anxiety:*** Alpha Learners often experience high levels of stress and anxiety, which can impact their mental health and well-being.

iii. Technological Challenges

- ***Information overload and digital distractions:*** Alpha Learners may struggle to manage the vast amount of information available online and avoid digital distractions.
- ***Managing expectations and pressure to succeed:*** Alpha Learners often face high expectations from themselves, parents, and educators, which can lead to pressure and stress.
- ***Cyber security threats and online safety:*** Alpha Learners need to be aware of cyber security threats and take steps to protect themselves online.
- ***Keeping up with rapidly evolving technology:*** Alpha Learners must adapt to new technologies and tools, which can be time-consuming and challenging.
- ***Using technology to enhance learning:*** Alpha Learners need to learn how to effectively use technology to enhance their learning, rather than simply using it for entertainment.

iv. Career and Future-Ready Challenges:

- ***Uncertainty about future career paths:*** Alpha Learners may face uncertainty about their future career prospects, which can lead to anxiety and indecision.
- ***Developing skills for an evolving job market:*** Alpha Learners must acquire skills that will be relevant in a rapidly changing job market, such as AI, data science, and cyber security.
- ***Balancing personal and professional goals:*** Alpha Learners must navigate the challenges of balancing their personal and professional goals, while maintaining their physical and mental well-being.

PSYCHOLOGICAL ASPECTS OF ALPHA LEARNERS

- ***Growth Mindset:*** Alpha Learners have a strong growth mindset, believing that their abilities and intelligence can be developed through effort and learning.
- ***High Motivation and Drive:*** Alpha Learners are highly motivated and driven to achieve their goals, often setting high standards for themselves.

- ***Resilience and Perseverance:*** Alpha Learners are resilient and persevering, bouncing back from setbacks and failures to continue striving for excellence.
- ***Confidence and Self-Efficacy:*** Alpha Learners tend to have high confidence and self-efficacy, believing in their ability to succeed and overcome challenges.
- ***Autonomy and Self-Directedness:*** Alpha Learners value autonomy and self-directedness, preferring to take ownership of their learning and make choices about their educational pathways.
- ***Intrinsic Motivation:*** Alpha Learners are often intrinsically motivated, driven by a genuine interest in learning and a desire to improve themselves.
- ***High Expectations:*** Alpha Learners often have high expectations for themselves and others, striving for excellence and pushing themselves to achieve more.
- ***Competitive Spirit:*** Alpha Learners may have a competitive spirit, driving them to outperform others and achieve recognition for their accomplishments.
- ***Strategic Thinking:*** Alpha Learners tend to be strategic thinkers, planning and reflecting on their learning to optimize their performance.
- ***Emotional Intelligence:*** Alpha Learners often have high emotional intelligence, recognizing and managing their emotions to maintain a healthy work-life balance.
- ***Self-Awareness:*** Alpha Learners tend to have high self-awareness, recognizing their strengths, weaknesses, and learning styles to optimize their learning.
- ***Adaptability and Flexibility:*** Alpha Learners are often adaptable and flexible, adjusting to new situations, technologies, and challenges with ease.
- ***Creative Problem-Solving:*** Alpha Learners tend to be creative problem-solvers, thinking outside the box to develop innovative solutions.
- ***Risk-Taking:*** Alpha Learners may be more willing to take calculated risks, stepping outside their comfort zones to challenge themselves and achieve growth.
- ***Passion for Learning:*** Alpha Learners often have a genuine passion for learning, driving them to continuously seek out new knowledge, skills, and experiences.

TEACHING METHODOLOGY FOR ALPHA LEARNERS

- ***Personalized Learning Paths:*** Create tailored learning pathways that cater to individual Alpha Learners' needs, interests, and learning styles.
- ***Accelerated Learning:*** Provide opportunities for Alpha Learners to accelerate their learning, such as advanced courses, early college credit, or self-paced learning.
- ***Mentorship and Coaching:*** Pair Alpha Learners with experienced mentors or coaches who can provide guidance, support, and feedback.
- ***Project-Based Learning:*** Engage Alpha Learners in complex, open-ended projects that require critical thinking, problem-solving, and creativity.
- ***Debates and Discussions:*** Encourage Alpha Learners to engage in respectful debates and discussions, developing their critical thinking, argumentation, and communication skills.
- ***Real-World Applications:*** Connect academic concepts to real-world scenarios, industries, and professions, providing Alpha Learners with a deeper understanding of practical applications.
- ***Interdisciplinary Learning:*** Integrate multiple subjects and disciplines to provide Alpha Learners with a more holistic understanding of complex topics and real-world problems.
- ***Self-Directed Learning:*** Encourage Alpha Learners to take ownership of their learning, setting goals, prioritizing tasks, and managing their time effectively.
- ***Feedback and Reflection:*** Provide regular, constructive feedback and encourage Alpha Learners to reflect on their learning, setting goals for improvement.
- ***Competitions and Challenges:*** Engage Alpha Learners in academic competitions, hackathons, or innovation challenges that foster creativity, critical thinking, and problem-solving.
- ***Advanced Technologies:*** Leverage advanced technologies, such as AI, AR, or VR, to create immersive, interactive learning experiences that cater to Alpha Learners' needs.
- ***Global Perspectives:*** Provide Alpha Learners with opportunities to engage with global issues, cultures, and perspectives, developing their cultural competence and empathy.
- ***Entrepreneurship and Innovation:*** Encourage Alpha Learners to develop entrepreneurial skills, such as creativity, risk-taking, and innovation, through hands-on projects and experiences.

- **Leadership Development:** Provide Alpha Learners with opportunities to develop leadership skills, such as communication, teamwork, and problem-solving, through leadership roles, mentorship, or coaching.
- **Flexible Assessments:** Offer flexible assessment options, such as competency-based assessments, portfolios, or self-assessments, to accommodate Alpha Learners' diverse learning styles and needs.

CHALLENGES FACED BY ALPHA LEARNERS

- **High expectations and pressure to perform:** Alpha Learners face intense pressure to excel academically, leading to stress, burnout, and decreased motivation.
- **Perfectionism and self-criticism:** Alpha Learners often struggle with perfectionism and self-criticism, which can lead to anxiety, depression, and decreased self-esteem.
- **Social isolation and loneliness:** Alpha Learners may experience social isolation and loneliness due to their intense focus on academics and limited time for socializing.
- **Difficulty with self-care and work-life balance:** Alpha Learners often prioritize academics over self-care and work-life balance, leading to burnout and decreased well-being.
- **Managing stress and anxiety:** Alpha Learners need strategies to manage stress and anxiety, which can impact their mental health and well-being.
- **Developing emotional intelligence and empathy:** Alpha Learners benefit from developing emotional intelligence, empathy, and social skills to complement their academic abilities.
- **Navigating complex relationships with peers and mentors:** Alpha Learners must navigate complex relationships with peers and mentors, requiring effective communication, conflict resolution, and boundary-setting skills.

COMMON CHALLENGES FACED BY GEN Z AND ALPHA LEARNERS

- **Mental health concerns:** Both Gen Z learners and Alpha Learners face mental health concerns, including anxiety, depression, and stress.
- **Digital distractions and addiction:** Both groups struggle with digital distractions, social media addiction, and decreased attention span.
- **Pressure to succeed and academic stress:** Both Gen Z learners and Alpha Learners face intense pressure to succeed academically, leading to stress, burnout, and decreased motivation.

- ***Social isolation and loneliness:*** Both groups may experience social isolation and loneliness due to decreased face-to-face interactions and increased online communication.

EDUCATIONAL IMPLICATIONS OF GEN Z AND ALPHA LEARNERS

Gen Z Learners

- ***Incorporate technology:*** Integrate technology seamlessly into instruction to engage Gen Z learners and enhance their learning experience.
- ***Personalized learning:*** Implement personalized learning approaches, such as adaptive assessments and learning pathways, to cater to Gen Z learners' diverse needs and interests.
- ***Experiential learning:*** Incorporate experiential learning experiences, such as project-based learning, internships, and service-learning, to provide Gen Z learners with hands-on learning opportunities.
- ***Social-emotional learning:*** Prioritize social-emotional learning, including emotional intelligence, self-awareness, and self-regulation, to support Gen Z learners' mental health and well-being.
- ***Diversity, equity, and inclusion:*** Foster inclusive learning environments that promote diversity, equity, and inclusion, and address issues of social justice and activism.

Alpha Learners

- ***Accelerated learning:*** Provide opportunities for Alpha Learners to accelerate their learning, such as advanced courses, early college credit, or self-paced learning.
- ***Mentorship and coaching:*** Pair Alpha Learners with experienced mentors or coaches who can provide guidance, support, and feedback tailored to their unique needs.
- ***Complex, open-ended projects:*** Engage Alpha Learners in complex, open-ended projects that require critical thinking, problem-solving, and creativity.
- ***Real-world applications:*** Connect academic concepts to real-world scenarios, industries, and professions, providing Alpha Learners with a deeper understanding of practical applications.
- ***Flexible assessments:*** Offer flexible assessment options, such as competency-based assessments, portfolios, or self-assessments, to accommodate Alpha Learners' diverse learning styles and needs.

COMMON IMPLICATIONS

- ***Student-centered approach:*** Adopt a student-centered approach, prioritizing learners' needs, interests, and agency in the learning process.
- ***Flexibility and adaptability:*** Emphasize flexibility and adaptability in instructional design, accommodating diverse learning styles, needs, and preferences.
- ***Technology integration:*** Leverage technology to enhance teaching and learning, providing opportunities for personalized learning, real-time feedback, and collaboration.
- ***Emphasis on skills:*** Focus on developing essential skills, such as critical thinking, problem-solving, creativity, and communication, to prepare learners for an uncertain future.
- ***Teacher professional development:*** Provide ongoing professional development opportunities for educators to stay updated on best practices, technologies, and research-based strategies for teaching Gen Z learners and Alpha Learners.

CONCLUSION

The emergence of Gen Z learners and Alpha Learners presents a unique opportunity for educators to reimagine teaching and learning. By understanding the psychological needs and challenges of these distinct groups, educators can create tailored learning experiences that cater to their diverse requirements.

Gen Z learners, with their emphasis on social justice, creativity, and autonomy, require learning environments that prioritize flexibility, adaptability, and real-world applications. Alpha Learners, with their exceptional abilities and drive, necessitate accelerated learning opportunities, mentorship, and complex, open-ended projects.

By acknowledging and addressing the psychological needs and challenges of Gen Z learners and Alpha Learners, educators can:

- Foster engagement, motivation, and academic success
- Develop essential skills, such as critical thinking, problem-solving, and creativity
- Promote social-emotional learning, mental health, and well-being
- Prepare learners for an uncertain, rapidly changing future

Ultimately, this psychological understanding of Gen Z learners and Alpha

Learners serves as a call to action for educators, policymakers, and stakeholders to revolutionize teaching and learning. By embracing this understanding, we can create learning environments that empower all learners to thrive, grow, and reach their full potential.

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***Dr. J. Antony Joseph**

INTRODUCTION

Inclusive education is an approach that values and supports diversity in the classroom, ensuring all students, regardless of their personal characteristics, backgrounds, or learning needs, have equal access to meaningful learning experiences. An effective teacher is essential in creating an inclusive environment where all students feel respected, valued, and empowered to achieve their full potential. Inclusive behaviour refers to the intentional actions and attitudes exhibited by teachers to promote an inclusive atmosphere, which is vital for fostering a positive and equitable educational experience. This chapter explores the characteristics of inclusive behaviour in effective teaching and provides an understanding of how teachers can cultivate an inclusive classroom culture.

INCLUSIVE EDUCATION

Definition

According to **Stephan and Blackhurst**, “Inclusive Education is a set of values, principles and practices that seeks more effective and meaningful education for all students, regardless of whether they have exceptionality labels or not.”

According to **Uppal and Dey**, “Inclusive Education aims to provide a favourable setting for achieving equal opportunity and full participation for all, thus bringing children with special needs well within the preview of mainstream education. It recognizes the diverse needs of the students and ensures equality education to all through appropriate curricula, teaching strategies, support services and partnership with a community and parents. In simple words, it means that all children with or without disabilities learn together.”

“Inclusion is a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities, and reducing exclusion within and from education. It involves changes and modifications in content, approaches, structures and strategies with a common vision which covers all children of the appropriate age range and a conviction that it is the responsibility of the regular system to educate all children”. - **UNESCO**

Meaning

Inclusive education means all children in the same classrooms, in the same schools. It means real learning opportunities for groups who have traditionally been excluded – not only children with disabilities, but speakers of Marginalised too.

NEED AND IMPORTANCE OF INCLUSIVE EDUCATION

There have been efforts internationally to include children with disabilities in the educational mainstream. In order to achieve truly inclusive education, we need to think about and incorporate children with special needs into regular schools. Especially, because these kids face some sort of barriers to learning and participation in the classroom. As general education classrooms include more and more diverse students, teachers realize the value of accepting each student as unique. In effective inclusive programs, teachers adapt activities to include all students, even though their individual goals may be different. We have learned that inclusive education is a better way to help all students succeed. Researches show that most students learn and perform better when exposed to the richness of the general education curriculum. The growing body of research has shown that children do better academically when in inclusive settings and Inclusion provides opportunities to develop relationships. Some of the benefits include: friendships, social skills, personal principles, comfort level with people who have special needs, and caring classroom environments

CHARACTERISTICSS OF EFFECTIVE TEACHERS IN INCLUSIVE EDUCATION

1. ***Accept Diversity:*** A teacher values students' unique identities, including their cultural backgrounds, learning styles, and individual experiences. They create an environment where students feel respected and valued for who they are.
2. ***Motivation and Support:*** A teacher provides positive reinforcement and constructive feedback, encouraging all students to actively participate and strive to improve. They are patient and approachable, offering support when needed.
3. ***Diverse Instructional strategies:*** An effective teacher uses a variety of teaching strategies and resources to cater to diverse learning needs. This may involve providing different levels of support, using visual aids, or breaking down tasks into smaller, more manageable steps to ensure every student can succeed.

4. **Promoting Equity:** An inclusive teacher strives to give every student an equal opportunity to learn, making adjustments for those with physical, emotional, or learning disabilities, as well as those from underrepresented or marginalized groups.
5. **Active Listening:** They listen attentively to students' concerns, providing a platform for everyone to express themselves and ensuring that all voices are heard.
6. **Encouraging Collaboration:** Effective teachers foster collaborative learning by encouraging students to work together, share ideas, and respect each other's contributions.
7. **Adaptability:** An inclusive teacher remains flexible and responsive to the needs of their students, adapting their approach as necessary to support a variety of learning requirements.
8. **Encouraging Self-Advocacy and Empowerment:** Inclusive teachers empower students to take ownership of their learning by encouraging self-advocacy. Teachers support students in understanding their own learning needs and in seeking help when necessary. This fosters a sense of agency and responsibility in students, helping them become more confident, self-aware, and resilient learners.

ROLE OF EFFECTIVE TEACHERS IN INCLUSIVE BEHAVIOUR

Effective teachers demonstrate inclusive behaviour by creating a classroom environment that welcomes and supports all students, regardless of their background, abilities or needs. Key role of inclusive behaviour includes:

i) Create a safe learning environment

Safety in this scenario implies a psychologically safe space within which students can express themselves and their opinions without fear of teasing, retribution, or backlash. It goes without saying that school should be a physically safe space free from harm or abuse too.

To do this, teachers must make it abundantly clear that everyone needs to respect the views of others, show empathy, and not bully students for misunderstanding, for struggling, or for simply being incorrect. Showing respect to one another is a key element of any interactive classroom. Teachers may need to set ground rules and remind students before they proceed with a lesson.

ii)Build Relationships

Teachers should establish a positive rapport with students by showing genuine interest in their lives; learn about their hobbies, interests, and concerns. Clearly communicating expectations and adhering to them will build trust. Do not overlook opportunities to include input on their classroom experience. Allowing their voices to be heard can be the foundation of a healthy relationship.

iii) Classroom Jobs

Classroom jobs are more than just tasks to keep the students busy; they're opportunities for students to develop life skills that will serve them well beyond the school gates. Moreover, classroom jobs can significantly enhance the learning environment. They encourage active participation and engagement, making the classroom a more vibrant and interactive space. Students feel more connected to their classroom through ownership, viewing it not just as a place where they have to go, but as a community where they contribute and feel valued. Some of the responsibilities are Snack Captain, Librarian, Technology Manager, Green Champion, Supply Manager, Cleanliness Monitor, News Reporter, Outdoor Learning Monitor

iv) Collaboration

Over the years, and with the movement towards inclusive education, it has become apparent that working in silos is problematic. To improve the quality of instruction, collaboration across grade levels and teacher licensures is becoming more readily acceptable and even encourage. Collaboration can take form in a myriad of ways. It is encouraged at every level and has been found to benefit all involved, hence the saying the whole is greater than the sum of its parts. Nonetheless, collaboration without aim or structure could create unnecessary tension and be counterproductive. Collaboration should therefore be thought out, intentional, and the aims should be articulated to all involved. Thus, we need to explore how to best engage teachers in effective collaboration with co-teachers and related service professionals across their teaching trajectory.

v) Family Involvement

In recent years there has been a significant shift in how schools and communities conceptualize family involvement, from an earlier focus on how families could support schools and community systems to a current orientation toward what schools and communities can do to support families. The goal is to develop partnerships with families that nurture and support all children

to learn and grow. Successful partnerships reflect an understanding of the great diversity among families and differences in cultural and socioeconomic conditions. An individualized approach to including families helps build strong connections that improve outcomes for youth. A teacher of inclusive school shows interest in adjoining family with school of inclusive nature.

A family's involvement in their child's education is recognized by many as the single most important factor in school success and achievement. Research has shown that not only does family involvement increase academic achievement, as reflected in higher test scores and graduation rates, but it also increases the likelihood that youth will pursue higher education.

vi) Professional Development

Professional development in inclusive education leads to improved outcomes for all students. When educators are well-prepared to handle diverse classrooms, all students benefit from a more equitable and effective learning environment. Professional development in inclusive education serves as the cornerstone for enhancing educational experiences for all students.

It empowers educators with the necessary knowledge, skills, and confidence to create classrooms that are truly inclusive and responsive to a diverse range of learning needs. By investing in ongoing professional development, educators can stay informed about the latest research, methodologies, and tools in the field, enabling them to effectively navigate the dynamic landscape of inclusive education. The effective teachers in the field of inclusive education put them in front for their professional development which will be useful for them in content focussed teaching, incorporate active learning and support collaboration.

vii) Setting Boundaries with Students

Clearly communicating expectations and limitations to all students, regardless of their abilities, to create a safe and productive learning environment where everyone feels respected and supported, while also ensuring appropriate behaviour and interactions within the classroom.

viii) Social Development

In general children are quick to learn from their surroundings, and when they see diversity is accepted positively, they learn that too. Some students may also require support to develop social skills and there are many strategies available to assist teachers to guide students in this area. For example, task analysis is a useful strategy for teaching students to do things like, eat their lunch in the playground, complete the morning arrival routine, or complete and turn in assignments.

Teachers can use task analysis to break procedural tasks into a sequence of logical smaller steps or actions for students to learn. Watching a demonstration of the task and documenting the steps also helps students recognise what is expected in specific situations.

Video modelling is another strategy that can be used to teach practical skills and increase positive behaviours. It is a teaching method where an individual watches a video of someone completing an activity and imitates the activity themselves. Like this approach effective inclusive teacher helps them develop respect and understanding for different cultures and abilities through observation and imitation. It also develops self-confidence to a great extent.

ix) Supporting Students with Disabilities

To support students with disabilities in an inclusive classroom, teachers can: review their Individualized Education Plans (IEPs), understand their unique needs, provide tailored accommodations like assistive technology, create a welcoming environment, use positive behaviour support strategies, communicate openly with parents, and assign seating strategically to facilitate interaction with peers; all while ensuring the classroom curriculum is accessible and diverse learning methods are employed. The teacher in inclusive education set up should know the above technique for being an effective teacher.

x) Varied Extracurricular Activities

At the core of inclusive classrooms are activities that transcend the boundaries of abilities, disabilities, backgrounds, and differences. These activities are not just about learning; they are about creating experiences that foster collaboration and nurture empathy. Activities like Art Beyond Barriers, Stories That Bind Us, Music - Music transcends language and ability, Inclusive Games, Colours of Diversity - Celebrate diversity through a multicultural fair are some activities the effective teachers need to engage the students in inclusive education.

These inclusive classroom activities are not undertaken just to pass the time – they are essential building blocks of character and compassion. Inclusive education is not a checkbox; it's a mindset. When students engage in these activities, they learn profound life lessons, such as: Empathy and Understanding, Collaboration and Teamwork, Confidence and Self-Esteem, Lifelong Values

STRATEGIES TO BE EMPLOYED BY EFFECTIVE TEACHERS TO FOSTER INCLUSIVE BEHAVIOUR

1. Universal Design for Learning (UDL)

Universal Design for Learning is a framework that guides teachers in designing flexible learning environments that meet the diverse needs of students. By providing multiple means of engagement, representation, and expression, teachers can ensure that students have access to a range of learning materials and methods, enhancing their opportunities for success.

2. Culturally Relevant Curriculum

An inclusive teacher ensures that the curriculum reflects the diverse backgrounds and experiences of their students. By integrating multicultural perspectives, authors, historical events, and real-world applications into lessons, teachers create an engaging and inclusive learning environment that resonates with all students.

3. Peer Mentoring Programs

Peer mentoring programs provide opportunities for students to support one another in their academic and personal growth. Teachers can facilitate mentorship relationships where students help their peers with assignments, social interactions, or emotional challenges. This approach not only supports academic achievement but also fosters a sense of community and inclusion.

4. Use of Assistive Technology

Assistive technology tools, such as screen readers, speech-to-text software, and audio books, can be invaluable in supporting students with disabilities or other learning challenges. Incorporating these technologies into classroom instruction helps ensure that students with diverse needs can access content and participate fully in learning activities.

5. Ongoing Professional Development

Effective teachers continually seek professional development to improve their skills in inclusive teaching. Workshops, training sessions, and collaboration with colleagues provide opportunities for teachers to stay updated on best practices, new technologies, and strategies for fostering inclusivity in the classroom.

CONCLUSION

In conclusion an effective teacher's inclusive behaviour is characterized by a commitment to creating a supportive and equitable learning environment that acknowledges and embraces the diverse needs of all students. Such teachers demonstrate a positive and welcoming classroom atmosphere, appreciate and adapt to individual differences, and employ varied teaching strategies to cater to multiple learning styles. They prioritize collaborative learning, actively engage students, and extend inclusive practices beyond the classroom by collaborating with colleagues and families. By fostering a culture of acceptance, providing ongoing feedback, and continually seeking professional growth, inclusive teachers empower all students to reach their full potential and become advocates for inclusion themselves.

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PROFESSIONAL DEVELOPMENT FOR TEACHERS IN THE DIGITAL ERA

***Dr C. Beulah Jayarani**

INTRODUCTION

The advancement of digital technology has transformed numerous facets of life, particularly in the realm of education. In the digital age, educators must comprehend the subject matter and effectively incorporate technology into their teaching methods. Teacher Professional Development denotes an ongoing process designed to enhance educators' knowledge, skills, and competencies to elevate teaching practices and student learning outcomes. This initiative encompasses several training events, workshops, school-based instruction, and collaboration with colleagues and other educational stakeholders.

Teachers must acquire new techniques to employ technology in the classroom in the digital era. This includes using software like educational applications, e-learning platforms as well as hardware like laptops and tablets. Professional development centered on digital skills is a necessity since technology is being incorporated into the learning process more and more.

The educational landscape has experienced a profound shift in the wake of the COVID-19 pandemic's worldwide disruptions, forcing educators to traverse unfamiliar territory in the digital age. A swift and revolutionary transition to digital learning arose as educational institutions and schools around the world struggled with closures and the requirement for social separation. Online and remote learning quickly replaced traditional teaching strategies with highlighting how important technology is to maintaining educational continuity.

This shift required teachers to venture into unfamiliar territory, modifying their pedagogical approaches to virtual settings while also becoming proficient with digital tools and platforms. In addition to hastening the adoption of technology in the classroom, the pandemic's demands have highlighted the necessity of ongoing professional development for teachers. In addition to hastening the adoption of technology in the classroom, the pandemic's demands have highlighted the necessity of ongoing professional development for educators in order to meet the ever-changing demands of the digital age.

Effective professional training, according to Darling-Hammond et al. (2017) and Borko (2004), is practice-based, ongoing, and incorporates teacher collaboration. To have a lasting effect, one-time instruction or workshops that are not integrated into regular practice are insufficient. In order for educators to keep learning and growing as technology advances, they must be allowed to work together and exchange technological experiences.

COMPARISON OF TRADITIONAL EDUCATION AND TODAY'S EDUCATION

Traditional education used to be mostly based on teacher-centered instruction, in which teachers controlled the learning process and students were only passive information consumers. Learning resources were frequently restricted to lectures and texts, and classroom interactions were scarce. With group projects, interactive conversations, and hands-on activities, students actively participate in their education in today's curriculum, which strongly emphasizes student-centered learning. Technology is essential to modern education because it provides access to a vast array of digital resources, online courses, and interactive learning platforms.

Technology has been a driving force behind educational innovation, allowing teachers to use student-centered pedagogies that accommodate a range of learning preferences and skill levels. In addition, today's education, which recognizes the variety of student requirements and learning styles, promotes individualized learning pathways tailored to each student's strengths and shortcomings. This method prepares kids for the fast-paced, technologically-driven world of today while fostering their creativity, critical thinking, and problem-solving skills.

All things considered, the transition from traditional to modern education is a change from passive receipt to active participation, embracing technology's capacity to improve learning outcomes and develop critical abilities for success in the twenty-first century.

Need of an Hour:

This is 2025. The world is evolving at a never-before-seen rate, and technology has become even more integrated into our daily lives. What, then, does it mean to be a successful teacher in this fast-paced age? In a world we can hardly fathom, how can we prepare the next generation?

Recent technical advances and the increase in literacy have led to the expansion of technology in the classroom. All of these generations—from Gen-Z to millennials—are joining the classroom today, and they all have unique traits that set them apart from one another. As passive learners, these generations struggle and expect to be actively involved in their education.

Consequently, it is imperative that teachers embrace technology and integrate it into their students' education.

ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

Information and communication technology, or ICT, is a vital component of the larger technological landscape and plays a key role in changing education. ICT includes a wide variety of digital tools, gadgets, and platforms that transform the process of teaching and learning. ICT democratizes knowledge in the field of education by enabling access to a wide range of educational resources and information, spanning national borders. Students' engagement and critical thinking are encouraged by the dynamic and captivating learning experiences made possible by digital technologies. Additionally, ICT gives teachers the ability to adapt their lessons to each student's unique learning preferences and needs. It fosters teamwork and efficient information sharing by improving communication and collaboration between educators and students. Furthermore, ICT also equips students with the core competencies—such as digital literacy and problem-solving strategies—necessary to thrive in the contemporary environment. ICT is a revolutionary force that is always changing, offering education stakeholders new opportunities and challenges. To fully realize its potential in improving learning outcomes and influencing the direction of education, it must be carefully integrated.

ARTIFICIAL INTELLIGENCE IN EDUCATION

The use of AI in education has opened up new possibilities for creating better technology-enhanced learning environments and more efficient learning activities. AI technology has several important applications in education, including adaptive learning, distant learning, autonomous grading, teacher feedback, and more.

The student assessment of the instructor approach, which has been employed in education for a long time, is known as teacher feedback. Feedback has not improved much despite the switch from paper to internet surveys. Student evaluation of teaching needs to be given priority since it is often the most useful source of data. Artificial intelligence (AI)-driven conversation robots, machine learning, and natural language processing are examples of contemporary technologies that have intriguing prospects for enhancing the quality of feedback.

The automatic grading system is a professional AI-based computer program that grades student work in an educational setting by simulating a

teacher's actions. It assesses students' knowledge, examines their answers, gives them feedback, and develops customized training plans. Numerous apps for artificial intelligence education use this program. During the learning test, the learner assessment score is automatically provided by the system. While students are more conscious of their learning accomplishments and information mastery, this approach can help teachers better understand their students' learning circumstances.

AI is essential for distance learning as well. The use of AI in remote learning aims to investigate how computers may be used to close the gap between teachers and students. Distance education can be enhanced by various intelligent systems or supported by artificial intelligence technologies.

Benefits of Technology in Education:

- **Easy Access to instructional Resources:** Owing to technology, instructors and students may easily access a wealth of learning resources, such as digital libraries, online textbooks, instructional websites, and multimedia materials. This accessibility improves the educational process and enables students to investigate a wide variety of data and viewpoints.
- **Continuous Learning:** Technology makes it possible to learn continuously outside of the traditional classroom. A culture of lifelong learning is being fostered by the widespread availability of online courses and webinars, which allow educators and students to participate in professional development and self-paced learning.
- **Knowledge Sharing:** Information and knowledge can be shared easily with the help of educational technology. A lively learning community is fostered via online platforms, discussion boards, and collaborative technologies that enable teachers and students to share resources, ideas, and insights.
- **Learning Aids:** Interactive simulations, virtual labs, and instructional games are just a few of the ways that technology may help make difficult subjects more approachable and interesting. These resources support a more thorough understanding of the subject matter and take into account different learning styles.
- **Distance Learning:** Because to technological advancements, students can now take part in courses and programs from any location in the world. Effective remote learning experiences are made possible by online learning platforms, video conferencing, and virtual classrooms.
- **Proper Record Keeping:** Teachers can more easily monitor students' progress, tests, and attendance when they use digital tools and software that facilitate efficient record keeping. Data-driven decision-making is made possible by this systematic method, which also improves student performance monitoring and evaluation.

- **Personalized Learning:** Teachers can adapt lesson plans and instructional tactics to fit the requirements and learning preferences of individual students by using technology to develop personalized learning paths. Personalization increases student engagement and improves learning results.
- **Global connection:** Students can collaborate with peers and specialists from a variety of cultural backgrounds thanks to educational technology, which promotes global connectedness. Students' viewpoints are widened and intercultural understanding is fostered by this interconnectivity.
- **Real-Time Feedback:** Students can receive immediate, helpful feedback on their performance, quizzes, and assignments thanks to technology. Instant feedback encourages self-directed learning and assists students in identifying areas for growth.
- **Improved Teacher Productivity:** By using educational technology to speed up administrative work, teachers may focus more on class design and implementation. Effective grading, content production, and parent and student communication are made possible by time-saving technologies. Many benefits of integrating technology into education empower teachers and students in their quest for knowledge, creating a more vibrant, inclusive, and productive learning environment.

CHALLENGES

The worldwide transition to digital education during the initial phase of the COVID-19 pandemic required the rapid implementation of professional development for educators in online and blended learning, as the majority of teachers and students possessed minimal to no experience with these instructional methods. Educators globally are encountering a singular and unparalleled context—one in which the transition to digital was mandated, resulting in several repercussions.

Alongside the observable alterations in the physical and logistical aspects of the sudden transition to online and blended learning, less apparent personal components, like teacher emotions and motivation, have been affected by the significant shift in professional duties. Teaching is an emotionally charged endeavour, and alterations in pedagogical methods, especially the shift to online instruction, can significantly influence educators' emotions and motivation. Students who must switch to distant learning may experience severe anxiety as a result of the move to online and blended learning delivery of education, which naturally affects educator anxiety as well.

Teachers have been forced to work at the lower levels of Maslow's (1962) hierarchy, trying to simply survive and fulfil their duties as best they can, given a completely new way to approach teaching and learning in the middle

of a global health crisis. In order to support their students as efficiently as possible while becoming proficient in online and blended learning techniques, many teachers may find themselves in a new setting where they must concentrate solely on context, curriculum, and students. A variety of unique contextual elements, as well as shifts in teachers' perceptions of their own professionalism, can impact the professional development strategies and programs required to assist educators during this crisis.

BENEFITS AND CHALLENGES OF ARTIFICIAL INTELLIGENCE IN EDUCATION

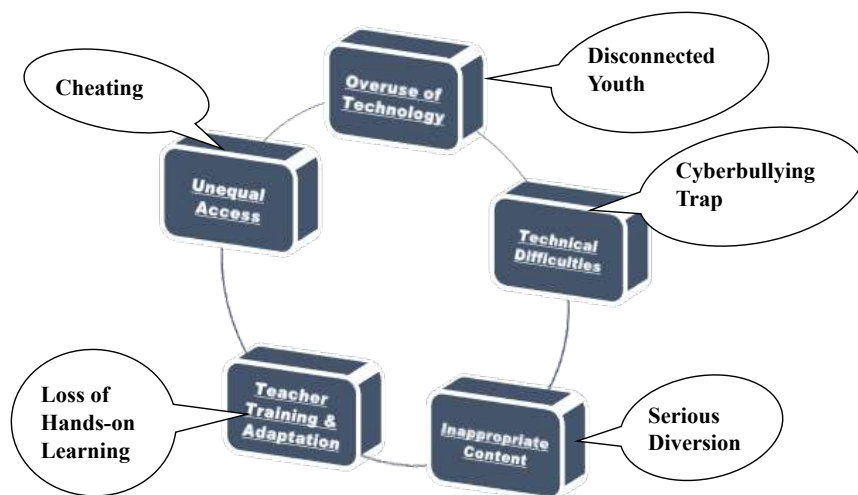
Applications of AI in education offer a wide range of benefits. Personalized learning systems, automated tests, social media platforms, and predictive analytics tools are just a few of the AI applications that are being used more and more in educational settings. These applications are driven by machine-learning systems and algorithms. Teaching in mixed-ability classrooms, giving students thorough and prompt feedback on their writing, relieving teachers of the burden of knowing everything and freeing them up to support their students while they observe, discuss, gather information in their collaborative knowledge-building processes, and more are just a few of the ways that these AI applications have shown promise in helping teachers and students.

Through social media, social networking sites like Facebook and WhatsApp links teachers and pupils, which can foster collaborative learning, active learning, and relationships with groups beyond the classroom. Because of the different AI systems, chatbots are also present on social media platforms. Personalized learning systems, sometimes referred to as intelligent tutoring systems or adaptive learning platforms, are common and beneficial uses of AI to assist educators and learners. Depending on their individual learning requirements and courses, these applications provide students with access to a variety of educational resources. One of the most exciting applications of AI in education is adaptive learning. AI-powered adaptive learning solutions are made to maximize learning efficiency, whereas the conventional classroom education approach remains one-size-fits-all.

Notwithstanding these benefits, there are some valid concerns. Privacy is one of the main issues. Among the major drawbacks of technology adoption in ridesharing are privacy violation and the unpredictability of AI. The system of organizing, collecting, controlling, storing, using, archiving, and destroying data is the focus of data governance. A defined program, backed by explicit policies and procedures, and conveyed by management and leadership of the organization are what drive the establishment of data

governance. Generally speaking, the regulations must include all the tools required to uphold the general criteria, which include security, auditability, accessibility, availability, completeness, accuracy, integrity, and consistency. The applicability of the elements associated with each technology determines how well big data analytics and AI may be used. The person possesses the knowledge and analytical abilities necessary to employ in-depth data analysis to support analysis and decision-making.

LIMITATIONS OF TECHNOLOGY IN EDUCATION



- **Access to Inappropriate Content:** Teachers may find it difficult to maintain a safe and secure learning environment when students have unfettered access to the internet and digital tools, which may expose them to offensive or dangerous content.
- **A Disconnected Youth:** By decreasing in-person interactions and fostering social isolation, excessive technology use can have an impact on kids' social and emotional development.
- **Cyberbullying Trap:** Students are at risk of online harassment and victimization due to the proliferation of technology, which may have an adverse effect on their academic performance and general well-being.
- **Cheating:** It is inevitable since technology makes it simple to obtain information online, which can lead to academic dishonesty and cheating, compromising the validity of tests and evaluations.
- **A Serious Diversion:** The appeal of social media, video games, and entertainment can cause diversions in the classroom that prevent pupils from concentrating on academic material and impede their ability to study.
- **Overuse of Technology:** Students who rely too heavily on technology for

learning may find it more difficult to think critically and solve problems without the use of digital technologies.

- ***Unequal Access:*** A digital divide and differences in educational possibilities may result from certain pupils' unequal access to technology.
- ***Technical Difficulties:*** When technical malfunctions and connectivity problems interrupt instruction, both teachers and students may grow irritated.
- ***Teacher Training and Adaptation:*** Due to insufficient training or aversion to change, some teachers may find it difficult to successfully incorporate technology into their lesson plans.
- ***Loss of Hands-on Learning:*** In some topics and disciplines, especially, an excessive focus on digital learning may reduce opportunities for hands-on learning and practical experience.

Even while technology has many positive effects on education, there are some drawbacks that must be addressed beforehand. In order to use technology's potential to improve learning results while preserving students' academic integrity and well-being, educators, lawmakers, and parents must work together to overcome these obstacles.

DIGITAL TEACHERS LEADERSHIP

In order to incorporate the right technologies into their educational leadership, educators should be well-versed in the new technologies, digital tools, and capabilities. They should also take part in innovative and quality-focused training programs.

School administrators who practice digital leadership can greatly boost teacher's enthusiasm and inspire them to use technology to enhance education. Furthermore, based on the opinions of the participating teachers in a study, school principals generally support a culture of digital learning by encouraging the use of digital media tools, technology-based classes, and technological tools like e-books and e-exams. A tiny percentage of teachers reported that their school administration did not encourage technology-based professional development. They cited inadequate training, a lack of resources, and an assumed increase in workload as the reasons.

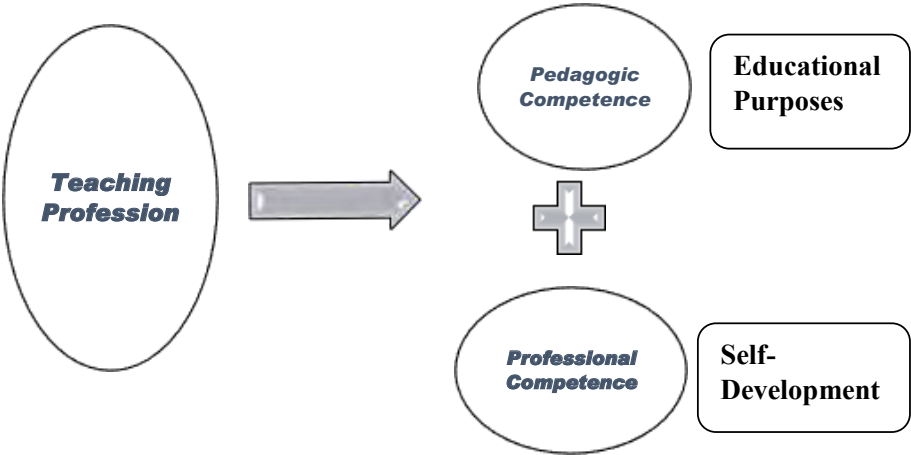
One of the most important skills that people in general and educators in particular need to have in the future society is digital competency. In fact, acquiring Teachers Digital Competencies (henceforth, TDC) at all educational levels, including the university, is one of the primary strategic axes of Spain's recent National Plan of Digital Competencies (MINECO, 2021), which aims to promote inclusive and sustainable economic growth. Since

the transformation and improvement of education will depend on educational action, among other things, teachers are essential to this process of integrating technologies and play a critical role in the adoption and implementation of ICT in the classroom. This means that teachers need to possess effective digital competencies that enable them to integrate and use technologies in a pedagogical way.

Every aspect of human existence has been impacted by the digital era 4.0. including the field of education. It is imperative to acknowledge that the digital era 4.0 has significantly contributed to the advancement and enhancement of educational quality. As an illustration, the usage of media in digital education undoubtedly facilitates learning both within and outside of the classroom. Digitization is therefore inevitable.

The Minister of Education and Culture introduced the Independence Learning program policy in 2020. The underlying idea of this educational system is that learning freedom is fostered by the educational environment. To find the most effective way to use learning strategies, Merdeka learning promotes change.

In order to impart subject matter in schools more effectively, instructors must possess the necessary skills and abilities to use the ICT that is currently available. Four competencies—pedagogic, professional, personality, and social—must be acquired by teachers, according to Permendiknas Number 16 of 2007 concerning Academic Qualification Standards and Teacher Competencies. There are two ICT-related competencies are essential in day today teaching profession: 1) pedagogic competence, which involves using ICT for educational purposes; and 2) professional competence, which involves using ICT for self-development and communication.[9]



FUTURE SUGGESTIONS

In order to document the experiences of educators in a rapid transition to blended learning for post-earthquake continuity of instruction initiatives in New Zealand, Mackey et al. (2012) used Quarantelli's (2002) quick reaction research approach. To get the crucial viewpoints of educators and professional development staff about their quick transition, this approach coupled with a meta-aggregative approach can be used which leads to constructing synthesised findings and action recommendations, without reinterpreting the original findings. In order to adapt the Philipsen et al. teacher professional development for online and blended learning concept for use in this current post-COVID period, it may be worthwhile to address the particular variables associated with changing settings.

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INTERPERSONAL AND INTRAPERSONAL RELATIONSHIP AMONG GEN Z AND GEN ALPHA LEARNERS

*** Dr. M. Nandhini**

INTRODUCTION

The rapidly evolving landscape of education has brought to the forefront the complex and dynamic nature of relationships among learners. Specifically, the interpersonal and intrapersonal relationships of Gen Z and Gen Alpha learners have become a critical area of focus, as these relationships play a pivotal role in shaping their social-emotional, cognitive and academic development. Gen Z and Gen Alpha learners are growing up in a world characterized by unprecedented technological advancements, societal shifts and cultural diversity. As a result, their relationships are influenced by a unique blend of factors, including social media, digital communication and changing family dynamics. Furthermore, the distinct experiences, values and worldviews of these generations are redefining the ways in which they interact with others and navigate their own identities.

A deeper understanding of the interpersonal and intrapersonal relationships among Gen Z and Gen Alpha learners is essential for educators, policymakers and parents seeking to create supportive, inclusive and effective learning environments. This understanding can inform the development of targeted strategies, programs and practices that promote social-emotional learning, emotional intelligence and academic success, ultimately empowering Gen Z and Gen Alpha learners to thrive in an increasingly complex and interconnected world.

GEN Z LEARNERS

Generation Z (often shortened to Gen Z), is the demographic cohort that follows Millennials and precedes Generation Alpha. This generation is also affectionately known as “Zoomers”. Gen Z learners comprise individuals born between approximately 1997 and 2012, who have grown up in a world where technology is ubiquitous and the internet is an integral part of daily life.

As digital natives, Gen Z learners are highly comfortable using technology, accessing information online and leveraging social media to connect with others. This has shaped their learning preferences, with many

prioritizing collaborative learning experiences that mirror their online interactions. Gen Z learners are accustomed to instant access to information, which has influenced their expectations for learning and communication.

Researchers and popular media have established the mid-to-late 1990s as the starting birth years for Gen Z, with the early 2010s marking the ending birth years. As a result, the generation is most frequently defined as people born from 1997 to 2012. This birth range has significant implications for understanding the values, attitudes and behaviors of Gen Z learners. Most members of Generation Z are the children of Generation X and older Millennials. This parental influence has instilled in Gen Z learners the values of diversity, inclusivity and social responsibility. Growing up in a rapidly changing world, Gen Z learners are adaptable, resilient and open to new ideas, making them an exciting and dynamic demographic cohort that is shaping the future of education and beyond.

GEN ALPHA LEARNERS

Generation Alpha (often shortened to Gen Alpha) is the demographic cohort that follows Generation Z and precedes Generation Beta. Gen Alpha learners comprise individuals born between 2013 and 2025, which have grown up entirely within a digital world. This generation has been shaped by their early and pervasive exposure to digital devices and online platforms, which has influenced their learning preferences and technological fluency.

As the first generation to be born entirely in the 21st century and the third millennium, Gen Alpha is unique in that they have never known a world without smart phones, tablets and the internet. This has resulted in high levels of technological fluency, with Gen Alpha learners exhibiting a natural ability to navigate digital environments and utilize technology to support their learning. Their learning preferences are characterized by a desire for interactive, immersive and personalized learning experiences.

The birth years that define Generation Alpha are generally considered to be between 2013 and 2025, although these ranges are not precisely defined and may vary depending on the source. Researchers and popular media often identify the early 2010s as the starting birth years and the mid-2020s as the ending birth years. As a result, Gen Alpha is a distinct demographic cohort that is shaped by their unique historical and cultural context.

The majority of Generation Alpha is comprised of the children of Millennials and older Gen Z. This parental influence has instilled in Gen Alpha learners the values of diversity, inclusivity and social responsibility. As Gen Alpha continues to grow and develop, it is likely that they will bring a unique perspective and set of skills to the table, shaped by their experiences

growing up in a rapidly changing, increasingly digital world.

INTERPERSONAL RELATIONSHIP AMONG GEN Z AND GEN ALPHA LEARNERS

Gen Z and Gen Alpha learners’ interpersonal relationships are molded by their individual characteristics, experiences and worldviews. The following ten points offer a deeper understanding of the complex relational dynamics between these two generations.

S. No.	Gen Z Learners	Gen Alpha Learners
1	Digital Communication Proficiency	
	Comfortable with online messaging and social media platforms, valuing direct and immediate communication.	Raised in an era of advanced technology, including artificial intelligence and digital assistants, making them even more tech-savvy than Gen Z.
2	Learning Preferences	
	Exposed to a hybrid learning environment that combines traditional teaching methods with digital tools and technologies, resulting in a tech-infused educational experience.	From a very young age, they have been familiarized with digital learning environments and online platforms, seamlessly integrating technology into their educational experiences.
3	Social Awareness and Activism	
	They are socially conscious and politically active, leveraging online platforms to connect with others who share their passions and values and to mobilize around causes they care about.	Influenced by their early exposure to diverse cultures and global challenges, they are expected to develop a strong sense of environmental awareness and a deep commitment to global responsibility.
4	Personalization Expectations	
	They value customized content and experiences tailored to their individual needs, although they may not necessarily take it for granted.	Raised in an era of customization, they expect personalized interactions and experiences as standard.

5	Communication Styles	
	Value authenticity and prefer direct communication, often using text-based methods.	Their communication preferences are still developing but are likely to be even more tech-savvy than Gen Z.
6	Parental Influence	
	Gen Z learners are more likely to have parents who emphasize independence, self-reliance and resilience, encouraging them to develop skills that will help them navigate a complex and ever-evolving world.	Gen Alpha learners are more likely to have parents who emphasize entrepreneurship, creativity and innovations, encouraging them to develop skills that will help them thrive in a rapidly changing world.
7	Individualism Vs. Collectivism	
	They Prioritize autonomy and self-expression, actively seeking environments that support and celebrate their individuality.	Tend to blend individualistic and collectivistic tendencies, seeking personalized learning paths while also emphasizing the importance of teamwork, shared goals and community well-being.
8	Financial Perspectives	
	They are pragmatic and budget-conscious due to growing up during economic uncertainty, leading to cautious financial decision-making.	Growing up in a digital economy, they may develop early financial literacy, impacting their social behaviors and expectations.
9	Health and Wellness Focus	
	Tend to prioritize mental wellness, encouraging open conversations and nurturing supportive networks that promote emotional health and resilience.	Likely to prioritize holistic well-being, driven by growing up with readily available health information and a cultural emphasis on self-care.
10	Adaptability and Change	
	Adapted to rapid technological advancements, influencing how they navigate social dynamics.	Their exposure to rapid technological advancements may make them more adaptable, influencing how they navigate social dynamics.

The interpersonal relationships of Gen Z and Gen Alpha learners are shaped by their unique experiences and characteristics. Gen Z learners’ value authenticity and direct communication, often preferring text-based interactions. In contrast, Gen Alpha learners, born between 2013 and 2025, are growing up in a world of rapid technological advancements and are likely to be even more tech-savvy than Gen Z learners. As a result, Gen Alpha learners may prefer more immersive and interactive communication styles. Despite these differences, both Gen Z and Gen Alpha learners prioritize emotional intelligence, empathy and inclusivity in their relationships. Understanding these interpersonal dynamics is crucial for educators, parents and caregivers to foster positive relationships and support the social-emotional development of Gen Z and Gen Alpha learners.

INTRAPERSONAL RELATIONSHIP AMONG GEN Z AND GEN ALPHA LEARNER

Gen Z and Gen Alpha learners’ intrapersonal relationships are shaped by their unique self-perceptions, emotional landscapes and cognitive processes. The following ten points provide insight into the complex internal dynamics that influence their individual growth, motivation and well-being.

S. No.	Gen Z Learners	Gen Alpha Learners
1	Self-Awareness and Reflection	
	Often possess a high degree of self-awareness, enabling them to thoughtfully reflect on their own strengths, weaknesses, and emotions.	They are in the process of cultivating their self-awareness and refining their ability to reflect on their thoughts, feelings, and experiences.
2	Emotional Regulation	
	May have difficulty managing their emotions and responding to challenging situations in a healthy and constructive way.	Developing emotional resilience as they learn to cope with and manage their feelings in a world characterized by rapid technological advancements, societal shifts, and evolving norms.
3	Motivation and Drive	
	Driven by a desire for autonomy and creative freedom. They thrive when given the opportunity to express themselves authentically.	They are curious and imaginative. They love to explore and learn through discovery.

4	Resilience and Adaptability	
	Developed resilience and adaptability in the face of uncertainty.	Learning to navigate a world of rapid change and technological advancements.
5	Learning Styles	
	They prefer to learn by doing, rather than just reading or listening.	Accustomed to interactive, immersive learning experiences that simulate real-world environments.
6	Communication Styles	
	They appreciate honesty and straightforwardness in their interactions.	Their communication styles are still evolving and taking shape.
7	Problem-Solving and Critical Thinking	
	Learners are adept at problem-solving and critical thinking.	Learners are developing these skills through interactive learning experiences.
8	Creativity and Imagination	
	They cherish the freedom to express themselves uniquely and explore their imagination.	Inspired to dream big, think outside the box, and explore new ideas.
9	Emotional Intelligence	
	Place a high value on understanding and managing their emotions, as well as being kind and compassionate towards others.	Cultivating emotional intelligence through interactive and engaging social-emotional learning experiences that help them recognize, understand, and manage their emotions, while developing empathy and strong relationships with others.
10	Mental Health and Well-Being	
	They are more willing to discuss and prioritize their mental well-being.	Growing up in a world where mental health and well-being are increasingly prioritized.

The intrapersonal relationships of Gen Z and Gen Alpha learners are characterized by distinct self-awareness, motivation and emotional regulation patterns. Gen Z learners, tend to be more self-aware and reflective, with a strong desire for autonomy, creativity and self-expression. In contrast, Gen Alpha learners are still developing their self-awareness and reflection skills, but are driven by curiosity; imagination and exploration both generations prioritize emotional intelligence and mental health, with Gen Z learners being more open about their emotional struggles and Gen Alpha learners growing up in a world where mental health is increasingly. Understanding these intrapersonal dynamics is essential for educators, parents and caregivers to support the unique needs and abilities of Gen Z and Gen Alpha learners.

CONCLUSION

In conclusion, this chapter highlights the complex and interconnected nature of interpersonal and intrapersonal relationships among Gen Z and Gen Alpha learners. By acknowledging and responding to the unique experiences, values and technological environments of these generations, educators can create supportive and inclusive learning environments that foster emotional intelligence, empathy and holistic well-being. Both generations prioritize emotional intelligence, empathy and inclusivity, seeking supportive learning environments that foster social-emotional learning, emotional intelligence and academic success. As digital natives, they are shaped by technological advancements, necessitating educators to integrate technology effectively, promote collaborative learning and encourage creativity and critical thinking. By understanding these dynamics, educators can create inclusive, empathetic and supportive learning environments that cater to the unique needs of Gen Z and Gen Alpha learners, ultimately enhancing their emotional intelligence, social-emotional learning and academic achievement.

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CHAPTER - III



Harnessing Technology for Teaching - Learning

ARTIFICIAL INTELLIGENCE IN EDUCATION: PERSONALIZED LEARNING FOR EVERY STUDENT

***S. Catherine Nithya**

INTRODUCTION

Integration of Artificial Intelligence into education is actually revolutionizing how students learn, comprehend, analyze and evaluate content. It has also revolutionized on how teachers prepare for the class, teach, assess and evaluate their students. As classrooms have become increasingly diverse, in terms of knowledge, technical and pedagogical skills, the educational needs of students and teachers have become more complex, the traditional one size fits all, and teaching and learning methodologies are proving inadequate. Imagine being a student, sitting in a classroom in a lazy afternoon, and the teacher is using the ever old PowerPoints for teaching. Even PowerPoints have become a mundane idea in this exciting era of artificial intelligence. In the same way, imagine being a teacher, feeling inadequate in motivating students to listen to your class and maintaining discipline in class. Artificial intelligence based tools help teachers in changing the above scenario.

According to AIPRM Global Statistics, around two-fifths (44%) of children actively engage with generative AI, with more than half (54%) using it for schoolwork and/or homework. This statistic shows the growing prevalence of AI in education, highlighting both the need and the potential of integrating AI in education. For example, the case of any middle school child struggling with math concepts, particularly fractions. The teacher is also overwhelmed trying to address this problem, that is, to oversee every student's individual needs. Enter AIEdumate, an AI-powered learning platform that helps the student tackle problems at their own pace. As for the teacher, within weeks of implementation, the classroom dynamics shifted dramatically. In an AI-enhanced learning environment, student's difficulties are quickly identified by an intelligent tutoring system. AI analyzes the student's work patterns, pinpoints specific areas of confusion, and generates a personalized curriculum that breaks down complex concepts into manageable steps. As the student progresses, the system adjusts in real time, offering more challenging problems when the student excels and providing additional support when the student falters.

The National Education Policy (NEP) 2020 aims to make Indian education flexible and student-centric. AI tools will be leveraged to analyze students' learning patterns, preferences, and strengths to tailor their educational experiences to achieve these goals. According to TeamLease EdTech's recent survey done in 2024, over 61% of educators in India are using AI tools. Educators are being empowered with AI tools, helping them to navigate through the needs of the common classroom. There has been a shift towards AI-powered personalized learning, and it has been transforming classroom learning at a larger scale. AI has been reshaping the entire educational landscape. In urban cities, private schools are expecting the teachers to demonstrate their AI skills in the classroom, integrating them into every aspect of the curriculum. In rural cities, where the resources are scarce, teachers use AI-powered platforms to bridge the gap. For example, students struggling with basic literacy now have access to adaptive language learning applications like Duolingo that will adjust to their pace and learning style. However, the rapid adoption of AI in schools and for personalized learning has its challenges and controversies. As AI systems have become more complex and are being integrated into core educational processes, there is concern about data privacy, algorithmic bias, and the loss of human touch in education. This raises a lot of ethical questions and concerns about its use.

ARTIFICIAL INTELLIGENCE

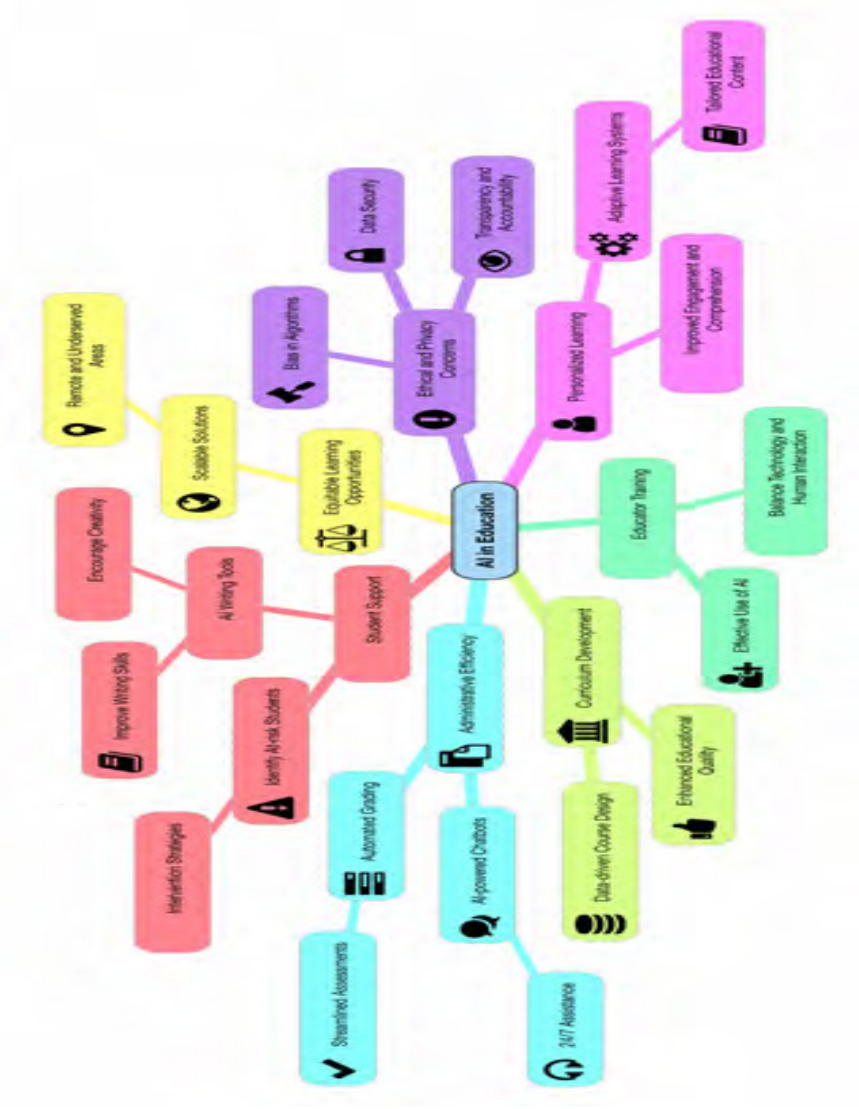
AI in general terms, is a system that mimics human behavior and intelligence. In the field of education, AI goes beyond mere imitation as it enhances and amplifies human capabilities, offering great opportunities for personalized learning. Artificial Intelligence imitates human intelligence through programmed computer programs designed to execute intelligence-based tasks. These capabilities include learning and reasoning together with problem-solving and natural language processing and perception. The algorithms and data that AI uses enable it to identify patterns as well as make choices that become more adept over time using machine learning principles. If AI has been created to solve one specific problem then it is called narrow and when engineers build systems attempting to achieve human intelligence across multiple domains this becomes general AI. Various artificial intelligence techniques such as neural networks and deep learning and natural language processing enhance healthcare together with finance and transport operations through automated work and operational simplification and innovation-based development.

HISTORY OF ARTIFICIAL INTELLIGENCE



In 1943, Warren McCulloch and Walter Pitts created a model of artificial neurons that would mimic the real neurons of human brain. In 1950, Alan Turing introduced the Turing test which tested the whether the machine could exhibit human intelligent behavior. In 1956, John McCarthy officially introduced the term ‘Artificial intelligence’ at the Datmouth College Conference. In 1959, Arthur Samuel introduced the concept of ‘Machine Learning’. In 2006, Geoffrey Hinton popularized the term ‘Deep Learning’ which is the subset of Machine Learning. In 2011, Siri, the first smart assistant was introduced by Apple. In recent years, AI continues to expand and widen its horizons.

ARTIFICIAL INTELLIGENCE IN EDUCATION

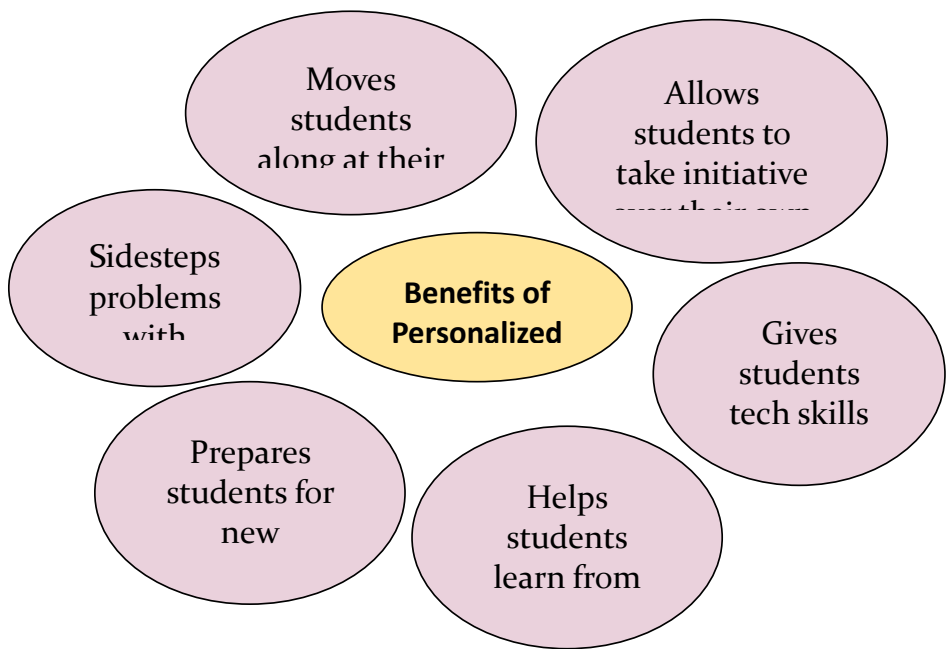


AI in education represents the integration of artificial intelligence technologies to improve educational teaching along with learning and administrative operations. A set of tools based on artificial intelligence delivers personalized learning services that change their approach according to student requirements and perform smart tutoring functions together with automated scoring procedures. AI examines large data sets to discover learning deficiencies while making student performance projections and targeted suggestions for students. Virtual assistants along with chatbots assist students and teachers through answering questions and handling their tasks. AI technology makes possible the creation of interactive learning environments by using virtual and augmented reality technologies. AI automation of administrative work gives teachers the opportunity to direct their attention toward education activities. AI education focuses on enhancing learner accessibility together with classroom engagement and student achievements while delivering better teaching techniques to educators.

PERSONALIZED LEARNING

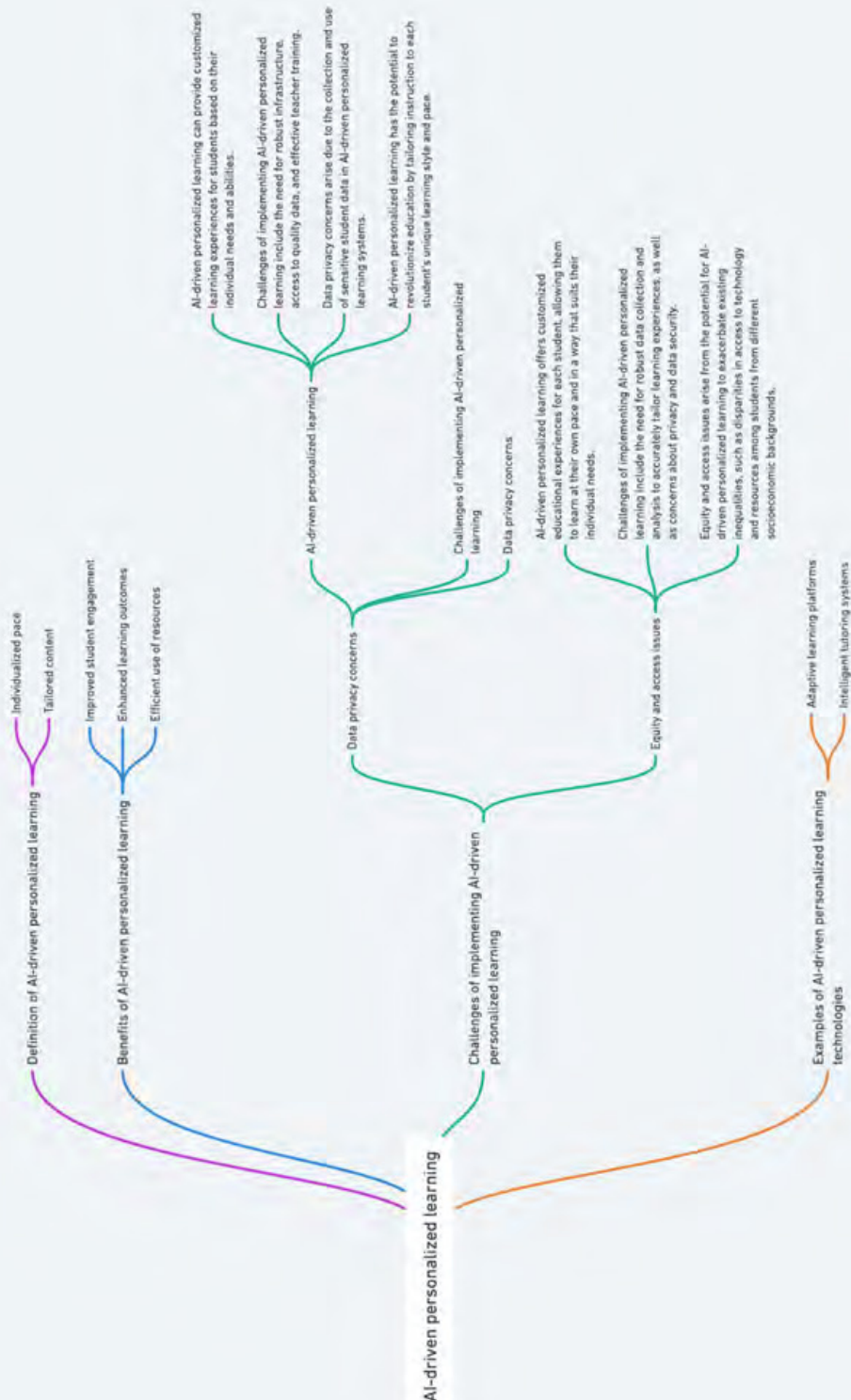
Personalized learning involves analyzing student's learning style, pace, and specific areas of confusion, breaking down difficult concepts into digestible chunks, and presenting them through interactive games and simulations. Personalized learning is the breaking down of barriers to create individualized learning opportunities for each student. Technology, data and adaptive tools that enable personalized instruction. AI and machine learning help identify students' strengths and weaknesses and recommend resources or activities to fill in the gaps. Adaptive learning tools change the level of difficulty instantly according to the students' performance. Student-led learning plans allow students to goal set and self-pace. Personalized learning boosts engagement, motivation and mastery of concepts by aligning learning with what individuals prefer and can achieve. It helps educators better support as the personalized learning systems are deriving an incredible amount of information. Personalized learning enables learners and enhances results and it also helps making a rather more inclusive, flexible learning environment. In a world characterized by complexity and technology, personalized learning is an imperative approach that the 21st century must embrace in order to meet the diverse learning needs. Recent progress in AI and its digital tools can tailor education to the individual learning styles, paces, and interests of each single student so that no students will be left behind. Personalized learning engages them on a deeper level — through relevant, engaging education, while helping them acquire crucial 21st-century skills, such as problem-solving, creativity and self-directedness. It also promotes equity, because it helps more struggling learners catch up, and it challenges

more advanced students. Students need those skills from personalized learning to thrive in constantly changing environments, which is essential in a globalized economy that requires flexibility and lifelong learning.



AI-DRIVEN PERSONALIZATION IN MODERN EDUCATION

Personalization of artificial intelligence is transforming contemporary education by designing customized learning experiences that address the distinct needs, strengths, and interests of every learner. As schools began implementing AI-driven personalized learning systems, the impact on student engagement and achievement has become highly increasing and it is evident. The AI system adapts in real-time, providing extra practice for the slow blooming students and provide challenging questions for the faster learners. Therefore, AI does not just personalize content but it also tails the delivery method. As we all know that there are 3 types of learners, using AI can help us to provide and personalize the content to the student's way of learning. Visual learners receive more diagrams and videos, while those prefer reading text-heavy explanations. Students who prefer kinesthetic way to learn, they will be supplied with exercises using puzzles, maps etc. Using AI, helps them to adjust the pace, allowing the students to progress at their own speed without feeling left behind or held back. The student will also receive real-time assessment and feedback which will help the students to clarify their doubts, find the problems and gain solutions on the same time.



CHALLENGES AND ETHICAL CONSIDERATIONS

The advancement in artificial intelligence and the integration of artificial intelligence in the field of education holds immense potential for progress in the same. However, this technology is not without its limitations and ethical dilemmas.

CHALLENGES

1. Data Privacy and Security

AI systems thrive on data sets. This raises concerns regarding data privacy and security. Collection, storage and processing of personal data such as family details, medical records, financial details and location data pose risks for theft.

Examples: a. Unauthorised access, b. Data Breaches, c. Misuse of Personal data, d. Re-identification and e. Compromise of individual privacy.

2. Bias in AI Algorithms

AI algorithms are trained on datasets. These datasets may reflect existing societal and political biases. Thus leading to general discriminatory outcomes.

Example: Facial recognition algorithms trained mainly on the images of brown men may exhibit lower accuracy for individuals with lighter or much darker skin tones or women in general.

3. Over-reliance on Technology

The increasing reliance on AI can lead to decrease in human intelligence, skills and overall evaluation. This can in turn lead to deleterious consequences in critical areas such as teaching, basics in school education, emotional intelligence, social intelligence etc.

Example: Critical and analytical thinking will be diminished, if all the information is processed by AI.

ETHICAL CONSIDERATIONS

1. Transparency

AI systems should be transparent i.e. explainable. Users should be able to understand how the system works and why it makes certain decisions.

2. Accountability and Responsibility

AI systems can make mistakes or might even cause harm. If that is the case, who is responsible for it ? the developer, the user or the AI itself.

3. Digital Divide

The knowledge of AI and its use may not be evenly distributed across the different parts of the country, thereby increasing the existing inequalities.

SUGGESTIONS FOR MITIGATION

1. Using proper encryption, anonymization and complying with the proper regulations of using AI can reduce the chances of theft, data piracy etc. Educating the stakeholders about the policies and dangers of using AI unknowingly, is one of the major key points.
2. Using diverse and proper data sets for training the AI systems can help perpetuate the problem of bias.
3. Providing affordable internet facilities and devices and making it accessible by using less expensive and offline alternatives.
4. Offering proper training and technical support to teachers will ensure in better usage of AI.
5. There should be a balance between the teacher-led activities and the use of AI in the classroom.

FUTURE TRENDS AND OPPORTUNITIES

The connection between using artificial intelligence for personalized learning is rapidly scaling, driving higher innovations to upgrade the resources.

1. ***AI powered Virtual Reality (VR) and Augmented Reality (AR):*** Real-time experiences such as learner interactions, engagement and performance are enhanced by AI. It can learn and analyze the learning behavior of the student with VR/AR environment to adjust the pace, difficulty and feedback. This helps in creating deeply immersive learning experiences for the students.
2. ***Gamification and Adaptive Learning Pathways:*** Games do leverage the learning of the students in general. When there is AI powered gamification accessible for the students, it is a win-win situation. The student will love to play games and when he/she is able to learn and understand the concepts at a much faster and easier rate. As AI can change the difficulty level and the content based on the input given by the students, i.e. learner preferences, learning styles and progress.
3. ***Lifelong learning and microlearning:*** AI facilitates lifelong learning by providing personalized recommendations based on the student's goals, interests and career aspirations. Microlearning is learning concepts reducing it to bite sized learning content. AI enhances microlearning by

providing bite sized content anytime and anywhere.

4. **Opportunities:** AI helps in bridging education gaps by providing access to high quality content for underserved communities, as it can adapt to any language and cultural context. Furthermore, AI is personalizing learning at every scale, regardless of geographical location or socioeconomic background. AI helps in personalized training and upskilling opportunities.
5. **Areas of further research:** Research is imperative for addressing ethical concerns that arises in using AI, such as data privacy, bias, and algorithmic fairness. Integrating affective precinct into AI learning systems can help in more human-like responses and to analyze the learner emotions and adjust the learning environment accordingly. Research should also explore how AI can complement and support teachers, help in working together for the betterment of the students.

CONCLUSION

AI provides an architecture for personalized learning, it enables in depth learning by tailoring the content according to the learning styles, preferences and needs of the students. It provides adaptive learning platforms, customized learning paths, real time analysis and feedback, intelligent learning systems, lerning analytics, personalized content recommendations, self-directed learning, and automated administration. AI helps the students to stay engaged, learn effectively and achieve their fullest potential. It also supports teachers in facilitating students overall learning and performance, thereby reducing the workload. As AI continues to evolve, it will transform the world of education in the coming years.

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ENHANCING COLLABORATION SKILLS WITH DIGITAL TOOLS IN THE TEACHING-LEARNING PROCESS

***Dr. A. Jasmine Christy**

INTRODUCTION

This chapter explores the enhancement of collaboration skills through digital tools in the teaching-learning process. It highlights the significance of digital collaboration in education emphasizing the transformation of traditional classrooms into interactive learning environments that foster engagement, creativity and teamwork. The chapter categorizes various digital collaboration tools including Learning Management Systems (LMS), communication platforms, collaborative document editing tools and interactive presentation tools. It further discusses strategies for creating collaborative classroom cultures, designing group activities and encouraging peer-to-peer learning. Additionally, the chapter addresses the importance of effective communication skills, constructive feedback and assessment methods in collaborative learning. Finally, it examines the role of digital tools in supporting diverse learning needs and facilitating teacher collaboration and professional development.

DIGITAL COLLABORATION IN EDUCATION

Digital collaboration in education refers to the use of technology to facilitate communication, cooperation and knowledge sharing among students, educators and other stakeholders. With the advancement of digital tools classrooms have transformed into interactive and connected learning spaces that foster engagement, creativity and teamwork (Redecker & Punie, 2017).

VARIOUS DIGITAL TOOLS ENABLE COLLABORATION IN THE CLASSROOM

- ***Learning Management Systems (LMS):*** Platforms such as Google Classroom, Moodle and Canvas allow educators to manage coursework, distribute assignments and facilitate discussions (Martin et al., 2019).
- ***Cloud-based Document Sharing:*** Google Drive, Microsoft OneDrive and Dropbox enable real-time collaboration on documents, presentations and spreadsheets (Trust & Maloy, 2021).

➤ **Video Conferencing Tools:** Zoom, Microsoft Teams and Google Meet support virtual collaboration, group discussions and remote learning opportunities (Hodges et al., 2020).

➤ **Collaborative Whiteboards:** Applications like Jamboard, Miro and Padlet facilitate brainstorming and interactive problem-solving in real-time (Dillenbourg, 2018).

➤ **Social media and Discussion Forums:** Platforms such as Edmodo, Flipgrid and Discord enhance peer interactions, discussions and feedback mechanisms (Veletsianos, 2020).

These tools help create an engaging learning environment that encourages student participation, enhances communication and supports collaborative problem-solving.

IMPORTANCE OF COLLABORATION SKILLS FOR STUDENTS AND EDUCATORS

Collaboration skills are essential for both students and educators in today's digital age. These skills not only improve learning outcomes but also prepare individuals for professional and real-world scenarios (Johnson & Johnson, 2018). Some key benefits include:

➤ **Enhancing Critical Thinking and Problem-Solving:** Collaboration fosters diverse perspectives, allowing students to engage in deeper discussions and innovative problem-solving (Laal & Ghodsi, 2012).

➤ **Developing Communication Skills:** Digital collaboration tools require students to articulate ideas effectively, whether through text, video or shared documents (Kim et al., 2019).

➤ **Encouraging Teamwork and Social Learning:** Group projects and peer interactions enhance teamwork, promoting empathy and cooperation among students (Vygotsky, 1978).

➤ **Supporting Professional and Lifelong Learning:** Educators benefit from digital collaboration through professional learning networks sharing best practices and engaging in continuous development (Trust, 2017).

➤ **Fostering Engagement and Motivation:** Interactive and collaborative digital tools increase student motivation making learning more dynamic and engaging (Hodges et al., 2020).

TYPES OF DIGITAL COLLABORATION TOOLS FOR EDUCATION

Technology has revolutionized the education sector, enabling students and teachers to collaborate efficiently in both physical and virtual classrooms. Digital collaboration tools enhance learning experiences by fostering communication, interaction and resource sharing.

i) Learning Management Systems (LMS)

A Learning Management System (LMS) is a software platform that facilitates the management, delivery and tracking of educational courses or training programs. It serves as a centralized hub for organizing learning materials, assessments, discussions and feedback.

Examples

- *Moodle* – An open-source LMS that allows institutions to create customized online learning environments (Dougiamas & Taylor, 2003).
- *Canvas* – A cloud-based LMS that integrates with various third-party tools and provides analytics for monitoring student progress (Johnson et al., 2016).

ii) Communication Platforms

Communication tools help students and teachers interact in real-time, facilitating discussions, announcements and instant feedback. These platforms play a vital role in online and hybrid learning models.

Examples

- *Google Classroom* – A free platform that integrates with Google Drive and Google Docs allowing teachers to distribute assignments and communicate with students (Pappas, 2015).
- *Microsoft Teams* – A collaboration tool that combines messaging, file sharing, video conferencing and integration with Microsoft Office (Schaffhauser, 2020).

iii) Collaborative Document Editing Tools

Collaborative document editing tools enable multiple users to edit, comment and share documents in real time, promoting teamwork and knowledge sharing.

Examples

- *Google Docs* – A cloud-based word processor that allows real-time collaboration, editing and commenting (Crompton et al., 2021).

➤ *Padlet* – An online digital board where students can post and share text, images, videos and links (Rashid & Asghar, 2016).

iv) Interactive Presentation Tools

Interactive presentation tools engage students by allowing them to interact with content, answer polls and participate in quizzes during lectures.

Examples

➤ *Prezi* – A cloud-based presentation tool that offers a dynamic, zoomable canvas for storytelling (Lubis et al., 2020).

➤ *Nearpod* – A platform that allows teachers to create interactive lessons with quizzes, polls and multimedia (García-Peñalvo et al., 2019).

FACILITATING COLLABORATIVE LEARNING ENVIRONMENTS

i) Strategies for Creating a Collaborative Classroom Culture

➤ *Establishing Clear Expectations* – Defining roles, responsibilities and learning objectives helps students understand how collaboration contributes to their academic growth (Johnson & Johnson, 2009).

➤ *Building a Growth Mindset* – Encouraging students to view challenges as opportunities for learning rather than obstacles enhances resilience and motivation (Dweck, 2006).

➤ *Promoting Active Participation* – Using techniques such as think-pair-share, peer discussions and debates ensures every student has a voice (Gillies, 2016).

➤ *Fostering Respect and Inclusivity* – Encouraging diverse perspectives and ensuring equal participation prevents dominance by a few individuals (Slavin, 2014).

➤ *Using Digital Collaboration Tools* – Platforms like Google Classroom, Microsoft Teams and discussion forums provide a structured space for students to engage in meaningful conversations (Hrastinski, 2009).

ii) Designing Group Activities that Leverage Digital Tools

Effective Group Activities

➤ *Collaborative Writing Assignments* – Using Google Docs, students can co-edit essays, research papers or project reports in real-time (Crompton et al., 2021).

➤ *Virtual Brainstorming Sessions* – Platforms like Padlet or Miro enable students to share ideas visually fostering creativity (Rashid & Asghar, 2016).

➤ *Peer-Reviewed Presentations* – Tools like Prezi and Nearpod allow students to create and present interactive lessons while receiving real-time feedback from peers (Lubis et al., 2020).

➤ *Online Discussion Forums* – Using Moodle or Canvas discussion boards, students can engage in structured debates, reflect on readings and share insights (Hrastinski, 2009).

➤ *Problem-Based Learning (PBL)* – Using platforms like Microsoft Teams or Trello students can collaborate on solving real-world problems breaking tasks into manageable steps (Hmelo-Silver, 2004).

iii) Encouraging Peer-to-Peer Learning and Support

Effective Peer-to-Peer Strategies

➤ *Peer Tutoring Programs* – Pairing students with different skill levels fosters mentorship and deeper understanding (Topping, 2005).

➤ *Peer Feedback on Assignments* – Using Google Docs' comment feature or Turnitin's peer review tool students can critique and improve each other's work (Nicol & Macfarlane-Dick, 2006).

➤ *Student-Led Discussions* – Platforms like Flipgrid allow students to create video discussions promoting engagement and self-expression (Green et al., 2018).

➤ *Collaborative Problem Solving* – Gamified platforms like Kahoot! and Quizlet Live encourage students to work together in answering questions and solving challenges (Wang, 2015).

ENHANCING COMMUNICATION SKILLS AMONG STUDENTS

i) Best Practices for Effective Online Communication

➤ *Use Clear and Concise Language* – Online communication should be straightforward avoiding ambiguity and unnecessary complexity (Salmon, 2013).

➤ *Maintain a Respectful Tone* – Encouraging students to use polite and professional language prevents misunderstandings and fosters a positive learning environment (Walther, 2011).

➤ *Be Mindful of Digital Etiquette (Netiquette)* – Proper formatting, appropriate greetings and avoiding all caps (which can be interpreted as shouting) enhance clarity and respect (Shea et al., 2006).

➤ *Engage Actively and Responsibly* – Students should read carefully before

responding, acknowledge previous contributions and contribute meaningfully (Hrastinski, 2009).

➤ *Use Multimedia to Enhance Communication* – Incorporating images, videos and emojis (where appropriate) makes online discussions more engaging and expressive (Green et al., 2018).

ii) Teaching Students to Provide Constructive Feedback

➤ *Use the “Sandwich Method”* – Begin with positive feedback followed by suggestions for improvement, and end with encouragement (Nicol & Macfarlane-Dick, 2006).

➤ *Encourage Specific and Actionable Feedback* – Vague comments like “Good job” should be replaced with precise observations e.g., “Your argument is strong, but consider adding more examples” (Shute, 2008).

➤ *Promote a Growth Mindset* – Encouraging students to view feedback as a tool for learning rather than criticism helps them accept and implement suggestions (Dweck, 2006).

➤ *Teach Peer Review Techniques* – Using tools like Google Docs’ comment feature or peer review rubrics in Turnitin helps students practice structured feedback (Crompton et al., 2021).

➤ *Facilitate Reflective Discussions* – Encouraging students to reflect on feedback received and make revisions promotes deeper learning (Sadler, 2010).

iii) Utilizing Discussion Boards and Forums for Engagement

➤ *Establish Clear Guidelines* – Setting expectations on response length, etiquette and participation frequency ensures productive discussions (Hew & Cheung, 2011).

➤ *Encourage Thoughtful Responses* – Open-ended questions and prompts that require critical thinking led to deeper discussions (Garrison et al., 2000).

➤ *Moderate Discussions Effectively* – Teachers should facilitate rather than dominate discussions, ensuring respectful dialogue and keeping conversations on track (Salmon, 2013).

➤ *Use Structured Peer Interactions* – Assigning students roles (e.g., discussion leader, summarizer, responder) promotes balanced participation (Hew & Cheung, 2011).

➤ *Incorporate Multimedia and Interactive Elements* – Platforms like Flipgrid and Padlet enhance engagement through videos, polls and visual discussions (Green et al., 2018).

PROJECT-BASED LEARNING AND DIGITAL COLLABORATION

i) Integrating Project-Based Learning with Digital Tools

- *Using Cloud-Based Collaboration* – Platforms like Google Workspace (Docs, Slides, Sheets) allow students to co-create documents and presentations in real-time (Crompton et al., 2021).
- *Facilitating Research and Content Curation* – Digital tools such as Padlet and Wakelet enable students to collect and organize research materials efficiently (Hernández-Ramos & De La Paz, 2009).
- *Encouraging Multimedia Project Creation* – Students can use Canva, Adobe Spark or iMovie to create engaging visual projects (Thomas, 2000).
- *Enhancing Communication with Virtual Platforms* – Microsoft Teams, Slack and Discord allow students to coordinate effectively, even in remote settings (Hrastinski, 2009).
- *Leveraging Interactive Learning Tools* – Nearpod and Kahoot! can be used to conduct formative assessments and interactive discussions during projects (Wang, 2015).

ii) Tools for Managing Group Projects and Timelines

- *Trello* – A visual task management tool using boards and cards for organizing group work (Morkel & Azila-Gbetor, 2021).
- *Asana* – Helps in setting milestones, assigning deadlines and tracking individual contributions (Boss & Krauss, 2007).
- *Microsoft Planner* – Integrates with Teams and Outlook to provide task assignments and progress tracking (Vega et al., 2020).
- *Google Keep & Calendar* – Useful for setting reminders, deadlines and team meetings (Hew & Cheung, 2011).
- *Notion* – A versatile platform combining note-taking, project management and databases for structured collaboration (Darling-Hammond et al., 2020).

iii) Assessing Collaborative Projects and Group Contributions

- *Rubrics for Project Evaluation* – Clear, structured rubrics help assess content quality, creativity and teamwork (Mosier & Fischer, 2010).
- *Peer Assessment and Feedback* – Tools like Peergrade and Google Forms allow students to evaluate each other's contributions (Nicol & Macfarlane-Dick, 2006).
- *Self-Reflection Journals* – Encouraging students to maintain reflection logs on Padlet or Notion enhances self-awareness and learning (Sadler, 2010).

➤ *Digital Badges and Gamification* – Platforms like Classcraft and Credly reward students for specific contributions motivating engagement (Wang, 2015).

➤ *Instructor Observations and Checkpoints* – Teachers can use discussion forums or periodic presentations to monitor progress (Hew & Cheung, 2011).

SUPPORTING DIVERSE LEARNING NEEDS IN DIGITAL COLLABORATION

i) Using Digital Tools to Accommodate Different Learning Styles

Digital Tools for Different Learning Styles

➤ *Visual Learners* – Benefit from infographics, videos and mind maps. Tools: Canva, MindMeister, Prezi (Mayer, 2009).

➤ *Auditory Learners* – Prefer podcasts, recorded lectures and speech-to-text tools. Tools: Anchor, Audacity, Microsoft OneNote (audio feature) (Bishop & Verleger, 2013).

➤ *Reading/Writing Learners* – Engage through blogs, online notes and discussion boards. Tools: Google Docs, Padlet, Moodle forums (Garrison & Vaughan, 2008).

➤ *Kinesthetic Learners* – Learn by interactive simulations, gamification and virtual reality. Tools: Kahoot, Nearpod, Google Expeditions (Gee, 2003).

ii) Strategies for Inclusive Collaboration in Diverse Classrooms

➤ *Universal Design for Learning (UDL)* – Digital platforms should provide multiple means of representation, engagement and expression (CAST, 2018).

➤ *Collaborative Group Work* – Tools like Google Workspace, Microsoft Teams and Slack allow students to contribute based on their strengths (Johnson & Johnson, 2009).

➤ *Differentiated Tasks* – Assigning roles based on student preferences ensures balanced participation (Tomlinson, 2014).

➤ *Asynchronous and Synchronous Collaboration* – Discussion forums, recorded lectures and real-time chat options accommodate different needs (Hrastinski, 2009).

➤ *Culturally Responsive Teaching* – Using multilingual tools like Google Translate, Rewordify and immersive reader extensions promotes inclusivity (Gay, 2018).

iii) Tools for Supporting Students with Special Needs

Assistive Technologies

- Screen Readers – NVDA, JAWS and Voice Over help visually impaired students access content (Adebisi et al., 2015).
 - Speech-to-Text & Text-to-Speech – Google Voice Typing, Microsoft Dictate, Read & Write support students with dyslexia and mobility impairments (Seok et al., 2018).
 - *Closed Captioning & Transcription* – YouTube Auto-Captions, Otter.ai and Zoom Live Transcripts benefit students with hearing impairments (Marschark et al., 2015).
 - *Adaptive Learning Platforms* – Kurzweil 3000, Learning Ally and Bookshare provide customized learning paths (Eddyburn, 2013).
 - *Gamification & Interactive Learning* – BrainPOP, Kahoot! and Proloquo2Go support engagement for students with autism and ADHD (Bölte et al., 2010).
- Assessment and Feedback in Collaborative Learning

i) Methods for Assessing Group Work and Collaboration Skills

- *Rubrics for Collaboration Skills* : Educators can use rubrics to assess communication, teamwork, problem-solving and contribution (Stein & Hurd, 2000).
- *Process-Oriented Assessments* : Reflection journals or logs encourage students to document their experiences and challenges (Kolb, 1984).
- Participation tracking through platforms like Google Classroom and Microsoft Teams helps educators monitor engagement (Swan, 2001).
- *Peer and Self-Assessments* : Students evaluate their peers' contributions and reflect on their own involvement, fostering accountability (Topping, 2009).
- *Group Presentations and Reports* : Assessing both the content quality and the collaborative process ensures a balanced evaluation (Gibbs, 2009).

ii) Tools for Peer Assessment and Self-Reflection

- *Google Forms & Microsoft Forms* – Used for anonymous peer evaluations with customizable criteria.
- *Peergrade & Feedback Fruits* – AI-powered platforms that automate peer feedback based on set rubrics (Nicol et al., 2014).
- *Padlet & Jamboard* – Students can visually reflect on their group experiences in a collaborative space (Salmon, 2000).

- *Flipgrid & VoiceThread* – Allow video/audio-based peer reflection and discussion.
- *Mentimeter & Kahoot! Surveys* – Enable quick, real-time feedback on collaboration experiences.

iii) Providing Timely and Constructive Feedback Through Digital Platforms

- Google Classroom & Microsoft Teams – Offer inline comments and audio/video feedback options.
- Turnitin Feedback Studio – Provides rubric-based grading and voice comments.
- Moodle Workshop Module – Allows structured peer review with customizable feedback criteria.
- Edmodo & Seesaw – Enable interactive and student-centered feedback loops.
- LMS Discussion Boards (Canvas, Blackboard) – Facilitate peer-to-peer feedback and instructor intervention.

TEACHER COLLABORATION AND PROFESSIONAL DEVELOPMENT

i) Using Digital Tools for Teacher Collaboration and Resource Sharing

TOOL	PURPOSE
Google Drive, One-Drive	Cloud storage for lesson plans, assessments and teaching materials.
Microsoft Teams, Slack	Real-time communication and file sharing among educators.
Trello, Asana	Organizing task management and collaborative projects.
Padlet, Wakelet	Curating and sharing educational resources and lesson ideas.
Edmodo, Schoology	Teacher communities for discussions and sharing instructional materials.
Canva for Education	Collaborative lesson and resource creation.
Flipgrid	Video-based discussions for reflective teaching practice.

ii) Online Communities of Practice for Educators

PLATFORM	DESCRIPTION
Twitter (#EdChat, #TeachSDGs)	Professional learning network (PLN) for real-time educational discussions.
Facebook Groups	Groups like "Teachers Using Tech" for peer support and resource sharing.
LinkedIn Learning & Groups	Professional networking and expert-led courses.
Google Educator Groups (GEGs)	Google-certified teacher communities for peer learning and training.
Microsoft Educator Center	Webinars, lesson plans, and collaboration tools.
EdWeb.net	Free online learning communities with live and recorded webinars.

iii) Professional Development Opportunities Focused on Digital Collaboration
Top Platforms for Digital Teacher Professional Development

PLATFORM	FEATURES
Coursera & edX	University-led courses on education technology and digital pedagogy.
Google for Education & Microsoft Learn	Certification programs for digital teaching tools.
ISTE (International Society for Technology in Education)	Workshops and courses on digital learning.
TeachThought PD	Professional development programs focused on digital teaching strategies.
KQED Teach	Free online courses on media literacy and digital collaboration.
Harvard Online Learning	Professional courses on education innovation.

CONCLUSION

In conclusion, the integration of digital tools in the teaching-learning process significantly enhances collaboration skills among students and educators. By leveraging various digital platforms, educators can create engaging and inclusive learning environments that promote effective communication, teamwork and critical thinking. The strategies outlined in this chapter, including the use of collaborative tools, structured group activities and peer-to-peer learning, provide a framework for fostering a culture of collaboration in the classroom. Furthermore, the emphasis on effective communication and constructive feedback is essential for developing students' abilities to articulate their ideas and engage in meaningful discussions. As education continues to evolve in the digital age, the ongoing professional development of educators and the use of digital tools will be crucial in preparing students for the challenges of the 21st century. Ultimately, enhancing collaboration skills through digital tools not only improves academic outcomes but also equips students with the competencies necessary for success in their future careers.

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ENTREPRENEURSHIP IN EDUCATION IN THE AI ERA

***Dr. Anbu Selvi H A**

INTRODUCTION

Entrepreneurship in education refers to the process of identifying and pursuing innovative solutions to address challenges and gaps within the education system. It involves individuals or organizations—whether startups, educational institutions, or individuals—who develop new methods, products, or services aimed at enhancing the educational experience. These entrepreneurs often combine traditional educational practices with fresh ideas, technology, and business models to create value for both students and educators.

Education is undergoing a profound transformation due to advancements in Artificial Intelligence (AI). Entrepreneurs in the education sector are leveraging AI to create innovative learning experiences, personalize education, and make learning more accessible. The AI era presents vast opportunities for educational entrepreneurs while also introducing new challenges related to ethics, accessibility, and adaptability. On one hand, AI-powered tools and platforms can enable entrepreneurs to automate tasks, analyze data, and make informed decisions. On the other hand, the increasing presence of AI in industries can disrupt traditional business models and create new uncertainties. To prepare students for this changing landscape, educators must rethink their approaches to teaching entrepreneurship and emphasize the development of entrepreneurial mindsets.

This chapter explores how AI is reshaping educational entrepreneurship, the opportunities available, the challenges faced, and the future trends in this evolving landscape.

THE NEED FOR ENTREPRENEURSHIP IN EDUCATION

• *Inadequacy of Traditional Education Models*

Traditional education models that focus solely on theoretical knowledge are no longer sufficient in the 21st century. Technological advancements, economic uncertainties, and a competitive job market require individuals who can innovate and create opportunities.

• *Skill Development for the Modern Era*

Entrepreneurship in education addresses this need by equipping students with skills such as creativity, leadership, resilience, and financial literacy.

THE ROLE OF ENTREPRENEURSHIP IN EDUCATION

i) Innovative Educational Models

Entrepreneurship drives the development of new educational models, including:

- Edtech startups
- Online learning platforms
- Alternative education systems

ii) Entrepreneurship as a Response to Educational Gaps

Entrepreneurs identify gaps in the current system and create solutions, such as:

- Coding boot camps
- Personalized learning tools
- Tutoring platforms

iii) Entrepreneurial Mindset in Educators

An entrepreneurial mindset enables educators and students to adapt to a rapidly changing world.

INNOVATIONS IN EDUCATION THROUGH ENTREPRENEURSHIP

a) Online and Hybrid Learning Models

Startups like Coursera, Khan Academy, and Duolingo offer global access to education, disrupting traditional classroom-based learning.

b) Online Courses and Tutoring

- Creating and selling personalized video courses
- Offering customized one-on-one tutoring via video conferencing tools

c) Gamification

Incorporating game elements to make learning more engaging and motivating.

d) Adaptive Learning Technologies

AI-powered platforms personalize learning experiences based on student progress.

e) Vocational and Skills-Based Education

Boot camps and online platforms provide practical, marketable skills in areas like coding and design.

SOLUTIONS ADDRESSING EDUCATIONAL CHALLENGES

i. Access and Inclusivity

Online platforms and adaptive technologies are helping bridge educational disparities.

ii. Affordability

Entrepreneurs are offering alternatives like MOOCs to reduce the cost of education.

iii) Improving Student Outcomes

Tools like personalized learning apps and AI-based tutors help enhance engagement and success rates.

iv) Educational Consulting

- Learning strategy development
- Educational coaching

v) Special Needs Education

- Customized programs for students with special needs
- Therapy and support services

vi) Corporate Training and Development

- Personalized corporate training
- Leadership coaching

vii) Micro-Schools and Learning Pods

- Personalized learning environments
- Customized curriculum design

viii) Assessment and Testing Services

- Personalized assessments
- Tailored test prep services

ix) Community and Forum Creation

- Online forums for knowledge sharing
- Local meetups and community events

THE ROLE OF AI IN EDUCATIONAL ENTREPRENEURSHIP

1. Personalized Learning

- Adaptive learning software
- Curated learning pathways

2. Automated Tutoring

AI-powered chatbots and virtual tutors support students in real time.

3. AI in Assessment and Grading

Automation reduces educators' workloads and provides faster feedback.

4. Smart Content Creation

AI tools generate quizzes, study materials, and textbooks.

5. Predictive Analytics

AI predicts student performance and identifies areas needing intervention.

METHODS TO INCORPORATE ENTREPRENEURSHIP IN THE AI ERA

- Project-based learning
- Business incubators and start-up programs
- Industry collaboration
- Entrepreneurial curriculum
- Competitions and hackathons

THE FUTURE OF ENTREPRENEURSHIP IN EDUCATION WITH AI

- *Transforming Traditional Institutions:* AI can revolutionize learning environments and educational business models.
- *Collaboration Between Entrepreneurs and Educators:* Partnerships can foster a more integrated AI-education ecosystem.
- *Lifelong Learning and Skills Development:* Entrepreneurs can facilitate continuous learning with AI-focused content.

THE ROLE OF ENTREPRENEURSHIP IN CREATING OPPORTUNITIES

Entrepreneurial ventures often emerge in response to educational inefficiencies. These ventures create products such as:

- Digital learning platforms

- Personalized tutoring services
- Learning management systems

OPPORTUNITIES FOR ENTREPRENEURS IN EDUCATION

a. EdTech Platforms

- *Online Learning Platforms:* Develop platforms like Coursera, Udemy, or niche-specific ones that target underserved subjects or demographics.
- *AI-powered Tutoring:* Create smart tutoring systems that adapt to students' learning styles and performance.
- *Gamified Learning:* Use game design principles to make learning more engaging, especially for K–12 students.

b. AI and Data-Driven Learning

- *Adaptive Learning Systems:* Build tools that use AI to personalize curriculum paths for individual learners.
- *Predictive Analytics:* Offer solutions to schools and universities to predict student performance and drop-out risks.
- *AI in Assessment:* Automate grading, feedback, and even student support services.

c. Global & Accessible Education

- *Microlearning Apps:* Design mobile-first platforms that deliver bite-sized learning, ideal for busy adults or those in developing regions.
- *Multilingual Content Creation:* Offer services to translate and localize educational content for global audiences.
- *Low-Bandwidth Solutions:* Innovate for rural and underserved areas where internet access is limited.

d. Skill-Based and Lifelong Learning

- *Upskilling and Reskilling Platforms:* Target professionals looking to stay current in rapidly evolving industries (like AI, data science, cybersecurity).
- *Corporate Learning Tools:* Develop custom training software for companies to onboard and train employees efficiently.
- *Credentialing and Micro-Certification:* Create platforms that issue verified digital badges or certificates for short-term courses.

e. Support Services for Institutions

- *Learning Management Systems (LMS)*: Innovate more user-friendly and customizable LMS options.
- *Administrative Automation*: Help schools automate HR, admissions, and communication.
- *Teacher Support Tools*: Create tools for lesson planning, classroom management, or communication with parents.

f. Alternative Education Models

- *Homeschooling Platforms*: Build ecosystems for homeschoolers, including curriculum planning, community forums, and resources.
- *Virtual & Hybrid Schools*: Launch schools that combine online and in-person instruction, leveraging flexibility.
- *Project-Based Learning Platforms*: Enable experiential, hands-on learning opportunities that better mirror real-world scenarios.

g. Content Creation & Marketplaces

- *Curriculum Development*: Provide modern, inclusive, and engaging curriculum content aligned with national standards.
- *Marketplace for Educators*: Let teachers sell lesson plans, teaching aids, and resources (e.g., Teachers Pay Teachers).
- *AI Content Assistants*: Tools that help educators quickly create quizzes, assignments, or slide decks.

h. AI Technologies in Education

- *Adaptive Learning Platforms*: These platforms use AI algorithms to tailor educational content to a student's learning pace and style, ensuring more effective understanding and retention.
- *AI-Powered Tutoring*: Virtual tutors and chatbots provide real-time assistance, helping students grasp complex concepts without waiting for human intervention.
- *Content Generation*: AI tools create quizzes, summaries, study guides, and even textbooks, saving time and enhancing instructional materials.
- *Administrative Automation*: AI streamlines processes such as grading, scheduling, and student record management, allowing educators to focus more on teaching.

i. Personalization and Scalability

- *Customized Learning:* AI tailors educational experiences to individual students by analyzing performance data and adjusting lesson plans accordingly.
- *Global Reach:* AI-driven tools can deliver quality education to large audiences across different geographies, bridging educational gaps worldwide.

j. Enhancing Teacher Roles

- *Support Tools:* AI helps educators identify learning challenges early and provide targeted support to students.
- *Efficiency in Grading and Feedback:* Automated grading tools reduce administrative workloads and enable timely feedback.
- *Professional Development:* AI platforms can also support teacher training by offering personalized learning paths and analytics-driven insights into instructional effectiveness

AI AND ITS IMPACT ON EDUCATION

Artificial Intelligence (AI) is transforming the education landscape by introducing new tools, platforms, and methodologies that personalize learning, improve accessibility, and enhance educational outcomes. This section explores the diverse technologies AI brings into education and their impact on teaching, learning, and administration.

- *AI Technologies in Education:* Includes adaptive learning, AI tutors, content creation, and admin automation.
- *Personalization and Scalability:* AI customizes learning and expands educational access globally.
- *Enhancing Teacher Roles:* AI supports teachers by reducing administrative tasks and aiding instructional design

ENTREPRENEURSHIP IN THE AI-DRIVEN EDUCATION LANDSCAPE

- *Opportunities for Entrepreneurs:* Developing AI products, integration services, and professional development platforms.
- *Disruption and New Business Models:* AI is shifting education toward online ecosystems and subscription services.
- *AI in Teacher Training and Support:* Platforms to train educators using AI-driven feedback and analytics.

STRATEGIES FOR STUDENTS, EDUCATORS, AND INSTITUTIONS

Students: Entrepreneurship courses, incubators, business plan competitions, internships

i) For Students: Future-Ready Innovators

- *AI-Powered Learning Projects*

Build AI-based apps, bots, or models that solve real educational challenges (e.g., language learning, exam prep).

Use platforms like Kaggle or Google Teachable Machine to experiment and innovate.

- *Peer-to-Peer Learning Startups*

Launch collaborative learning platforms or tutoring apps that use AI to match mentors and mentees.

- *Freelance Content Creation*

Use generative AI tools to create and sell study materials, explainer videos, or micro-courses online (e.g., via YouTube, Notion, or Gumroad).

- *AI in Career Guidance*

Develop platforms that analyze academic and personality traits to suggest personalized career or education paths.

ii) For Educators: Entrepreneurship programs, curriculum development, mentorship

- *AI-Enhanced Content Creation*

Use AI tools (like ChatGPT, Canva Magic Write, or Tome AI) to build interactive lessons, quizzes, and presentations quickly.

- *Monetizing Digital Pedagogy*

- *Launch niche online academies, personalized tutoring apps, or sell courses on platforms like Unacademy, Udemy, or Skillshare.*

- *Classroom Analytics & Personalization*

Use AI to track student performance, predict at-risk learners, and tailor instructional strategies.

- *Teacherpreneur Communities*

Start communities where educators co-create AI-driven resources or collaborate on education startups.

iii) For Institutions: AI Curriculum Integration

- *Design and offer AI literacy courses across all disciplines (not just computer science), starting as early as K-12.*
- *Smart Campus Solutions:* Implement AI for automated attendance, scheduling, exam proctoring, and student services chatbots.
- *Startup Incubation Hubs:* Launch incubation centers on campus that support student and faculty-led EdTech ventures—offer mentorship, seed funding, and tech tools.
- *4Policy and Ethics Leadership:* Lead the development of ethical AI guidelines in education and champion responsible data use practices.

BENEFITS OF ENTREPRENEURSHIP IN EDUCATION

- Develops entrepreneurial mindset
- Prepares students for a dynamic economy
- Enhances employability
- Fosters innovation and economic growth

CHALLENGES IN IMPLEMENTING ENTREPRENEURSHIP IN EDUCATION

- Data privacy and security concerns
- AI bias and equity issues
- Digital divide
- Lack of trained educators
- Limited funding
- Resistance to change
- Policy gaps
- Balancing entrepreneurship and academics

CONCLUSION

Entrepreneurship in education plays a vital role in modernizing the education system. Entrepreneurs identify gaps, introduce innovations, and enhance learning access and quality. As AI reshapes industries, education must evolve to prepare learners with the necessary skills and mindsets to thrive in an uncertain future. Merging educational goals with entrepreneurial innovation will be key to success in the AI era.

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GAMIFICATION IN EDUCATION: LEARNING THROUGH PLAY, PROS AND CONS

***Dr. T. Ponmalini,**

INTRODUCTION

Gamification in education has emerged as an innovative approach to enhance student engagement, motivation, and learning outcomes by incorporating game design elements in non-game contexts. This chapter explores the role of gamification in education, its benefits, and the potential drawbacks associated with its implementation. The study examines various gamification strategies, such as point systems, leaderboards, badges, and interactive challenges, that contribute to a more dynamic learning environment. While gamification has been shown to improve motivation and retention, it also poses challenges, including the risk of extrinsic motivation overshadowing intrinsic learning, accessibility issues, and potential dependency on rewards.

Gamification is the application of game-like elements in non-gaming contexts, particularly in education, to foster engagement and enhance learning. With advancements in technology, educational institutions have increasingly adopted gamification techniques to make learning more interactive and effective. By leveraging game mechanics such as points, challenges, leaderboards, and storytelling, educators can create immersive learning experiences.

LEARNING THROUGH PLAY

Learning through play is a fundamental concept in education that emphasizes exploration, creativity, and engagement. By incorporating elements of play into the learning process, students develop cognitive, social, and emotional skills in a natural and enjoyable way.

BENEFITS OF LEARNING THROUGH PLAY

- i. Increased Engagement: Playful learning environments encourage active participation and curiosity.
- ii. Enhanced Problem-Solving Skills: Games and playful activities challenge students to think critically and solve problems.
- iii. Social Development: Collaborative play helps students improve communication and teamwork skills.

- iv. Emotional Well-Being: Enjoyable learning experiences reduce stress and anxiety, promoting a positive attitude toward education.
- v. Intrinsic Motivation: Play-based learning fosters a love for learning by making education enjoyable and rewarding.

TYPES OF PLAY IN EDUCATION

- 1. Exploratory Play:** Encourages students to discover and experiment with new concepts.
- 2. Constructive Play:** Involves hands-on activities such as building, designing, and creating projects.
- 3. Fantasy Play:** Utilizes storytelling and role-playing to enhance engagement and creativity.
- 4. Competitive Play:** Incorporates healthy competition through leaderboards and challenges to motivate learners.
- 5. Cooperative Play:** Focuses on teamwork and collaboration to achieve common learning goals.

THE ROLE OF PLAY IN COGNITIVE DEVELOPMENT

Research in cognitive psychology suggests that play is essential for brain development, fostering neural connections that improve memory, critical thinking, and adaptability. Play-based learning aligns with constructivist theories, where students actively construct knowledge through experience and interaction.

EVOLUTION OF GAMIFICATION IN EDUCATION

The concept of gamification has evolved over time, influenced by technological advancements, psychological research, and educational needs. Understanding its progression provides valuable insights into its current and future applications.

i. Early Educational Games

The integration of games in education can be traced back to board games and structured play activities used in traditional learning environments. The early 20th century saw the introduction of educational games designed to reinforce concepts in subjects such as math and language.

ii. Digital and Video Game Influence (1980s-1990s)

With the rise of computers and video games in the 1980s and 1990s,

educational software such as “Reader Rabbit” and “Math Blaster” introduced interactive and engaging learning methods. These early digital learning tools laid the groundwork for modern gamification strategies.

iii. Internet and Online Learning (2000s)

The advent of the internet and e-learning platforms in the 2000s enabled educators to incorporate more complex gamified elements, such as online quizzes, reward systems, and virtual learning environments. Platforms like Moodle and Blackboard began integrating game-like elements to enhance student participation.

iv. Modern Gamification (2010s-Present)

With the advancement of mobile technology and AI, contemporary gamification techniques now incorporate adaptive learning, real-time feedback, and immersive experiences using virtual and augmented reality. Platforms like Duolingo, Kahoot!, and Classcraft exemplify the effectiveness of gamification in modern education.

THEORETICAL FOUNDATIONS OF GAMIFICATION IN EDUCATION

Gamification in education is grounded in various psychological and educational theories, including:

a) Self-Determination Theory (SDT) : This theory suggests that autonomy, competence, and relatedness drive motivation, which gamification can enhance through well-designed learning activities. Students feel more in control of their learning and develop a sense of mastery when engaged in gamified environments.

b) Constructivist Learning Theory : This theory supports the idea that learners actively construct knowledge through meaningful engagement, often facilitated by gamified elements. Interactive activities help students relate new knowledge to existing schemas, leading to deeper learning.

c) Flow Theory : Flow theory highlights how gamification can help learners enter a state of deep engagement, leading to improved concentration and knowledge retention. A well-balanced challenge ensures that students remain engaged without feeling overwhelmed or bored.

d) Behaviourist Theory : Behaviourist principles such as reinforcement and rewards are often embedded in gamification to encourage positive learning behaviours. Points, badges, and leaderboards act as reinforcers that shape student behaviour over time.

GAMIFICATION STRATEGIES IN EDUCATION

Several strategies are commonly used in educational gamification:

1. *Points and Badges System*: Assigning points and badges for completing tasks or achieving milestones provides instant feedback and motivation.
2. *Leaderboards* : Leaderboards encourage healthy competition among students, pushing them to perform better while fostering engagement.
3. *Challenges and Quests* : Designing educational content as quests makes learning more goal-oriented and structured, increasing student motivation.
4. *Storytelling* : Incorporating narratives into lessons can make learning experiences more immersive, helping students relate to and remember the material.
5. *Adaptive Learning* : Gamification can personalize learning by adapting difficulty levels based on student performance, ensuring an optimal challenge level.
6. *Rewards and Unlockables* : Progressive rewards such as unlocking new levels, badges, or digital content keep learners engaged and striving for new achievements.

CASE STUDIES OF GAMIFICATION IN EDUCATION

Case Study 1: Duolingo

Duolingo has successfully gamified language learning by using points, streaks, and rewards to encourage continued engagement. Research shows that learners using Duolingo demonstrate higher retention rates compared to traditional methods.

Case Study 2: Kahoot!

Kahoot! has transformed classroom assessments by incorporating real-time gamified quizzes. Students respond positively to instant feedback, competitive play, and interactive learning.

Case Study 3: Minecraft Education Edition

This platform allows students to collaborate, problem-solve, and explore subjects such as math, history, and science in a gamified virtual environment.

Case Study 4: Classcraft

Classcraft turns the classroom into a role-playing game where students earn experience points (XP) for positive behaviors and academic achievements. Teachers have reported increased student participation and improved discipline.

PROS OF GAMIFICATION IN EDUCATION

Gamification offers several advantages in educational settings, including:

1. *Enhanced Motivation and Engagement:* Game-like elements encourage students to participate actively and enjoy the learning process.
1. *Improved Knowledge Retention:* Interactive and reward-based learning promotes better recall and understanding of concepts.
1. *Encouragement of Healthy Competition:* Leaderboards and challenges stimulate students to improve their performance.
1. *Personalized Learning Paths:* Adaptive gamification allows students to learn at their own pace and level.
1. *Development of Critical Thinking and Problem-Solving Skills:* Many gamification strategies involve challenges that require analytical thinking and decision-making.
1. *Instant Feedback:* Gamification enables immediate feedback, allowing students to understand mistakes and correct them promptly.
1. *Collaboration and Social Learning:* Multiplayer or team-based gamification fosters teamwork and cooperative learning.
1. *Reduced Fear of Failure:* Gamification allows students to take risks and learn from mistakes without the pressure of traditional grading.

CONS OF GAMIFICATION IN EDUCATION

While gamification offers several benefits, it is not without challenges and criticisms:

1. *Overemphasis on Extrinsic Rewards:* Over-reliance on points and rewards can diminish intrinsic motivation.
1. *Accessibility Issues:* Not all students have equal access to digital tools required for gamified learning.
1. *Game Fatigue:* Overuse of gamification can lead to disengagement if students become accustomed to rewards.
1. *Increased Screen Time:* Digital gamification may contribute to excessive screen exposure, raising concerns about health and well-being.
1. *Implementation Complexity:* Designing effective gamified learning experiences requires careful planning and resources.

FUTURE OF GAMIFICATION IN EDUCATION

As technology continues to evolve, gamification is expected to

become more immersive and personalized. The integration of artificial intelligence, virtual reality, and adaptive learning platforms will enhance engagement and educational outcomes. Future research should focus on long-term effectiveness, accessibility, and ethical considerations of gamification in diverse learning environments.

APPLICATIONS OF GAMIFICATION IN DIFFERENT EDUCATIONAL SETTINGS

i. Gamification in Primary and Secondary Education

Gamification has proven effective in early education by increasing student participation and making learning fun. Interactive applications and classroom games enhance foundational literacy and numeracy skills.

ii. Gamification in Higher Education

In universities and colleges, gamification is used to enhance student engagement in complex subjects such as mathematics, science, and language learning. Platforms like Coursera and EdX implement gamified elements to improve student motivation.

iii. Gamification in Corporate Training

Gamification is widely used in employee training and professional development. Organizations integrate gamified learning tools to improve skill acquisition, performance tracking, and engagement.

PEDAGOGICAL APPLICATIONS:

a) Gamification in STEM Education:

- ✓ Using games to teach complex scientific and mathematical concepts.
- ✓ Simulations and virtual labs.

b) Gamification in Language Learning:

- ✓ Using games to improve vocabulary, grammar, and pronunciation.
- ✓ Interactive storytelling and role-playing.

c) Gamification in Social Studies and Humanities:

- ✓ Using games to teach history, geography, and social issues.
- ✓ Role-playing historical events and simulations.

d) Gamification for Special Education:

- ✓ Tailoring gamified experiences to meet the needs of diverse learners.
- ✓ Using games to improve cognitive and social skills.

e) Gamification in Higher Education:

- ✓ Applying gamification to university level courses.
- ✓ Professional training applications.

f) Gamification in K-12 education:

- ✓ How gamification is used in primary and secondary schools.
- ✓ Age-appropriate gamification.

IMPLEMENTATION AND DESIGN:

1. Designing Effective Gamified Learning Experiences:

- Balancing game mechanics with learning objectives.
- Creating engaging and meaningful experiences.

2. The Role of Teachers in Gamified Learning:

- Facilitating and guiding gamified activities.
- Providing feedback and support.

3. Technology and Tools for Gamification:

- Learning management systems (LMS) with gamification features.
- Educational game development tools.

4. Assessment in Gamified Environments:

- Measuring learning outcomes in gamified activities.
- Using game data to track student progress.

5. Ethical Considerations:

- Ensuring equitable access to gamified learning.
- Addressing potential issues of competition and stress.
- Data privacy.

6. Player Psychology:

- Understanding what motivates different types of players.
- Using psychological principles to enhance engagement.

CONCLUSION

Gamification in education presents a compelling approach to making learning more engaging and effective. While it offers numerous benefits, careful implementation is necessary to avoid pitfalls such as over-reliance on rewards and accessibility issues. By adopting well-designed gamification strategies, educators can harness the power of play to enhance student learning and motivation.

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IMPRESSIONS OF OPEN EDUCATIONAL RESOURCES (OER) IN GLOBAL LEARNING

***Dr. E. Karthikeyan**

INTRODUCTION

Open educational resources (OER) have rapidly and also immeasurably transformed the education system from traditional classroom to digital platforms. Books are replaced with publicly licensed, freely accessible e-resources that support education. OER's primary function in the research sector is to assist researchers by supplying the data that is already accessible. The widespread implications of OER also discarded the knowledge and research gap. The media forms of OER are text, images, audio, video, animation, quizzes, games, software and online platforms. Many of these formats are in the public domain or are distributed through an open license. OER are flexibly designed to customise according to the educational needs and cognitive abilities of the learners. OER have democratised education to make it inclusive and accessible for the digital natives to make learning happen in a global perspective. Additionally, the affordability and collaborative nature of OER have enhanced the quality and sustainability. Examination of both the opportunities and challenges of OER adaptation, consideration of the diverse perspective from educators, learners and policymakers explores the impressions of OER in global learning. The reflection on the impact of OER provides an insight into its potential to reshape the education process in this dynamic tech era.

DEFINITION OF THE TERMS

Globalization refers to the “reality shaped by an increasingly integrated world economy, new information and communications technology, the emergence of an international knowledge network, the role of the English language, and other forces beyond the control of academic institutions” - Altbach, Reisberg, & Rumbley, 2009.

Internationalisation is defined as “the variety of policies and programs that universities and governments implement to respond to globalization” - Altbach, et al., 2009.

Learning is defined as “the activity or process of gaining knowledge or skill by studying, practicing, being taught, or experiencing something” - Merriam Webster Dictionary, 2017.

Global learning is a process that prepares students for active and collaborative learning through engagement with diversity and focuses on complex problems that transcend borders.-Landorf, H. Doscher, S. & Hardrick, J., 2018.

IMPRESSION IS AN IMPRINT, EITHER IN ONE’S MIND OR ON AN OBJECT.

Open Educational Resources (OER) as “... learning, teaching and research materials in any format and medium that reside in the public domain or are under copyright that have been released under an open license, that permit no-cost access, re-use, re-purpose, adaptation and redistribution by others.” - 2002 conference, UNESCO.

OBJECTIVES OF GLOBAL LEARNING

The objectives of global learning are to help students develop a greater grasp of global concerns, cultures, and viewpoints in order to prepare them to interact with the world in an integrated way. These are a few of the main goals of global learning:

- ***Encourage Global Citizenship:*** Motivate children to understand their roles in tackling global issues including social injustice, climate change, and human rights.
- ***Foster Cultural Sensitivity and Awareness:*** Assist students in gaining an appreciation for and knowledge of many cultures, languages, customs, and worldviews. By encouraging empathy, this goal lessens bias and fosters inclusion.
- ***Develop The Ability to Think Critically and Solve Problems:*** Give pupils the tools they need to evaluate and resolve challenging global issues. This involves analysing problems from several angles and coming up with creative, workable solutions.
- ***Promote Intercultural Communication:*** Help students learn how to interact politely and successfully with people from other cultural backgrounds using digital platforms as well as verbal and nonverbal communication.
- ***Foster Global Awareness:*** Make certain that kids are aware of important global concerns, including human rights, environmental sustainability, migration, economic inequality, and violence. Making wise decisions in

both local and global situations is made possible by this insight.

- ***Prepare Students for a Global Workforce:*** Develop abilities including teamwork, flexibility, and knowledge of various work settings and international markets to equip students to operate in a globalised economy.
- ***Encourage Social Responsibility and Sustainable Development:*** Motivate students to consider sustainability from economic, social, and environmental viewpoints. Encourage a sense of accountability for creating a more sustainable and just future.
- ***Develop Empathy and sympathy:*** Encourage students to take action on global concerns and cultivate empathy for individuals in other areas of the globe, fostering sympathy with those who are enduring hardship.
- ***Promote Collaborative Learning and Partnerships:*** Whether through project-based learning, online platforms, or exchange programs, provide students the chance to work together with classmates from other nations or cultures.
- ***Include Global viewpoints in the Curriculum:*** Make sure students comprehend how their local environment fits into the larger global picture by including global viewpoints into all subject areas, including science, literature, history, and economics.
- ***Boost Digital and Technological Literacy:*** Equip students to use and understand digital tools and resources that facilitate study, worldwide communication, and engagement in a digital environment.
- ***Instill a Lifelong Commitment to Learning:*** To cultivate curiosity and a persistent drive to comprehend and interact with the world, encourage students to study about global challenges throughout their lives.

These goals seek to provide students the attitudes and abilities necessary to make a good impact on the world and to be engaged, knowledgeable, and moral members of the international community in addition to providing them with information about global concerns.

ASPECTS OF GLOBAL LEARNING

- ***Cultural Sensitivity and Awareness:*** Teaching pupils to value and comprehend various cultures, customs, and viewpoints. It promotes open-mindedness and empathy in a multicultural society.
- ***Global Citizenship:*** Encouraging accountability and proactive involvement in global concerns, including social justice, environmental sustainability, and human rights. It challenges students to consider their obligations and roles as global citizens critically.

- ***Critical Thinking and Problem Solving:*** Motivating pupils to examine global issues, comprehend their intricacies, and come up with innovative solutions. It enables students to approach issues from several angles and come to well-informed conclusions.
- ***Intercultural Communication:*** Helping students learn how to communicate successfully across cultural borders using media, language, or face-to-face interactions. In today's globalised environment, this ability is crucial for teamwork.
- ***Global Awareness:*** Making sure that pupils are aware of important global concerns including migration, economic inequality, climate change, and global health. It enables pupils to relate local deeds to more general global results.
- ***Collaboration and Global Networking:*** By means of international collaborations, internet platforms, or exchange programs, students are frequently encouraged to collaborate with peers from diverse cultural backgrounds both domestically and abroad.
- ***International Views on Educational Materials:*** incorporating viewpoints and concerns from throughout the world into all subject areas—not just social studies and geography. Examining world literature, history, economics, and science is part of this.
- ***Technological Competence:*** Assisting students in acquiring digital literacy and the capacity to interact with information from across the world, interact with a variety of audiences, and access learning materials from around the globe.
- ***Sustainability and Social Responsibility:*** Helping students become advocates for a more sustainable and equitable future by guiding them to investigate the environmental, economic, and social facets of sustainability.
- ***Empathy and Global Solidarity:*** Encouraging compassion and empathy by advancing an ethical and emotional comprehension of the difficulties that people throughout the world confront.

Through the integration of these components, global learning equips students to be knowledgeable, moral, and productive members of a world that is linked and complicated. It involves more than simply learning; it also entails cultivating the mind-set and abilities necessary to effectively address global issues.

OPEN EDUCATIONAL RESOURCES

CONCEPT OF OER

Open Educational Resources come in a variety of media, including text, images, audio, video, animation, quizzes, games, software, and more. Some of these formats are in the public domain or are distributed under an open license. The amount of digitally accessible information on the internet that comes from OER is expanding at a tremendous rate. There are some aspects that need to be explored further, such as how learners perceive open educational resources (OERs), their advantages for the learning community, and their effects on their own learning, even though the paper tries to examine the origins and development of OERs, touching on topics like their definitions, types, and benefits. Additionally, systematic studies may be conducted to examine the usage of OERs in research, teaching, and learning.

Open Educational Resources (OER) are teaching and learning resources, including course materials, multimedia learning modules, textbooks, lectures, presentations, syllabi, and assessments, that are freely accessible and licensed so that others can reuse, redistribute, revise, remix, and keep them without further consent from the copyright holder. Open Educational Resources (OER) can expand access to education and has been demonstrated to improve student learning while removing obstacles related to affordability and accessibility. Faculty may instantly involve students in the learning process by creating an atmosphere that is made possible by OER. One of the main non-monetary advantages of open educational resources (OER) is that it makes academic information available from the first day of classes.

SCOPE OF OER

Digital information that is freely accessible online, unrestricted by copyright or license restrictions, and free for lifelong learning is known as open educational resources, or OER. The modern world demands that everything be at one's fingertips due to the speed at which technology is developing. Additionally, learners are demanding independent, self-paced learning experiences. Newer opportunities for alternative routes of knowledge and information sharing have been made possible by these innovations. Additionally, effective resource sharing is crucial for a healthy future as new information is created. OER is therefore regarded as one of the most crucial channels for information exchange, education, and learning. Both teachers and students need access to pertinent educational literature in order to investigate,

comprehend, and broaden their current areas of expertise. Networking across other industries, examining current work, and sharing and connecting ideas are all ways to learn new things. Any restriction on access to knowledge slows down the acquisition of new knowledge and ideas.

DEFINITION OF OER

David Wiley defines the terms “open content” and “open educational resources” as any copyrightable work (traditionally excluding software, which is described by other terms like “open source”) that is either (1) in the public domain OR (2) licensed in a manner that provides users with free and perpetual permission to engage in the 5R activities:

1. *Retain* - the right to make, own, and control copies of the content (e.g., download, duplicate, store, and manage)
2. *Re-use* - right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video)
3. *Revise* - the right to adapt, adjust, modify, or alter the content itself (e.g., translate the content into another language)
4. *Remix* - the right to combine the original or revised content with other material to create something new (e.g., incorporate the content into a mashup)
5. *Redistribute* - the right to share copies of the original content, your revisions or remixes with others (e.g., give a copy of the content to a friend) (Wiley, n.d.)

VARIETY AND FORMS OF OER

Open Educational Resources come in a variety of formats and forms, including open courseware, open access journals, open access books, open access repositories, preprints, open access theses and dissertations, open textbooks, digital learning, and more.

Some of the popular OERs are: DOAJ, eGyanKosh, ePG-Pathshala, KOER, Lumen Learning, MIT Courseware, NPTEL, OER Commons, Open Michigan, OpenDOAD, OpenLearn, Openverse, Shodhganga – INFLIBNET Cnetre, Vidya-Mitra, Wikipedia and Open Textbook Library.

OTHER FORMS OF E-RESOURCE PLATFORMS

- Fulltext E-Database
- E-Books

- Digital Libraries
- Institutional Digital Responsibilities
- Open-Access Preprints Repositories
- Open Access Thesis & Dissertations Portals
- Reports & Publications
- Other Online E-Resources
- E-Learning Platforms
- Research Profile Platforms
- Bibliometrics Analytical Tools

KEY OPEN EDUCATIONAL RESOURCES INITIATIVES IN INDIA

1. **The National Digital Library of India (NDLI)** provides the learning community with a search and browsing tool for open learning resources. In May 2016, the National Digital Library of India was opened. The Indian Institute of Technology Kharagpur created, hosted, and updated it. The Ministry of Education, Government of India, oversees it as a mentor and sponsor through the **National Mission on Education through Information and Communication Technology (NME-ICT)**.

2. The Indian Institute of Science Bangalore and seven Indian Institutes of Technology—Bombay, Delhi, Kanpur, Kharagpur, Madras, Guwahati, and Roorkee—launched the **National Programme on Technology Enhanced Learning (NPTEL)** in 2003. Civil, computer science, electrical, electronic, communication, and mechanical are the five fundamental engineering disciplines that are covered in its 235 online and video courses. 600 more websites and videos were added in phase II between 2019 and 2014 for undergraduate and graduate courses in all major engineering, physical science, and management fields.

3. The Government of India launched **SWAYAM**, a free online learning initiative. The courses are available in video formats, and there are online discussion groups, quizzes, assessments, and downloaded reading materials. Courses from class 9 to postgraduate level are open to anybody, anywhere, at any time.

4. **SWAYAM Prabha** is a free DTH channel dedicated to education. It uses a GSAT-15 satellite to broadcast 34 DTH channels that only offer high-

quality educational programming around-the-clock. Higher and school-level education are covered by the DTH channels. Swayam Prabha receives its content from NPTEL, IITs, CEC, IGNOU, NIOS, NCERT, and UGC sources. The website run by the INFLIBNET Centre in Gandhinagar and these channels are uplinked by BISAG in Gandhinagar.

5. There are several Indian theses in **ShodhGanga**. It is an open-access digital repository of Indian Electronic Theses & Dissertations, administered by the **INFLIBNET** Centre in Gujarat, and contains full-text collections of M.Phil. and PhD theses. The NISCR-NISCAIR Online Periodicals Repository (NOPR) contains full-text articles from 19 research publications. The New Delhi-based CSIR-NISCAIR created and maintains this open access repository.

6. A platform called **Open Government Data (OGD)** Platform India was created by the Indian government to facilitate Open Data initiatives. The US government and the Indian government collaborated to create this platform. The portal is designed to help government ministries and departments make their data, papers, services, tools, and applications available to the public.

7. The Ministry of Education, Government of India, through the National Mission of Education through Information and Communication Technology (NME-ICT), funds the web-based **Vidya-Mitra Integrated e-Content Portal** (A gateway to all learners), which was created by INFLIBNET Centre. This portal offers learners the ability to search and explore through a single interface that contains textual, multimedia, and audio/video learning materials.

IMPACT OF OER DURING THE COVID-19

Teaching and learning have seen significant changes since the COVID-19 epidemic. In order to comply with social distancing regulations during COVID-19, many higher education institutions switched from traditional classroom-based instruction to online learning. This gave researchers the chance to investigate how this change affected students' perceptions of OER's value. The COVID-19 epidemic increased demand for high-quality, adaptable, free, and inexpensive educational resources made with distance learning in mind.

In the COVID-19 learning environment, OER had the following benefits over traditional textbooks:

- ***It was compatible with remote instruction:*** Nearly all OER is digital in nature, and may be found for free online or at a little cost in print. A large portion of OER is pre-loaded in a format that works with the most popular learning management systems.

- ***Flexible:*** Teachers can modify OER as they modify their courses to accommodate remote instruction, unlike traditional textbooks that are copyright-protected.
- ***Always available:*** Students are more likely than ever to take longer to finish their degree routes because of the economic burden and possibly lengthy duration of COVID-19. They will persevere if they can consult the content from required courses months or years later.
- ***A wise financial decision:*** Both students and universities are currently facing restricted resources. One of the few strategies that saves students money and increases institutional income is the use of open educational resources (OER).

OERs OFFER THE FOLLOWING BENEFITS

- ***Affordability:*** OERs make the contents available online for free, reasonably priced to print, and permanently achievable.
- ***The availability:*** of high-quality resources.
- **Better instruction and learning:** There is no limit to how technology can enhance education. Teachers, students, and institutions may all fully exploit this potential thanks to open education.
- ***Adaptability:*** More flexibility in the classroom is made possible with OER. \
- ***Social justice and inclusion:*** OER promotes a more welcoming learning environment, particularly at establishments that aim for social justice and serve a variety of demographics.
- ***Greater accessibility to education:*** Students can access open educational resources (OERs) at any time and on multiple occasions from any location in the world.
- ***Scalability:*** OERs may be broadly disseminated at little or no expense.
- ***Improvement of the course materials:*** When there are clear knowledge gaps in textbooks and lectures, OERs can be used to fill them.
- ***Improvement of the standard course material:*** For instance, text can be accompanied by multimedia content like movies. Students may learn the subject more readily if it is presented in a variety of forms.
- ***Rapid circulation:*** In contrast to knowledge published in textbooks or journals, which might take months or even years to become available, information can spread quickly. Rapid content availability might improve the presentation's timeliness and/or relevancy.

- ***Displaying creativity and skill:*** Faculty research interests and skills may be made public. Recruitment efforts for teachers and students may be improved, and prospective donors and students may be pleased.
- ***Connections for former students:*** OERs give alumni a great opportunity to maintain ties to the school and pursue a lifetime learning program.
- ***Resources that are continuously enhanced:*** In contrast to textbooks and other static information sources, open educational resources (OERs) may be rapidly enhanced by users directly changing them or by asking for and incorporating user comments. An existing OER can be adjusted for a class by instructors, who can then make the updated OER accessible to others.

IMPRESSIONS OF OER ON GLOBAL LEARNING

OER is revolutionising education and ought to play a significant role in on-going discussions about student learning on campus. Realising the full potential of open educational resources (OER) requires faculty engagement, professional development investments, and well-defined policies. Institutions may provide a more accessible, inclusive, and equitable learning environment for all students by merging these initiatives with thorough research on OER's efficacy and incorporating them into current systems.

Significant obstacles have been established, particularly for students' achievement in higher education, by the growing expense of traditional instructional resources, notably textbooks. Open Educational Resources (OER) have emerged as a viable substitute as educational institutions and instructors look for creative ways to lower these obstacles. Open Educational Resources (OERs) are publicly available, openly licensed resources that can be utilised for research, education, and learning. They cover a broad spectrum of resources, such as course materials, multimedia, textbooks, and other educational content, all of which are made to be flexible and adaptive to different learning requirements.

The broader open-access movement and educational equality serve as the foundation for the OER idea. This program helps reach students who cannot afford costly educational resources by providing them with free internet resources. This is especially crucial now as one of the biggest obstacles to student success rates is the price of textbooks and other educational resources. Studies have shown that using open educational resources (OER) improves student outcomes, such as grades, dropout rates, and engagement with the course contents. These benefits can be attributed to several factors, including the ability to reframe and restructure the OER to fit the specific goal driven needs of the learners.

IMPACT OF OER ON THE PERFORMANCES OF THE STUDENTS

Academic Performance

The impact of OER on academic achievements has been the subject of several researches, many of which have measured variables like grades or test scores. The capacity of OER to be customised to particular course material and student needs is responsible for the increase in academic accomplishment. By modifying and adapting OER to better fit their teaching goals, educators may create a more productive learning environment. This adaptability guarantees that the resources are interesting and pertinent, which helps improve comprehension and memory of the course information.

Course Completion Rates

OER has been linked to both academic performance and higher course completion rates, according to studies. Because they are not burdened with expensive textbooks, kids are less likely to drop out of school owing to financial strain. Having open educational resources (OER) available from the start of the course would guarantee that every student has instant access to the resources they need, preventing any learning delays. This instant access is incredibly beneficial, particularly for students who may otherwise struggle to pay for books or put them off until later in the semester.

Participation of Students

Additionally, OER has shown some promising outcomes in terms of student involvement and performance. The interactive feature of many OERs, which typically include multimedia elements, may make the learning process engaging and appealing to students. They may participate more in class activities and discussions as a result of this increased participation, which would deepen their understanding of the material. Students' involvement is increased when they have access to and engage with a variety of resources, including interactive simulations, films, and quizzes.

FINANCIAL IMPACT AND COST SAVINGS OF OER

Savings for Students

The cost of textbook purchases is a well-known problem in higher education. This price may be too high, particularly for kids from low-income families, and some may decide not to buy the necessary supplies at all, which will have a detrimental effect on their academic achievement.

By offering inexpensive or free substitutes for pricey textbooks, OER provides a remedy. Over the course of a student's academic career, these savings may mount up considerably, relieving financial pressure and freeing up funds for other necessities like tuition, housing, and meals.

Wider Effects on Institutions' Financial Situation

The use of OER may have significant financial ramifications for educational institutions generally in addition to assisting students in reducing their expenses. When OER is included into curriculum, students are less likely to require loans or financial help to cover the cost of textbooks. As a result, students will have less debt because of higher retention and graduation rates.

Similarly, more students are likely to enrol in these courses in schools that use Open Education Resources (OER). Students are frequently quite tempted to use free or inexpensive course materials, especially when they are struggling financially. This helps institutions because as income rises, so does course completion.

OER has also shown promise in closing the educational equality gap, something that expensive textbooks do not do since they discriminate against students from underprivileged backgrounds, which also face a number of additional obstacles to academic success. Therefore, OER aims to level the playing field by making educational resources freely available and accessible so that all students, regardless of their financial situation, have access to the tools they need to succeed.

OER'S PEDAGOGICAL ADVANTAGES

Encouragement of Creative Teaching Methods

OER's adaptability enables teachers to create learning materials that are tailored to the individual requirements and course goals of their students. OER may be modified, remixed, and reorganised to accommodate various teaching philosophies and learning preferences, in contrast to textbooks, which are frequently inflexible and unalterable. This adaptability enables teachers to try out cutting-edge teaching strategies like problem-based learning, flipped classrooms, and individualised instruction.

In a flipped classroom paradigm, for instance, students can watch films, read books, or complete interactive modules ahead of time. This enables the teacher to include the students in activities like group projects, debates, and practical sessions. This shift in teaching methods improves the learning

process and aids students in gaining a deeper comprehension of the material covered.

OER's versatility ensures that information may be readily updated in the event of student feedback or new advances in one's area. This indicates that the educational materials are constantly current, which is essential, particularly in fields that are developing quickly.

Encouragement of Teachers' Cooperation and Sharing

Additionally, OER fosters a culture of collaboration among educators. By freely licensing resources to allow for the free exchange of ideas, materials, and instructional strategies, educators support the global community of practices. In addition to improving the calibre of educational resources, the sharing culture fosters creative learning and professional development.

Open Educational Resources (OER) are by their very nature collaborative, with instructors who use them frequently joining communities of practice where they exchange experiences, produce content collaboratively, and provide feedback to one another. As a result, cooperation might result in the creation of more diverse and rich instructional resources that are appropriate for a range of settings. Because OER has an international component, educators may access a vast amount of content produced by peers in other nations. Diverse perspectives and methods are used in this way to enhance curricula in a way that exposes pupils to a wide variety of concepts and cultures.

CONCLUSION

Open Educational Resources have evolved as an effective transformative force in global learning, ensuring more inclusive, accessible, customisable and affordable education. The educational needs of the underserved and marginalized group of learners are evidently satisfied through OER by enabling them to access the enormous array of teaching learning materials. The flexible nature of OER supports the educators to cater to the learning needs of the diverse learners from different cultural, social and economic backgrounds. It also increases the possibility of collaboration among the education system across the globe. In the midst of the challenges related to the quality assurance, sustainability, originality and long-term viability, OER integrate the formal and informal learning environments. Since education and technology go hand in hand, OER will play an increasingly pivotal role in framing an impactful, more open, flexible and collaborative global education arena.

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CHAPTER IV



Holistic Education : Nurturing the Mind, Heart, and Soul

GENDER SENSITIVITY IN ARTIFICIAL INTELLIGENCE

***K. Nandha**

INTRODUCTION

In this age many go to solution for any person who is in the generation Alpha to any problem is it asking for a doubt or to solve a complex mathematical equation has been to ask an Artificial Intelligence bot. The widespread use of AI to answer the simplest of questions has made it essential to understand how the AI itself generates its answers. The AI may be the next giant leap of technology by the human race. In the words of Sundar Pichai, CEO of GOOGLE says “AI is one of the most important things humanity is working on. It is more profound than, I dunno, electricity or fire.”

While embracing the new technology of AI there is a need to question if the tech is correct and also to point out the flaws in it. To understand anything, it needs to be seen from multiple viewpoints or focus points this paper attempts to bring out an understanding and question the idea of Gender Sensitivity i.e. the lack of it in the most prominent of AI tools being used and to understand the bigger picture of what's behind it and what must be done to bridge this gap.

WHAT IS AI AND HOW IT WORKS?

An ideal Artificial Intelligence (AI) is a technology that allows a machine or a collection of machines to do tasks or things that generally require human intelligence. An AI learns by the amount of data it processes, it takes in large amounts of data and processes it and learns constantly and improves. It learns to recognise patterns and trends. It can solve problems and give probable recommendations based on the large patterns of data present. It can give the most probable solution to our questions. It can adjust its answers based on the data of the person asking the questions. i.e the AI when asked a question who is the president will answer the question according to the country from which it detects the question is being raised from.

Artificial Intelligence has become something that is extensively used in the modern world in several crucial places like in manufacturing sectors wherein in some factories there is no need for a human being to be present. AI is used in several areas such as in cyber security, home security systems, smart tv and other devices. It is also used by doctors in the modern age to

make complex diagnosis, by scientists in the solving of complex problems and in crunching large scale data. Commonly AI is used in several spheres of life in the modern life like in online payments, online shopping and in several countries in things like self-driving vehicles.

There are four types of AI based on their abilities to learn and adapt they are:

- i) Reactive machines
- ii) Limited Memory
- iii) Theory of Mind
- iv) Self aware

i) Reactive Machines

They are AI systems that do not have the ability to store data for a longer period of time and do not use the past data to solve problems. They react based on the current question that is put before them. They lack the ability to learn or adapt to a problem based on the earlier interactions.

ii) Limited Memory AI

Limited Memory AI are the most common system of AI's they can store large chunks of data and store the response. They use the previous data and responses to give the answers to the questions asked currently. They have the ability to learn and adapt constantly they also learn to adapt to the changing ideas and circumstances.

iii) Theory of Mind AI

Theory of Mind AI is still a concept in development which envisions a type of AI that can not only understand but also predict human behaviour, thoughts, actions and intentions thus enabling the AI to have human like communication abilities.

iv) Self-Aware AI

Self-Aware AI is yet to be developed it is the type of AI that if created would be one which has its own consciousness. It will be more than a machine but something which will ask questions about its own existence and answer it by itself. It will be an AI which will cause to change its own code and also rewrite its own code making it to have infinite amount of power and knowledge. This type of AI is the one that is most feared by many thinkers as a Self-aware AI would be highly questionable, it would mean what decisions the AI would make for the human race. Many also fear that it may cause a fight between the humans and AI; this would further lead to making the AI taking over the world and humans becoming second class citizens.

GENDER SENSITIVITY

First and foremost, it is essential to understand the term gender sensitivity, it means to be aware, understanding for both the genders to be careful not to exhibit bias, to understand how gender roles and stereotypes affect the lives of people from all the genders and being sensitive to the feelings, preventing the biases that are already present and be in a way that respects all genders and treats all genders with equal values. It also means to understand the potential biases and prejudices based on gender that are already in existence and then act on them.

Gender sensitivity is an essential part of the modern world, in the world where only now after thousands of years of discriminating the women and men based on gender based stigmas and characterising them by making up stereotypes that keep constantly changing. Now in the age of the internet even there is yet to come equality among the members of both the genders, for the evidence of the same we need not look further than a simple look at the news that we hear every day or the places around us where the rules are different for men and for women like even now in India the number of women who hold PhD's or number of women pursuing masters or number of women in places of leadership in multinational companies is very less. Gender sensitivity is a paramount to be understood and taught to bring in the equality among both the genders. It is necessary for us to teach it because it is our duty to right the wrongs of our forefathers and set right what is just and true.

BIAS IN AI

The Artificial intelligence like any technology has its own shortcomings and one of the most prominent one in AI is that it tends to show biases. AI is biased because it is predominantly a data based system and it cannot judge if the data it is given is true or false all it does is based on the validity of the data i.e based on the source and based on the frequency of the data being accessed it will consider that data to be right and give its predictions or assumptions or answers based on the same data.

A technology being biased is not something new in 1988 a British Medical School was found guilty for racial discrimination by the United Kingdom's Commission for Racial Equality. The reason was that the computer system used by the Medical School to determine which candidates would be called for interview was biased against women and also people with non- European names. This was caused because the computer program was designed to call people for interview based on how a human person would also call for interview during that time in the medical school.

An investigative news site called ProPublica points out that when AI natural language processing models are trained on the commonly available news articles it led them to develop and exhibit gender stereotypes.

The main idea here is that the artificial intelligence sites are learning from the existing sets of knowledge and data that is prevalent in the web and in many cases the knowledge that exists in the web is something that is biased on other genders. The literature in many subjects like Sciences, History, Languages and literature primarily focus on men and are oriented towards a patriarchal ideology and this ideology, this ideology permeates in majority of the writings around the world.

The writings and the content of a subject and all its data is skewed favouring one gender and also on negating the other its common for any intelligence that learns from that set of data to develop a bias and this is true in the case of Artificial Intelligence too. Artificial Intelligence learns its content from data that is skewed towards male dominated behaviour and learns from content that is patriarchal and it should not be a surprise to anyone that the AI is inherently biased.

The AI bias is not only in the terms of gender but also in the terms of ideology, politics, semantics, etc. The AI has been proven to be biased towards members of several races, nations and of several ethnic groups, all these could be understood as that the AI because of the skewed data that is present in it are always favouring the majority while discriminating or not giving enough representation to the minorities. The flaw is primarily on the coding of the AI, it needs to be coded or taught to balance the data that it receives, which is a hard task and may take years to be made possible.

GENDER SENSITIVE ARTIFICIAL INTELLIGENCE

Gender sensitivity in the age of artificial intelligence is a significant idea that needs to be deeply researched and understood as many teachers, students, researchers and especially common people around the world with the advent of the age of the internet have their questions answered by not sources from verified and trusted scientific sites but from AI tools like CHATGPT, Gemini ai, etc for their answers. A common search for any content in Google, the most used search site by people around the world used to generate web pages now gives the answer or solution via AI first and then lists the website below it. The need and use of AI has developed rapidly and there needs to be questions on the reliability, authenticity of the data that is given.

The data that is present in most of the websites are skewed favouring the men and are patriarchal in nature and this also inherently for us gives data or solutions that are commonly discriminating against women or does not include the womenfolk in the solutions. It is this lack of data or lack of proper coding of the way in which the AI works in the way it searches data that it is the root of the problem. There needs to be ways made to ensure that the data that the students read is gender sensitive.

The AI presents data sets and outputs that are significantly teeming with biases, the AI mainly uses gendered terms for most of the ideas that are input in it. AI translation tools are often biased in the use of masculine and feminine gendered roles and in its assigning what are the desirable behaviour for male and female. AI tools that are used to generate images tend to produce images that are following the age old stereotype like men in army, women nurses and care takers, etc.

In LinkedIn platform, more men than women were shown open positions because men are considered to seek new job opportunities more often (Wall & Schellmann, 2021). This is related to social patterns expecting men to have less family burdens. Discrimination is also common in job recruitment systems using AI. A well-known case is that of Amazon: in 2018, it was revealed that the screening algorithm used for job candidates gave higher scores to white men applicants because the data used to train the algorithm were biased, full of information of white men being the best performers (Tambe et al., 2019).

Zinnya Del Villar suggests these following steps to to reduce or perpetuate the biases and inequalities in our societies. Here are five steps that Villar recommends to make AI inclusive – and better.

1. Using diverse and representative data sets to train AI systems
2. Improving the transparency of algorithms in AI systems
3. Making sure AI development and research teams are diverse and inclusive to avoid blind spots
4. Adopting strong ethical frameworks for AI systems
5. Integrating gender-responsive policies in developing AI systems

The children of the Gen Alpha are learners of the web, teachers, researchers, students, parents, people from all walks of life have now become dependent on the net for things from simple advice like what to do for fun or best movies to watch to even now at an alarming level to making complex

life decisions like what to study, where to study, should I take this medicine; AI which has become an integral part of the web needs to urgently and stringently take into account the varied sets of people who access it and steps need to be ensured that it doesn't give data that is biased towards one gender favouring the other, this will instil among the people gender bias and even move towards the level of fostering hostility or negative attitude towards the other gender mainly women and LGBTQ+ community. It is also necessary to use this beautiful creation of the human mind to foster inclusivity and bring the people of the world together. It is possible to use AI to spread the idea of equality, fraternity, solidarity and gender equal justice in the world.

Robust regulatory frameworks, laws, and governmental policies relating to the development and usage of AI and the governance of AI related activities, can contribute to confront risks resulting from gendered biases in AI. UNESCO (2020, 2024) calls governments and policymakers to: create standards for data collection and algorithm development that prevent biases from being introduced or perpetuated; publish characteristics, contexts and output properties for which AI models must ensure equitable performance; implement oversight mechanisms and conduct regular audits to ensure AI systems adhere to rights-based and ethical standards; mandate technology companies to invest in research for the impacts of AI across different groups; encourage AI applications that respond to women's needs and experiences, besides not incorporating bias or negatively impacting them.

Artificial Intelligence tends to mirror the society as a whole and it mirrors also the gender bias that is inherent in the world, it can easily be said that when the world changes the AI also will change and become free of bias but when will the world change. We need to use the AI technology to teach the next generations not to commit our mistakes, we need to teach them to be free of bias, and we need to teach them to respect the members of the other generation.

CONCLUSION

As the great Carl Sagan said "We are all citizens of the pale blue dot." We need to teach the children to respect, to share the resources, to help, to seek help, to love all the people without mindless boundaries of nationhood, gender, race, class, caste and religion. In the shrinking world we can do this and we can use this beautiful creation called AI to bring the world closer by using it as a tool to enlighten the people.

Any technology when in the hands of the few becomes a tool of power and oppression the same is the case with weapons and is the same with data

in the modern age, the people need to be the decision makers in how the AI is used. The governments of the world must make regulations on addressing the various biases that are inherent in the AI tools and data sets. There is a need for research to be done on how to use the AI to cull out the bias in the name of gender, the idea of gender roles, the idea of gender stereotypes and make the world a place that is better for the next generation.

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VALUE INCULCATION FOR A BETTER HUMANE SOCIETY IN VIEW OF RE- IMAGINING TEACHER EDUCATION: PERSPECTIVES AND PROCESSES

***Dr S. Pondyselvi**

INTRODUCTION

Values are integral to the process of education. They are not add-ons. All education is, in sense, value education. ‘Value-less’ or ‘value neutral’ education is a contradiction in terms, given the meaning of ‘value’ and ‘education’. Education is a process of bringing about desirable changes in the way one thinks feels and acts in accordance with one’s concept of the good life. In this sense, education necessarily involves the transmission of values. Our aims of education development of personality, pursuit of knowledge, preservation of culture, and training of character are no more than statements of our value preferences. Towards realizing them we design a curriculum, a planned collection of desirable knowledge, skills, attitudes and values that we wish to pass on to the younger generation. And this we do in ways that do not violate the freedom and autonomy of the learner.

MEANING OF VALUES

A value stands for ideal men live for. Values are part and parcel of the philosophy of a nation and that of its education system. They are the guiding principles of life which are conducive to all round development. Values are principles, which help to better the quality of life and codify the dos and don’ts of behaviour. They form the basics of character formation and personality development. The values that spring from within or the core of the heart, like love, compassion, sympathy, empathy, tolerance, etc. lay the foundation for the external practiced values like honesty, discipline, punctuality and loyalty. The most important to remember is that “values are priceless, while valuables are priced”.

IMPORTANCE OF VALUES

In today’s multi-cultural and multi-racial society, with its changing social norms and expectations, it can be difficult for a young person to know what is right but it enable young people to appreciate themselves and others, and to take greater responsibility for their actions and for the world around them.

PRESENT SCENARIO

In today's fast paced competitive world, man seems to have compromised on his values, integrity and character, in a bid to earn, use and possess more and more of material wealth. As a result, we see rampant corruption, unlawful activities, inhuman behaviour and immoral consumption, which is slowly breaking the very structure of our society, nation and the world. Therefore, there is an urgent need to re-introduce value based spiritual education dealing specifically with human values", to redesign the fabric of our educational system.

SCHOOL: COMMON PLATFORM

A child's mind is like soft clay and can be molded to any desired shape. Thus, this is the right time and age to impart value education so that the right impressions formed in the child's mind will guide him throughout his life. Such life will definitely be based on moral and just principles. School is the common platform for all children coming from various backgrounds. In an interactive and learning environment of the school, where a child spends a maximum of eight hours of waking time, the human values can be easily evoked in him by making him "experience" and "live" the values. Values education can take place at home, as well as in schools, colleges, universities, offender's institutions and voluntary youth organizations. Themes that values education can address to varying degrees are character, moral development, Religious education, Spiritual development, citizenship education, personal development, social development and cultural development.

CLASSIFICATION OF VALUES

i) *Personal Values:* Personal values mean the desires of individual whatever they are in the social relationship. Some of the personal values are excellence, honesty, self-confidence, self-motivation, punctuality, ambition, courage, creativity, imagination etc.

ii) *Social Values:* Individual cannot live in the world without having interaction with others. People want social values like love, affection, friendship, peer group, reference group, impartiality, hospitality, courageous, service, justice, freedom, patience, forgiveness, coordination, sympathy, tolerance etc. Social values are more important for healthy, good environment for every organization.

iii) *Moral Values:* Moral values impart respecting others and ourselves, respecting the right of others, keeping promises avoiding unnecessary

problems with others avoiding cheating and dishonesty, showing gratitude to others and encourage them to work.

iv) *Spiritual values:* The ultimate ethical value is called spiritual value. Spiritual values are piety, meditation, yoga, self-discipline, control, purity, and devotion to God etc. Spiritual values highlight the principles of self-restraint. Self-discipline contentment, reduction of wants, freedom from general greed and austerity.

v) *Universal Values:* It is universal values that indicate the essence of the human condition. It is through Universal Values that we link ourselves with humanity and the cosmos. Universal Values can be experienced as life, joy, brotherhood, love, compassion, service, bliss, truth and eternity.

vi) *Cultural Values:* Cultural values are concerned with right and wrong, good and bad, customs and behavior. Cultural values are reflected in language, ethics, social hierarchy, aesthetics, education, law, economics, philosophy and social institutions of every kind.

After classifying values, we must be determining which of the above values are most meaningful. Universal values are at the top of the list. The others have their place but it is through Universal values that we experience a sense of oneness with the human race Universal values must be our foundation if we are to enjoy a rich, profound, fulfilling life.

CONCEPT OF VALUE EDUCATION

Value Education, as it is generally used, refers to a wide gamut of learning and activities ranging from training in physical health, mental hygiene, etiquette and manners, appropriate social behavior, civic rights and duties to aesthetic and even religious training.

AIMS OF VALUE EDUCATION

- 1. *Developing a sense of self-awareness:*** Value education aims to help individuals develop a strong sense of self-awareness. This means being aware of one's strengths, weaknesses, emotions, and thoughts. Self-awareness is important because it enables individuals to understand themselves better, which can help them make better choices and decisions.
- 2. *Fostering a sense of respect:*** Value education aims to promote respect for oneself, others, and the environment. Respect is an important value because it helps individuals to treat others with dignity and empathy. By

promoting respect, value education can help reduce conflicts and promote peaceful coexistence.

3. ***Encouraging ethical behavior:*** Value education aims to instill ethical behavior in individuals. This means developing a sense of right and wrong and promoting integrity, honesty, and accountability. Ethical behavior is important because it helps individuals to make decisions that are in the best interest of themselves and others.
4. ***Promoting social responsibility:*** Value education aims to promote social responsibility and encourage individuals to contribute positively to society. This can involve promoting community service, volunteering, and taking action to address social issues such as poverty, inequality, and discrimination.
5. ***Developing critical thinking skills:*** Value education aims to develop critical thinking skills in individuals. This means teaching individuals to question assumptions, evaluate evidence, and make informed decisions. Critical thinking skills are important because they enable individuals to navigate complex situations and make informed choices.
6. ***Encouraging lifelong learning:*** Value education aims to encourage lifelong learning and a commitment to personal growth and development. This means promoting a love of learning and encouraging individuals to take on new challenges and explore new ideas.

PHILOSOPHY AS THE BASE FOR VALUE ORIENTED EDUCATION

Teachers have to be competent and be committed to their task of nation building by developing values in the future citizens. Philosophy provides the base for values, aims and goals, and the curriculum of the teacher education. Therefore, there is an urgent need to look into the philosophy for a sound basis for value-oriented teacher education.

VALUE-BASED TEACHER EDUCATION

Values are integral to the process of education. They are not add on. All education is, in sense, value education. 'Value-less' or 'value neutral' education is a contradiction in terms, given the meaning of 'value' and 'education'. Education is a process of bringing about desirable changes in the way one thinks feels and acts in accordance with one's concept of the good life. In this sense, education necessarily involves the transmission of values. Our aims of education are to develop the personality, pursuit of knowledge, preservation of culture, and training of character among the students. Towards realizing

them, must design a curriculum, a planned collection of desirable knowledge, skills, attitudes and values that we wish to pass on to the younger generation and this we do in ways that do not violate the freedom and autonomy of the learner. In other words, education, in its aims, curriculum and methods, is inseparably linked with values. The demand for value orientation of education (and teacher's education), therefore needs to be considered visa-via internal reform of the objectives, content and processes of school education and teacher education.

TEACHER AS A ROLE MODEL

As a result of quick economic growth, influence of western culture, over mechanization, urbanization and craving for materialistic life there has been a loss of values and of the value system at the individual level and in the society as a whole. History speaks and universally accepted, the teachers are unchallenged custodian of the society and embodiment of evolutions and revolutions of the world. The kingpin in the schooling process is the teacher. If the teacher is personally committed to the values and practices them in his/her own life, the students will imbibe the values for which teacher stands. It is for this reason only those teachers who leave deep impact on their students are remembered and also revered. Therefore, if values have to be nurtured in children it would be crucial that their teachers function as role models.

PARTICIPATION OF TEACHER EDUCATORS

The participation of teachers in the formulation and implementation of educational plans can yield rich dividends, especially in institutional planning and programmes of qualitative improvement. Several of the community improvement programmes and school programmes such as improvement of text books, adoption of better methods of teaching and evaluation, intensive utilisation of available facilities, maintaining contact with community, individual guidance to students, inculcation of social and moral values etc. do not need much investment in physical or monetary terms. But their success depends essentially upon the competence of the teachers, their sense of dedication and their identification with the interests of the students committed to their care. But unless they make every effort to cultivate these skills and values they shall not be able to participate effectively in educational programmes and to discharge their responsibility to students and the society.

INCULCATION OF VALUES THROUGH EDUCATION

Education in general and value education in particular occupies a prestigious place in the modern context of the contemporary society. The problem of value education of the young has assumed increasing prominence

in educational discussions during recent times. Parents, teachers and society at large are concerned about values and value education of children. The great defiance in the education in this millennium is, without doubt, to give special emphasis in man's, dignity and values, with a special vision that conceives him as creator who doesn't limit only to watch the established order, by the contrary, dynamically participates in the changes that benefits the human race. The values present a true perspective of the development of any society or nation. They tell us to what extent a society or nation has developed edit self. Values are virtues, ideals and qualities on which actions and beliefs are based. Values are guiding principles that shape our world outlook, attitudes and conduct. Values however are either innate or acquired. Innate values are our inborn divine virtues such as love, peace, happiness, mercy and compassion as well as the positive moral qualities such as respect, humility, tolerance, responsibility, cooperation, honesty and simplicity.

TEACHING VALUES – AN EXPERIMENT IN EDUCATION

Education is a process that starts at the next moment of birth of every child. Education did not just mean teaching the students how to read, write and get a job. It also included developing the personality of the student to make him, an ideal citizen. So value education is education in values and education towards the inculcation of values. Different aims of education can be listed as follows:

- To impart the practical knowledge, necessary to level a useful life.
- To preserve, transmit and enhance the values from one generation to another.
- To create new values.
- To boost self-expression, self-preservation and. self-confidence.
- To help individual to adjust physically and mentally.
- To enable individuals to control environment and fulfill responsibilities.
- To eradicate communal and social disharmony
- To develop problem solving abilities and positive approaches to life
- To utilize limited resource effectively for better achievements.

Inculcation is an effort to teach children the values that educators believe lead to moral behaviour. These values include honesty, compassion, justice, and respect for others. One way of teaching such standards is to provide appropriate praise and punishment. Another means is to have teachers reflect the desired values in their own behaviour.

EMPOWERING LEARNERS BY INCULCATING VALUES

Value education has a capacity to transform a diseased mind into a very young, fresh, innocent, healthy, natural and attentive mind. The transformed mind is capable of higher sensitivity and a heightened level of perception. This leads to fulfillment of the evolutionary role in man and in life. Education in very general terms is a process of bringing about desirable changes of behavior in the learners, in accordance with standard norm, which is concept of good life. Students may develop some essential values through various curricular and co-curricular activities in the school. Teachers are responsible for inculcating new values and for developing the total personality of the learners. Before devising a plan for imparting value education or the empowerment of learners it is imperative to decide what teachers ought to develop and how to develop, in other words a teacher must know the content of value-oriented education and should be in position to adopt various approaches strategies and methods for inculcating values and for the empowerment of learners. A vital component of education that goes beyond academics is empowering students by instilling ideals. It helps people to become responsible citizens, make wise decisions, and acquire vital life skills. Learners can successfully navigate life's complexities by being instilled with values like respect, empathy, responsibility, integrity, and perseverance. This promotes emotional intelligence, social responsibility, and personal growth. By preparing students for possibilities and difficulties in the future, this all-encompassing approach to education eventually helps to build a society that is more socially conscious, responsible, and compassionate.

CONCLUSION

According to our Indian tradition and culture teacher is the third God. He/She has a pivotal role in the process of teaching and learning. He is a guide, philosopher, mother, father, God, architecture and model. Education is the solution for all types of problems. With the help of education, we can solve any types of problems in the society. Through education it is easy to inculcate values in the students and in the people. Without human values we can not survive in the world in a peaceful manner and we can not enjoy life. the importance for human values is indispensible. The foundation of creating a better, more compassionate society is value inculcation. Thus we can enable people to become responsible, kind, and socially conscious citizens by fostering fundamental values like empathy, respect, and integrity. This in turn promotes harmony, understanding, and peaceful coexistence by cultivating a society that values the well-being and dignity of all of its members. Eventually, instilling values is the key to opening the door to a more promising and compassionate future for future generations. Value

inculcation continues to be an essential part of our efforts to create a better world. Hence, we give people the skills they need to face life's obstacles with courage and insight by teaching them the value of virtues like honesty, integrity, and accountability.

Furthermore, the social fabric of our communities is significantly impacted by value inculcation. People are more likely to build solid, meaningful connections with people when they are based on values like empathy, compassion, and respect. Therefore, communities become more peaceful and inclusive as a result of this, which also promotes social cohesiveness and a sense of belonging.

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CRAFTING INTEGRAL PERSONALITY THROUGH INCLUSIVE CURRICULUM

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INTRODUCTION

After the advent of LPG, seamless changes have occurred in the lifestyle of humanity; it remains extremely challenging to digest the factors of variations and stimulations. Today's student population in the college is more diverse than any previous generation of college students: they're diverse in age, culture, demographic, socio-economic status, and emotional attributes. The youth have a tendency to earn while they learn; family responsibilities often compete with today's students' educational goals. Lifelong learning and continuing education are fast becoming the norm. Which means, they are dynamic, tech-savvy, and adaptable; they become single-minded with a thirst for knowledge and a desire to make an impact in society. There is one section of students increasingly becoming ambitious about living the lives of global citizens; this invites them to be diversified, inclusive, skill-oriented, and collaborative, and enables them to be connected, innovative, and problem-solvers, duly leveraged by technology (Mukherjee, 2025).

The way of learning has evolved significantly over time and he or she who is shaped by the digital age has adjusted and kept pace with changes, being molded into unique learning characteristics, preferences, and behaviors. The modern learner is defined by Harry Cloke in the following seven characteristics: **Digital natives**, being lucky to be born in the age of digital technology and its innovations and becoming tech-savvy; **Multi-taskers**, making the person the busiest and best time manager so that many activities can be completed; **Distraction-prone**, as the person is eroded with attention span; **Impatience** and immediate gratification, leaving no fraction of a second to be delayed but only to insist on a swift response; **Self-tutoring**, learning by self-exploration rather than depending on any authority figure for learning; **Socially interactive**, willing to converse and learn from others through meaningful engagements; **Mobile-friendly**, becoming one of the 90% of the global population who use mobile and access educational apps for self-learning (Cloke, 2024). Modern learners are classified by Cloke (2024) as micro-learners, visual learners, social learners, problem-solvers, casual dealers, flow-learners and emotional consonants.

While one group is capable of balancing academics with extra-curricular and resilient enough to manage multiple challenges, yet another section struggles with too many stressors and too little support (Lumina foundation, 2019). The rapid growth of science and technology has strapped the learner into a cave of slavery, pulverizing him / her to be listener and repeater of the voice of technology; the silent power of social media, though apparently yielding some space for innovation in the name of reels, memes etc., effectively modifies the person dependent and imitator of another. The original thinking is hushed up, the sense of belonging to a human community is suppressed, and it remains a lonely being in the hands of machines.

A study made by Lala Acharya, Lan Jin, & William Collins among US college students indicated a deeper presence of high depressive symptoms; further, international students reported higher depressive symptoms than domestic students and female students showed higher depression symptoms than males (Acharya, Jin & Collins, 2018). In general, the learners are result-oriented, instant result seekers, sidetracked, independent, man / woman on the wheel, craving for more information and knowledge, and struggling to balance between jobs, learning centers and home life. (Harman Singh, 2025).

AIMS AND OBJECTIVES OF HIGHER EDUCATION

Education does not mean teaching people what they do not know nor teaching the shapes of letters and the tricks of numbers; rather a painful and continual effort to be undertaken to have a meaningful human existence with our values and relationships, UNESCO in its document on Higher Education (HE), says that HE ‘is a rich cultural and scientific asset which enables personal development and promotes economic, technological and social change. It promotes the exchange of knowledge, research and innovation and equips students with the skills needed to meet ever-changing labour markets. For students in vulnerable circumstances, it is a passport to economic security and a stable future.

According to John Adam (1797), the second President of US, education has two-fold objectives: one as training students in skills so that they become employable and able to make a living; second, the ultimate goal is transforming the person so that he knows how to live, that is, live-able. Therefore, the aims and objectives of higher education may be defined in the following ways: to acquire knowledge and disseminate with the right critical thinking and analytical skills, to develop the needed attitude for in-depth Research and Innovation, to equip individuals with the employment skills and qualifications to pursue rewarding careers, to foster personal growth

and life skills in order to be fully functioning personality, to contribute to the society through effective leadership and civic engagement, to create and implement curricula that are relevant to the growing needs of the well-being of individuals as well as the wider society, to ensure the formation of agents of ethical, intellectual and social consciousness. On the whole, the HE must aim at crafting an integral personality at the service of the nation, to appreciate and embrace diversity, and thus a unified country is sustained; here the integral personality must be defined.

INTEGRAL PERSONALITY: WHO?

The ancient Greek Philosopher Aristotle, while exploring the various aspects of human nature and society, makes the famous statement, “man is by nature a social animal”; in Tamil, there is a saying, ‘human is made up of aspects of manitham and miruham’, which indicate the presence of elements of soft as well as hard, rational and irrational factors, acting upon or influencing the actions of humans. Thus, we may agree with Aristotle that humans are inherently social beings who are rationally conditioned to be interdependent on each other for their survival and flourishing; or else, yielding to irrational, makes him or her anti-social.

A personality is inclusive of everything about one’s physique, socio-emotional and personal characteristics; means the whole person and everything about external: appearance, behaviour, habits, and communication of attitudes and thoughts, and internal-interests, inner thought processes, emotions and feelings. This personality may differ to be static, meaning a person is satisfied with the minimum and what he has, whereas dynamic, meaning having a search and thirst, longing for new and more and aiming at a maximum. New personalities emerge only when we long for change and growth; for, change is the only changeless thing / phenomenon. This phenomenon of changing people is christened by Maslow as self-actualizing; a person who realizes one’s own potentialities and abilities into socially productive growth; Carl Rogeras Fully functioning person, who is creative and person-centred; who is psychologically healthy, sensitive to the needs and rights of others as much as his own and who enjoys life to the Integrated person fullest.

The integrated personality, as per Gajanan Shirke (2025), ‘is the state of being in happiness with self and society; it is that in which a person functions with the full potential of body, mind and soul’. Emphasizing the importance of the spiritual status of a person, he further states that “a person conscious of only body or mind will not function in the totality of his existence, but a healthy body and mind sprinkled with spirituality culminates into an

integrated personality. A healthy body and mind sprinkled with spirituality culminates into an integrated personality’.

From here, we may narrow down to the definition of integrated personality; an “integrated personality(IP)” refers to a person whose various aspects – attitudes, thoughts, feelings, behaviors, and values – are in alignment, functioning as a cohesive and harmonious whole. There is an inclusive growth of everything: one’s physique, socio-emotional, mental, spiritual and personal characteristics (Egyankosh, 2018).

INTEGRATED PERSONALITY: HOW?

When an individual naturally extends her or his social nature positively in favour of the global society in which a person lives, the faces of an integrated personality begin to bloom; all creatures strive not only for survival but to make the very best of their existence and more so with humans. An IP will do the very best she or he can to live a healthy, happy, and contended life. The faces of an IP may be described in the following words: IP will be an extensional being, responding to similarities and differences, uniqueness of every object and event, being open to reality, owning and participating in experiences, appreciating the differences with awe, wonder etc., and ready to move with any one beyond caste, colour, race etc., and avoids being intentional where, narrow-mindedness and conventional thinking glooms over. IP aims to have access to the self and emotions of others, have complete self-control, love deeper reading than superficiality, imagine creative solutions and move towards self-actualization and self-esteem. The organism trust that they have in themselves elevates them to be superior and more rational to ordinary humans.

ROADBLOCKS FOR INTEGRAL PERSONALITY

Firstly, looking at the personal level, in the process of constructing an integral personality, awareness of one’s self is more imperative; absence of self-awareness means disintegrated personality. This self-awareness will enable a person to identify and project before him or her the strengths and weaknesses in thinking, expressing and acting. The ideal self-image that one has, whims and fancies, unachievable dreams, high aspirations, and impossible desires which constitute self-concept may challenge her or his capacity. When the self-concept reaches its pinnacle of haughtiness, the person declines to accept reality; there appears a gap between reality and self-concept, affecting the normal functioning of the person. For a better personality, the ideal self and real self must intersect in a greater domain.

Secondly, when the right assessment of the real personality fails, having a rift between ideal and real self, the person ushers into some psychological defense mechanism; these mechanisms might differentiate the person from fellow-men and women and avoid the interactive situations that will hamper the process of integrated living of the person. Thus, the absence of self-awareness coupled with fear and defense mechanisms becomes a major hindrance to becoming an integral person. Thirdly, the absence of a balanced psyche with a sound body and sound mind will hinder human life in all dimensions, leading to conflicts in relationships, hurdles for creative and critical thinking and less enthusiasm for productive thoughts and actions. Psychologically, the developmental tasks of a person must occur at the right time, which will add vigor to the personality, failing which the stunted growth of a person will be experienced; more dependency on day-to-day life activities becomes very visible.

Further, in the context of society, there are a number of forces acting upon an individual, including genetic, dwelling zone, social and communal categories such as caste, religion, language, colour, and cultural adherence, varying economic standards of rich and poor, employed vs. self-employed, political inclinations, and educational status. Researchers have found some common, everyday behaviors that have been influenced by genetics. These include: 'neuroticism, introversion vs extraversion, openness to experience, agreeableness, and conscientiousness, emotionality, activity, and sociability'(Linkedin,2022). That is why the family is looked upon as the key player in the making of an integral personality. If the parents are not open and futuristic, the children will, no doubt, grow up as divided personalities.

However, Allport (1937) pointed out that genetics provides the raw material of personality, but it is the social environment which makes the material into a finished product. Cattell (1965) too argued that for some of his 16 personality factors, heredity is important, but the environment has an effect on these factors to a great extent (LinkedIn, 2022). Environmental factors include the major social compartments such as caste, religion and language, which are very much exploited by politicians for their ends; shackled by these elements, the youth are stripped of their original selves, robed with self-centric values, abandon the human touch and become unapproachable. The social and religious barriers, including unpleasant family situations, unstable and partial social customs towards persons based on sex, caste, religion, language, resources and culture, demotivate the citizens and end with an alienated personality; the person becomes maladjusted to the social environment and inevitably remains out of favour.

It is to be reminded, as we live in an age of science and technology, the impact of technology is frightening, directly upsetting the personality of young people. Modern society has landmarked a few values as acceptable and amenable values, but they are the values designed and propagated by corporate companies and elite people. Consequently, the traditional and conventional thinking and words occur nowhere in the lifestyle of modern men and women, but only the thoughts and behaviours that deconstruct humanity.

INCLUSIVE CURRICULUM: DEFINITION AND CHARACTERISTICS

The construction of a personality essentially depends on two social institutions, namely, the family, which is the miniature and subsystem of the greater society, and the educational institutions, which occupy a larger portion of lifetime of youth in the making; for the seed is sown, grown and watered in those little gardens. Well, while we appreciate the role of the family in its feeding towards the growth of an infant after birth, the foundation laid in childhood through education is significant and relevant. Mere cognitive development alone cannot be considered as the aim of education but only the comprehensive achievement of growth of head, heart and hand; that is the uniform progress of all the three domains. A holistic and multidisciplinary education would aim to develop all abilities of human beings -intellectual, aesthetic, social, physical, emotional, and moral-in an integrated manner(Xavier, 2020). This task of holistic education is possible only when we have a well-planned curriculum implemented on the floors of the campus. The curriculum should be people-oriented, having their needs, struggles and aspirations accommodated; the role of teachers is to facilitate a smooth passage for their wards, entrusted to their care. As the curriculum encompasses all that is transacted within a campus, care must be ensured for a 100% take away from the process of learning, promising student-centric interaction.

An inclusive curriculum is one which aims to ensure that all students have equal access to educational opportunities, improves the learning experience, development of skills and attainment of all students, including those in the disadvantaged groups, academically, physically, socially, etc., by having it student-centric and need-specific. The curriculum remains with some key principles: ‘a curriculum accessible for all, enabling students to see themselves reflected in the curriculum and equipping students with the skills to positively contribute to a global and diverse environment ‘(Kingston University, 2017).

To further speak about the characteristics of an inclusive curriculum, the following phrases would spell them rightly:

- a). An inclusive curriculum anticipates the varied needs of learners and ensures that what you do for all your students reaches everyone
- b). It is flexible, being ready to respond, so that the individual's changing needs, curiosity, and preferences are adequately addressed. Therefore, teachers may have to be student-centric rather than content-centred while designing and selecting activities and tasks; they need to develop more than one assessment method for each task and students' preferences for different learning styles must be acknowledged, considering the ongoing feedback.
- c). The element of consistency, ensuring a comprehensible course experience for all, which would require action on formal and informal feedback, designing teaching to simplify and promote course-level engagement for all students and avoiding colloquialisms, jargon and acronyms'
- d). The curriculum is expected to be equitable: that is, accessible, engaging and enhancing for all, which means establishing reasonable and challenging expectations for all, with the provision of learning materials beforehand and ensuring sufficient time allocated for all students to do their best. So that, every student can meaningfully participate and benefit from the class experience to realize his or her potential. This will also enable the class to interact with each other and the group gets mingled, crossing all barriers.
- e) It is collaborative; In the sense, it promotes authentic student engagement, enabling and developing a dynamic and supportive situation between teacher and students, and ensuring the roles of both in terms of planning and delivery of the content, and its evaluation.
- f). By recognising the value of personal differences, the curriculum becomes Personalised; the inclusive curriculum helps the teacher to know the students, nurturing a sense of belonging and generating a variety of opportunities for individuals to shine. When it is personalised, the strengths and opportunities are identified, leading to reflective engagement of the students in the learning process.
- g). it is diverse; raises awareness among students about each other's' cultural and learning differences, appreciating diversity as a reality and lifelong opportunity and one which is increasingly important globally.

Recognising that the knowledge is culturally constructed and interactively finetuned in the diverse group of students, the inclusive curriculum creates a space for actively mixing and pairing students of different backgrounds to breakdown barriers build group dynamics and ensure intercultural learning

NEED FOR INCLUSIVE CURRICULUM

Why do we need Inclusive Curriculum? It is basically an offshoot of the natural justice and a fundamental right of every citizen, to grow with one's potentials and dreams; not to be denied on the basis of any humanly created or birth-related barriers and impediments. In the context of rapid growth of science and technology, where comfort assumes the prime spot in human life, where amassing currency and wealth remains primary in one's life through all crooked means, where human values are at risk and worth of human life is relegated under the shadow of materialism, and appropriation is justified in lieu of honest and straight path of hard work, today the world has become a den of cowards and foxes; the pious and sincere humans, particularly the younger generation have no way out. The only solution is the reconstruction of system of education, which would throw light on the growth of unmerited elements and place the young minds in right perspective; this will broaden their thinking, making them users of 'out of box'. By this education, we mean the system chiseled out by the inclusive approach, whereby the equity, access, equality and respect for all is ensured. In other words, the inclusive curriculum is the need of the hour to transform the suffering humans towards enlightened citizens; only then the construction of inclusive personality will become a reality.

VALUE ABSORPTION IN CURRICULUM

To manufacture an inclusive personality in the portals of higher education, the main agenda of inclusive curriculum, must be the careful insertion of value framework, through which maneuvering of new persons are conceived, impregnated and born. An inclusive curriculum recognizes and values the diversity of students, ensuring all learners feel respected and have equitable opportunities to engage, learn, and succeed, regardless of their background or learning style. Therefore, the students must be able to 'go beyond', unlimiting oneself with conventional constraints and barriers, and flying into the unknown sky but promising to be the beacon of sensible brotherhood and sisterhood, embracing the men and women of peripheries in all the directions and thus serve as the guardians of global fellowship. T. Henry(2015), the author of book entitled 'DIE EMPTY', describes the five-step process of living a life empty; what does he mean? EMPTY denotes Ethics, Mission, People, Tasks, and You. This invites the education to be people oriented on a mission of empowering all, on the basis of inclusivity, and the task of the teacher is to involve in the holistic formation of students, whereas the individual(You) has to cooperate with the ongoing formation(Xavier, 202; Henry, 2015). Inculcating values and erecting a person on social values is the basis of inclusive curriculum.

Let us look at the words of John Ruskin, the famous English writer of 19th century which reads this way: “Education does not mean teaching people what they do not know; it means teaching them to behave as they do not behave. It is not teaching the youth the shapes of letters and the tricks of numbers and then leaving them to turn their arithmetic to roguery and their literature to lust. It means, on the contrary, training them in to perfect exercise and kingly continence of their bodies and souls. It is a painful, continual and difficult work to be done by kindness, watching, warning, precept and praise but above all by example”. Teaching is a kind of communication, a meeting and merging of minds and the curriculum affirms the basic values in all the ways. Education is to tame a person as a human being. The need for humanness is the want of the student and local community. The goal of education is not so much in textual experience but in human interaction, leading to concrete commitment to the society around them. Education as such has its specific goal and role in transforming the society. This has been well understood by the Jesuits, the pioneers of higher education in India. Concrete commitment means seeking of the company of the poor and the simple, the rural and the underprivileged, the slow learners and the special children etc. Raising a clarion call for the life of the voiceless both within and without the classrooms is the basic becoming of a best teacher (Xavier, 2020).

TECHNOLOGY IN CURRICULUM

Inclusive curriculum needs to offer the due space for growing technology, as today’s learner is digital native; it does not mean, they must be only well-versed with usage of technology but also the communicators of love, peace and justice. But what is the role of technology in the inclusive curriculum? Technology has the power to organise a person in his or her mission of attaining the goal; intellectually, the inclusive curriculum offers variety of arguments to ponder over and tag him or her as the critical person with in-depth inquisitiveness. Remember, Technology makes a person disciplined in search, steady-minded and balanced in opinion-formation, open for newness, and search for unique solution.

The dawn of Artificial Intelligence in all walks of human life cannot be mistreated, as it has anchored to have a say over human’s life, including the making of a comprehensive person. Not only serving as the great resource for ocean of information, but the AI also releases the personality to be inclusive, offering him or her, the variety of outlook and perspectives, ensuring thus the quality of being appreciative about the other in the process

of search for wisdom. Making the person feel recognised and unfolding the potentials, whoever he or she is, technology places everyone on the same plane and weighs each one of them as per their abilities; thus, the inclusivity and impartiality is safeguarded. Though it is lamented that addiction to technology lead to negative impacts on mental and physical health, it is equally projected that technology offers sufficient employment skills and vocational training, guaranteeing a secured future. Technology also enables a person remain updated in his or her field of service and keep vibrant and active, which is the sole character of any inclusive personality. Therefore, the inclusive curriculum that accommodates the emerging technological developments will amply pave the way for inclusive personality. Please note that Artificial intelligence (AI) has changed every aspect of human life today; research suggests that it will be a \$1.3 trillion market by 2030. Most Gen Z (54%) and Millennial (58%) individuals are open to using AI for everyday tasks. This percentage is lower for Gen X (39%) and Baby Boomers (30%). This suggests that digital natives and modern learners are more receptive to the adoption of AI. As a result, they'll benefit from personalised learning experiences, including tailored content, adaptive learning, and individualised guidance (Cloke, 2024).

CONCLUSION

Life is a process of constant change and hence one has to unravel the truth with his search and enrich his depth of his knowledge. That makes him the different person among the million. If one is an inclusive personality then it has to be expressed in his or her outlook, thinking, approach, behaviour, execution and expression. This is very much shaped and constructed only through inclusive curriculum which will periodically go through changes as the technology affects the thought pattern and life styles of humans in today's society.

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INFLUENCE OF SOCIAL MEDIA AMONG STUDENTS AND ENHANCING CLASSROOM CULTURE THROUGH SOCIAL MEDIA

***Dr V Ajantha**

INTRODUCTION

In today's world, social media plays a fundamental role in our daily lives. Its impact on education is significant, influencing students inside and outside the classroom. Platforms such as Twitter, YouTube, and online learning communities are valuable tools that inspire students and deepen their understanding of various subjects. The effects of social media on students are more evident than ever. It has become a powerful resource that can greatly enhance our learning experiences in various ways.

ENHANCING CLASSROOM CULTURE THROUGH SOCIAL MEDIA ENGAGEMENT

Educators can use social media as both an interactive educational tool and a subject for critical examination. By implementing initiatives such as creating a class blog and organizing collaborative projects on social platforms, teachers can enhance the learning experience. Here are some key strategies:

1. Co-create Social Media Guidelines

- Initiate a collaborative process to establish clear guidelines for social media usage in the classroom.
- Involve the class in discussions about acceptable uses, expectations, digital etiquette, and the overall purpose behind these online interactions.

2. Defines the Learning Objectives

- Align social media activities with specific learning objectives related to the content taught.
- Ensure that the use of online platforms meaningfully contributes to the overall educational goals.

3. Promote Knowledge Sharing

- Emphasize the importance of sharing knowledge through social media.
- Encouraging the learners to post relevant articles, resources, and personal insights to enrich the collective learning experience.

4. Create a Safe Space

Works together to make the social media a secure platform for expressing diverse opinions and experiences.

5. Connect Social Media to Real-World Applications

Guide students in linking their online interactions to real-world contexts, both professionally and personally, highlighting the practical relevance of digital skills.

Through these strategies, educators can effectively integrate social media into their teaching practices. This transforms social media from a mere communication tool into a dynamic space for building community, fostering inclusive participation, and enhancing the learning experience.

STEPS FOR THE TRANSFORMATION

a. Digital Literacy

- Digital literacy includes staying safe online and protecting one's privacy.
- Teaching digital literacy involves guiding students to act responsibly online, keep their personal information safe, understand the consequences of their online actions, and handle cyberbullying.
- By learning these skills, students can use social media intelligently, which helps them have positive online experiences and feel good about their interactions.
- This education will also help students avoid issues like fake news and negative influences online.

b. Fostering Open Communication

- Open dialogue is as important as learning to use social media safely. We must create safe spaces at school where students feel comfortable discussing their online experiences, both positive and negative.
- By maintaining open lines of communication among students, teachers, and support staff, we can identify issues like cyber bullying early and help students remain safe and healthy online.

c. Collaborating with Stakeholders

- This collaboration includes schools, parents, community groups, and mental health professionals. Working together can create better strategies for helping students use social media safely and healthily.
- Educators can engage with parents about setting healthy limits on screen time and modeling responsible online behavior.

- Community groups can provide the programs that ought to teach students essential digital literacy skills.

d. Harnessing Educational Potential

- Students can collaborate on online projects, sharing information and learning from one another.
- This teamwork helps them develop vital communication and collaboration skills that are essential in today's world.
- Additionally, social media can be used for research and sharing work with audiences beyond the classroom.

THE INFLUENCE OF SOCIAL MEDIA ON STUDENTS

i. Access to Information

- Social media offers students access to a broad range of information and educational resources.
- They can follow educational pages, join study groups, and quickly access learning materials.
- This access aids in broadening their knowledge and keeping them updated on various subjects.

ii. Social Interaction

- Social media enables students to connect with peers, teachers, and experts worldwide.
- It facilitates communication and collaboration on academic projects and social causes.

However, if not used wisely, it can also lead to distractions that affect their focus on studies.

iii. Mental Health

- The use of social media can significantly impact students' mental health. While it can serve as a source of support and community, excessive usage may lead to issues such as anxiety, depression, and low self-esteem.
- Students may feel pressured to compare themselves to others or become victims of cyber bullying.

iv. Time Management

- Students often struggle to manage their time effectively due to the distractions of social media.
- Spending too much time online can interfere with their study schedules

and extracurricular activities, resulting in procrastination and decreased academic performance.

v. *Digital Literacy*

- Social media helps students develop essential digital literacy skills, including navigating online platforms, evaluating information sources, and communicating effectively.
- These skills are vital for their future careers and overall digital competence.

BENEFITS OF SOCIAL MEDIA IN EDUCATION

a) Access to a World of Knowledge:

Social media platforms provide access to educational content from around the globe. Students can learn from engaging You-Tubers who explain complex concepts or join online communities and forums filled with experts, offering diverse perspectives at their fingertips.

b) Active Learning and Collaboration:

Social media promotes active learning and facilitates seamless collaboration. Students can share research findings, brainstorm ideas, and edit documents collaboratively in time.

c) Expressing Creativity:

Social media empowers students to express their creativity in new ways. They can showcase their work, share their talents with a global audience, and receive valuable feedback.

d) Developing Communication Skills:

Social media platforms provide a safe space for students to practice and refine their communication skills. Engaging in online discussions allows them to articulate their thoughts clearly.

e) Staying Updated on Current Events:

Social media keeps students informed about current events and global issues. Following educational news outlets and thought leaders can spark interest in the world and different cultures, contributing to a well-rounded education.

CONCLUSION

Social media has significantly influenced how we communicate and interact with one another, and this impact extends to education. The integration of social media into modern education creates a unique dynamic

that both teachers and students must navigate. On one hand, social media provides easy access to valuable resources and promotes collaboration and communication. On the other hand, it presents challenges such as information overload, distractions, and cyber bullying. While social media has the potential to reshape education, all of us need to work together to mitigate its negative effects on students. By recognizing both the opportunities and challenges posed by social media, we can ensure that our education system continues to evolve and succeed.

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DIGITAL REFLECTIONS: THE IMPACT OF SOCIAL MEDIA ON PERSONALITY FORMATION AMONG TEACHER EDUCATORS, PROSPECTIVE TEACHERS, AND STUDENTS

***Dr. M.Amala Jansi**

INTRODUCTION

Social media platforms such as Facebook, Twitter, Instagram, and LinkedIn have revolutionized the way individuals communicate, learn, and construct their identities. For teacher educators, prospective teachers, and students, these platforms serve as powerful tools for knowledge-sharing, networking, and professional development. However, social media also shapes cognitive and emotional attributes, influencing self-esteem, interpersonal skills, and behavioral patterns.

UNDERSTANDING SOCIAL MEDIA

Social media refers to digital platforms that facilitate user interaction, content creation, and sharing of information. These platforms include social networking sites (Facebook, Twitter, LinkedIn), media-sharing sites (YouTube, Instagram, TikTok), and discussion forums (Reddit, Quora). Social media allows users to express themselves, form virtual communities, and engage with global audiences in real time.

UNDERSTANDING PERSONALITY

Personality refers to the combination of characteristics, traits, and behavioral patterns that define an individual's identity. It is shaped by genetic factors, environmental influences, and social interactions. Psychologists define personality using various theories, including the Big Five Personality Traits (openness, conscientiousness, extraversion, agreeableness, neuroticism) and Erikson's psychosocial development stages. Personality evolves over time based on experiences, learning, and self-reflection.

POPULAR SOCIAL MEDIA PLATFORMS IN PERSONALITY DEVELOPMENT

Social media plays a significant role in shaping personality by influencing self-expression, communication styles, and social engagement. Some key platforms contributing to personality development include: Facebook, Instagram, Twitter, LinkedIn, TikTok & YouTube

THE ROLE OF SOCIAL MEDIA IN SHAPING PERSONALITY DEVELOPMENT

Social media can significantly influence personality in the following ways:

1. **Self-Expression:** Users shape their identity through status updates, blogs, vlogs, and personal branding.
2. **Socialization:** Digital interactions enhance communication skills, empathy, and interpersonal relationships.
3. **Cognitive Growth:** Access to diverse viewpoints fosters critical thinking and open-mindedness.
4. **Emotional Resilience:** Exposure to online feedback helps individuals develop confidence and emotional regulation.
5. **Professional Development:** Networking opportunities contribute to career growth, leadership skills, and digital competencies.

INFLUENCE OF SOCIAL MEDIA PLATFORMS ON PERSONALITY DEVELOPMENT

Social media Encourages individuals to express their opinions, engage in discussions, and develop social confidence through community participation and networking. It Shapes self-image, creativity through visual storytelling, personal branding, and exposure to diverse cultural perspectives. It also enhances critical thinking and communication skills by fostering debates, discussions, and real-time news engagement. Social media develops professionalism, leadership skills, and career-oriented networking through industry interactions and skill-building courses. It promotes creativity, adaptability, and self-confidence through short-form videos, challenges, and trend participation. It helps to provides educational content, motivational talks, and skill-building resources that enhance intellectual growth and self-improvement. Encourages spontaneous self-expression, quick decision-making, and social bonding through multimedia messaging, & strengthens interpersonal skills and teamwork by facilitating real-time communication and group discussions. It enhances privacy-conscious communication among the individual digital organization, and leadership skills through large group management and knowledge sharing.

THEORETICAL PERSPECTIVES ON PERSONALITY FORMATION

Personality formation is a dynamic process influenced by genetic predispositions, environmental factors, and social interactions. Theories such as Erikson's Psychosocial Development Theory and Bandura's Social

Learning Theory provide insights into how digital experiences impact personality traits. The constant exposure to virtual communities, online validation, and algorithm-driven content plays a crucial role in shaping self-identity and behavioral responses.

PERSONALITY DEVELOPMENT THROUGHFACEBOOK

Facebook is a versatile social media platform that allows you to enhance various aspects of your personality. Here's how you can use it for personal growth:

a) *Networking and Social Confidence* – Engaging in discussions, joining professional groups, and connecting with diverse individuals can improve your communication skills and confidence in social interactions.

b) *Knowledge Enhancement* – Following educational pages, research communities, and expert forums provides access to valuable insights that can enhance your intellectual development.

c) *Leadership Skills* – Managing a Facebook group, organizing events, or leading discussions within communities can boost your leadership abilities and decision-making skills.

d) *Public Speaking and Expression* – Posting thoughtful content, sharing opinions, and participating in live discussions help in developing articulation skills and self-expression.

e) *Creativity and Content Creation* – Sharing original posts, writing blogs, and curating visual content can refine your creativity and personal branding.

f) *Emotional Intelligence and Empathy* – Engaging in meaningful conversations, supporting online communities, interacting with people from different backgrounds fosters empathy and emotional understanding.

g) *Professional Development* – Following career-related pages, job networks, and industry leaders helps in gaining knowledge about career advancements and skill-building opportunities.

h) *Personal Branding* – Maintaining a well-structured profile with insightful posts and active participation in discussions helps in creating a positive online presence. By using Facebook strategically, you can develop essential personality traits such as confidence, adaptability, leadership, and critical thinking.

ENHANCING PERSONALITY DEVELOPMENT THROUGH X (FORMERLY TWITTER)

X (Twitter) serves as a powerful tool for personality development by enhancing communication skills, critical thinking, and professional networking. Here's how you can use X to shape and refine your personality:

a) *Enhancing Communication Skills* – Engaging in discussions, crafting concise thoughts within character limits, and participating in trending conversations improve articulation and clarity in communication.

b) *Critical Thinking and Analytical Skills* – Exposure to diverse opinions, debates, and news analysis helps in developing logical reasoning and informed decision-making.

c) *Networking and Professional Growth* – Following experts, engaging with thought leaders, and participating in professional discussions contribute to career development and industry awareness.

d) *Building Confidence and Digital Presence* – Sharing insights, responding to queries, and engaging in discussions foster self-confidence and establish a strong online identity.

e) *Learning from Thought Leaders* – Following motivational speakers, researchers, and professionals enhances knowledge and personal growth through valuable insights.

f) *Time Management and Productivity* – Following accounts that focus on time management, self-improvement, and productivity can encourage goal-setting and effective planning.

g) *Emotional Intelligence and Social Awareness* – Engaging with global issues, cultural trends, and humanitarian causes fosters empathy and a broader worldview.

h) *Creativity and Expression* – Participating in creative writing, storytelling, and digital discussions improves creativity and innovation in thought expression.

By using X (Twitter) effectively, you can develop a strong, adaptable, and well-rounded personality that aligns with both personal and professional aspirations.

INSTAGRAM'S ROLE IN PERSONALITY DEVELOPMENT

Instagram has played a significant role in shaping personality development by offering a platform for self-expression, networking, and professional growth. Through its visually-driven content and interactive features, it influences personal and social identity formation.

a) Visual Storytelling & Self-Expression: Instagram allows users to craft their personal brand through curated images, videos, and reels, enhancing self-confidence and creativity.

b) Cultural Awareness & Inspiration: Exposure to diverse lifestyles, artistic expressions, and global trends broadens perspectives and fosters adaptability.

c) Influence on Self-Perception: The platform can shape self-image through beauty standards and aspirational content, necessitating mindful consumption for positive reinforcement.

d) Networking & Professional Growth: Instagram serves as a medium for educators and students to showcase work, engage with educational communities, and develop digital literacy.

By leveraging Instagram strategically, individuals can enhance creativity, build professional connections, and develop a confident digital identity that aligns with personal and career aspirations.

THE IMPACT OF YOUTUBE ON PERSONALITY DEVELOPMENT

YouTube, as a social media platform, plays a crucial role in shaping personality by providing educational content, motivational talks, and skill-building opportunities. Here are some examples:

a) Educational Channels: Platforms like TED Talks, CrashCourse, and National Geographic help in knowledge enhancement and intellectual growth.

b) Motivational Speakers: Influencers like Jay Shetty, Robin Sharma, and Simon Sinek inspire individuals to build self-confidence, resilience, and leadership qualities.

c) Skill Development: Tutorials on public speaking, critical thinking, and problem-solving from channels like Charisma on Command help individuals develop essential life skills.

d) Cultural Awareness: Travel vlogs, language-learning videos, and cultural documentaries contribute to a broader worldview and open-mindedness.

e) Personal Growth: Self-improvement channels focusing on mental well-being, productivity, and time management foster discipline and goal setting.

THE INFLUENCE OF WHATSAPP ON PERSONALITY DEVELOPMENT

WhatsApp has become an essential tool for communication, collaboration, and personal growth. Its versatility enables users to develop critical skills that contribute to their overall personality development.

a) Enhanced Communication Skills: Engaging in group discussions, professional forums, and academic collaborations improves articulation and interpersonal skills.

b) Teamwork & Leadership: Managing group chats, organizing events, and facilitating discussions develop leadership and organizational abilities.

c) Emotional Intelligence & Conflict Resolution: Quick messaging fosters empathy, patience, and the ability to resolve misunderstandings effectively.

d) Professional Networking & Digital Etiquette: Interaction with educators, mentors, and peers strengthens networking skills and promotes responsible digital behavior.

By effectively utilizing WhatsApp, individuals can enhance their communication skills, leadership abilities, and emotional intelligence, making it a valuable platform for personal and professional growth.

LINKEDIN'S ROLE IN PERSONALITY DEVELOPMENT

LinkedIn plays a crucial role in shaping an individual's personality by enhancing professional visibility, confidence, and industry engagement.

a) Professional Identity Formation: Creating a well-structured profile, showcasing skills, and engaging in industry-specific discussions help in building a strong professional image.

b) Networking & Communication Skills: Connecting with experts, participating in discussions, and sharing insights improve interpersonal and professional communication skills.

c) Leadership & Personal Branding: Writing articles, sharing professional achievements, and engaging with thought leaders help in developing leadership qualities and self-confidence.

d) Skill Enhancement & Lifelong Learning: Access to LinkedIn Learning, webinars, and expert posts aids in acquiring new competencies and staying updated with industry trends.

e) Career Growth & Goal Setting: Exposure to job opportunities, mentorship programs, and career guidance fosters strategic planning and ambition.

By leveraging these aspects, LinkedIn not only aids in career progression but also nurtures a well-rounded personality, essential for success in today's competitive world.

TIKTOK'S ROLE IN PERSONALITY DEVELOPMENT

TikTok plays a significant role in shaping personality by fostering creativity, confidence, and social adaptability in an engaging digital space.

a) Creativity & Self-Expression: Short-form videos encourage users to showcase their talents, experiment with storytelling, and develop creative confidence.

b) Adaptability & Trend Awareness: Engaging with viral trends, challenges, and fast-paced content helps individuals stay adaptable and open to new ideas.

c) Communication & Public Speaking Skills: Lip-syncing, duets, and educational content creation improve articulation and stage presence.

d) Cultural Awareness & Global Perspective: Exposure to diverse content from different cultures fosters inclusivity and global awareness.

e) Confidence & Self-Esteem: Positive audience engagement and community support can enhance self-confidence and personal motivation.

By leveraging these aspects, TikTok not only serves as a platform for entertainment but also contributes to personal growth, helping individuals build a dynamic and expressive personality.

ENHANCING OUR PERSONALITY THROUGH SNAPCHAT

Snapchat, known for its disappearing messages, filters, and interactive features, can significantly contribute to personality development. It enhances creativity, social interaction, and self-expression in various ways. Here's how you can use Snapchat to develop your personality:

1. Boosting Communication and Social Skills

a) Real-Time Interaction: Snapchat's instant messaging, voice notes, and video calls help you develop spontaneous communication skills and build confidence in conversations.

b) Engaging with Friends and Communities: Interacting with diverse groups through snaps and stories improves interpersonal relationships and social adaptability.

c) Storytelling and Expression: Regularly sharing experiences and thoughts in a concise and engaging manner enhances your ability to express yourself clearly and confidently.

2. Enhancing Creativity and Self-Expression

a) Use of Filters and Augmented Reality (AR): Experimenting with creative filters, Bitmojis, and interactive AR features encourages artistic expression and innovation.

b) Creating Engaging Stories: Developing a habit of sharing well-structured daily stories enhances creativity, content creation skills, and the ability to present ideas in an interesting way.

c) Snapchat Spotlight: Posting short-form engaging content on Spotlight allows you to showcase your talents, humor, or unique perspectives, boosting self-confidence.

3. Strengthening Emotional Intelligence and Self-Confidence

a) Authenticity Over Perfection: Unlike other social media platforms that focus on curated content, Snapchat encourages real-time, unfiltered sharing, helping you embrace authenticity and self-acceptance.

b) Maintaining Close Friendships: The emphasis on private communication rather than public posting helps in fostering deeper and more meaningful relationships, enhancing emotional intelligence.

c) Overcoming Social Anxiety: Engaging in casual, low-pressure interactions helps in overcoming social fears and developing confidence in conversations.

4. Learning through Exploration and Global Awareness

a) Snapchat Discover: Exploring news, educational content, and inspirational stories from media outlets and influencers expands knowledge and cultural awareness.

b) Location-Based Features (Snap Map & Stories): Viewing stories from different parts of the world exposes you to diverse perspectives and broadens your worldview.

c) Following Experts and Influencers: Learning from business leaders, motivational speakers, and subject matter experts contributes to professional and personal growth.

5. Developing Digital Responsibility and Time Management

a) Healthy Digital Habits: Since Snapchat's content disappears quickly, it encourages real-time engagement rather than excessive scrolling, promoting mindful social media usage.

b) Managing Online Identity: Understanding privacy settings, maintaining a positive online presence, and practicing responsible digital interactions contribute to digital literacy.

c) Efficient Social Interaction: The quick nature of snaps encourages efficient and purposeful communication, saving time and enhancing productivity.

By using Snapchat effectively, you can enhance communication skills, boost creativity, build confidence, and develop emotional intelligence.

Whether it's through storytelling, networking, or learning from global content, Snapchat can be a fun and engaging platform for personal growth.

ENHANCING OUR PERSONALITY THROUGH TELEGRAM

Developing your personality through Telegram involves utilizing its features for knowledge acquisition, networking, and self-improvement. By engaging with diverse content and communities, individuals can refine their communication skills, expand their perspectives, and build a confident digital presence. The following ways can help in developing personality through Telegram:

- a) Join Educational and Professional Groups** – Engage in subject-related groups and forums where experts share insights. Participate in discussions to enhance your knowledge and critical thinking.
- b) Follow Thought Leaders and Experts** – Subscribe to Telegram channels that provide valuable content on personality development, leadership, technology, and education.
- c) Engage in Meaningful Conversations** – Use Telegram's group and private chat features to interact with like-minded individuals, exchange ideas, and improve your communication skills.
- d) Utilize Telegram Bots for Learning** – Explore AI-powered bots that offer courses, book summaries, language learning, and productivity hacks.
- e) Create and Manage Your Own Channel or Group** – Share your expertise, post educational content, and engage with an audience to develop leadership and digital presence.
- f) Stay Updated with News and Trends** – Follow news channels to stay informed about global events, enhancing your awareness and adaptability.
- g) Practice Digital Etiquette and Responsible Engagement** – Learn to communicate effectively, respect diverse perspectives, and build a positive online reputation.

By actively leveraging these features, Telegram becomes a platform for continuous learning, personal growth, and self-confidence, shaping a well-rounded personality suited for the digital era.

SOCIAL MEDIA AND PERSONALITY DEVELOPMENT IN TEACHER EDUCATORS

Social media platforms offer teacher educators a range of opportunities to enhance their skills, connect with peers, and develop their personalities. By leveraging platforms like Facebook, Instagram, X (formerly Twitter),

LinkedIn, TikTok, YouTube, Snapchat, WhatsApp, Telegram, and Threads, educators can engage in meaningful discussions, share insights, and stay updated on teaching strategies and educational trends. Through strategic use of these platforms, teacher educators can build confidence, improve communication and leadership skills, develop visual storytelling and public speaking abilities, and refine their critical thinking and digital literacy. By harnessing the potential of social media, educators can foster personal growth, expand their professional networks, and contribute to the education community.

SOCIAL MEDIA AND PERSONALITY DEVELOPMENT IN PROSPECTIVE TEACHERS

Social media platforms offer prospective teachers a wealth of opportunities to develop essential skills and qualities, including communication, creativity, confidence, leadership, and digital literacy. By leveraging platforms like Facebook, Instagram, X (formerly Twitter), LinkedIn, TikTok, YouTube, Snapchat, WhatsApp, Telegram, and Threads, prospective teachers can engage in meaningful discussions, share insights, and stay updated on teaching trends. Each platform provides unique benefits, such as creating educational content, participating in live sessions, joining professional groups, and developing visual storytelling and public speaking skills. Through active engagement, prospective teachers can enhance their critical thinking, analytical skills, and problem-solving abilities, ultimately shaping them into effective and confident educators equipped to succeed in the education sector.

SOCIAL MEDIA AND PERSONALITY DEVELOPMENT IN SCHOOL STUDENTS

Social media plays a pivotal role in shaping the personality of school students, offering opportunities to develop essential skills such as communication, creativity, and confidence. By leveraging platforms like Facebook, Instagram, X (Twitter), LinkedIn, TikTok, YouTube, Snapchat, WhatsApp, Telegram, and Threads, students can engage in meaningful discussions, access educational content, and express themselves positively. Through strategic use of these platforms, students can build self-confidence, improve critical thinking and articulation skills, and develop a habit of continuous learning and self-improvement, ultimately growing into well-rounded individuals with enhanced digital communication skills and a strong self-image.

CONCLUSION AND RECOMMENDATIONS

The influence of social media on personality formation among teacher educators, prospective teachers, and students is significant and multifaceted. While it enhances educational growth, communication, and social connectivity, it also presents challenges such as identity construction, mental health concerns, and ethical dilemmas.

To maximize the benefits and mitigate risks, educational institutions should promote digital literacy, critical thinking, and responsible online engagement. Integrating structured guidelines on ethical social media use into the curriculum can help individuals develop a balanced and informed approach to digital interactions. Encouraging healthy online-offline balance, fact-checking habits, and professional digital identity management will foster a more resilient and socially aware generation of educators and learners.

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PREPARATION OF TEACHERS AND STUDENTS FOR STEAM EDUCATION

***Dr.T.Komalavalli**

INTRODUCTION

STEAM is an educational approach that incorporates the arts into the more-familiar STEM model, which includes science, technology, engineering and mathematics. STEAM programs can include any of the visual or performing arts, such as dance, design, painting, photography and writing.

Reintegrating art and design into education has been demonstrated to increase the happiness and well-being of students. From a commercial perspective, the major remunerations include better problem-solving skills and increased creativity and innovativeness. The integration of arts into STEM education and fields may also help encourage more participation by women in male-dominated areas.

As India is a developing country, it is the need of the hour to exhibit our talents not only in scientific areas but also in the field of arts. As teachers, it is our topmost priority to inculcate the higher order thinking skills among students who are the backbone of future nation.

IMPORTANCE OF STEAM EDUCATION

It is impossible to overstate the value of STEAM education. One important reform is the integration of technical and scientific topics with arts subjects. The primary goal of elementary and secondary school basic education is to prepare students for any career and to lay a solid basis for future study. Science courses necessitate a solid foundation in science and mathematics, whether for academic or practical reasons. But the demands of the modern world need a different approach to education. Combining these topics helps students develop future abilities like problem-solving, teamwork, decision-making, and critical thinking. This is particularly relevant with the development of artificial intelligence (AI).

CORE COMPONENTS OF STEAM

The main components of STEAM are:

1) Science: Students investigate the natural world, record observations, and gain an understanding of how things function via scientific inquiry, which is

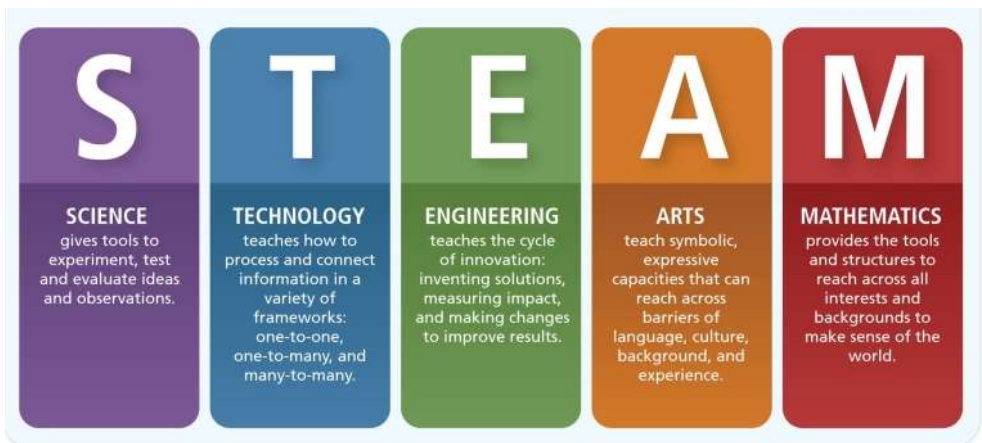
at the core of STEAM education. The ability to formulate hypotheses, test theories, ask questions, and create new things is all components of scientific thinking.

2) Technology: The use of knowledge to develop answers is what technology in STEAM is all about, not just devices or software. This involves understanding digital design, coding, and how to solve problems with contemporary technology. The emphasis is on educating students how to solve real-world problems and express themselves through technology.

3) Engineering: Engineering teaches students how to solve issues by applying mathematical and scientific ideas. The process of designing, prototyping, testing, and improving concepts is emphasized in this component, which fosters the development of both technical and creative thinking abilities.

4) Arts: Incorporating the arts promotes emotional involvement, inventiveness, and creativity. This encompasses the performing arts, visual arts, and design thinking, all of which assist students in approaching issues from various angles and incorporating human-centred design into scientific and technology solutions.

5) Mathematics: The foundation of logical reasoning in STEAM is mathematics. It emphasizes the structure of systems, data analysis, and algorithm design. In STEAM, mathematics fosters the growth of students' analytical and problem-solving abilities, which are essential for assessing information and reaching conclusions based on gathered facts.



STRATEGIES FOR IMPLEMENTING STEAM EDUCATION IN THE CLASSROOM

► **Project-Based Learning:** Project-based learning is one of the best ways to teach STEAM. As they conduct research, design, and develop solutions,

students collaborate on real-world issues while integrating the fundamental STEAM disciplines. By imitating how experts in the field tackle problems, this technique gives students practical learning opportunities.

➤ ***Interdisciplinary Teaching:*** Instructors can deconstruct the conventional boundaries between studies and create classes that integrate several fields. A lesson on environmental sustainability can be incorporated into a scientific lesson by examining ecosystems, reducing waste using technology, devising appropriate solutions via engineering, raising awareness through the arts, and calculating the environmental impact on society through mathematics.

➤ ***Promoting Design Thinking:*** One important method that STEAM education uses to address issues is design thinking. Empathy, imagination, model building, and testing are all part of it. Students are encouraged to approach problems creatively and iteratively by design thinking.

➤ ***Communication and Collaboration:*** Since many real-world problems are resolved through cooperation, STEAM education places a strong focus on teamwork. Students gain collaboration, idea sharing, and effective communication skills which are highly desirable in almost any field of work.

PREPARATION OF TEACHERS TOWARDS STEAM EDUCATION

The teachers should be prepared to adopt the changing scenario in the field of Science and Technology to meet the demands of the learners as well as society.

➤ ***Accept Change:*** To be prepared for STEAM education, it is essential to support change. Each person should be prepared to experiment with new teaching strategies and technological advancements in order to spark students' curiosity about learning. Participating in workshops for professional development, going to national and international seminars, working with colleagues from various disciplines, and trying out project-based learning will all help instructors embrace the changes that are taking place in their environment. Understanding that change will always occur in education and that teachers must adjust to it as part of their professional development is crucial.

➤ ***Refresh Your Skills:*** For STEAM education, it is imperative that teachers keep their skills up to date. Each should be thoroughly understood by teachers, and students will gain a great deal from their ability to incorporate them into their lessons. It will be beneficial to attend numerous conferences and workshops in order to learn about the latest developments occurring worldwide and to use them in our classrooms. Making classroom learning exciting for kids requires the ability to create a more difficult and engaging environment.

➤ **Work together frequently:** A fundamental component of STEAM education is collaboration. Getting together with co-workers who teach various disciplines and coming up with ideas for interdisciplinary projects that let students understand the relationships between them. Working together, one can create courses that encompass several STEAM subjects, like a science experiment that calls for technology or a project that blends mathematics and art. In addition to deepening our learning, this cooperative method teaches pupils how to communicate and function as a team.

➤ **Integrate Arts:** STEAM differs from STEM in that it incorporates the arts. In order to innovate, the 'A' in STEAM fosters critical thinking and creativity. Every educator should be aware of how to incorporate creative elements into teachings including science, technology, engineering, and mathematics. Students will learn to solve problems more cooperatively if they are given a visually appealing presentation that explains a concept in any discipline.

➤ **Foster Inquiry:** STEAM education is centred on encouraging curiosity. As a teacher, one must inspire the learners to think critically about the world, ask questions, and consider other solutions. This entails establishing a classroom culture that values curiosity and views errors as teaching moments. Asking open-ended questions encourages conversation and gives students the flexibility to work on projects or undertake experiments that interest them. This inquiry-based method will foster a passion for education and exploration.

➤ **Use of Technology:** Effective use of technology is crucial to modern education, particularly in STEAM subjects. One needs to keep up with the most recent developments in educational technology and consider how they could improve classroom instruction. When technology makes learning more participatory and prepares students for a tech-centric future, teachers should be educated to use simulation software for science experiments, integrate coding into math lectures, or use 3D printing for engineering projects.

QUALITIES REQUIRED FOR THE STEAM TEACHERS:

a) Interdisciplinary understanding of many subjects: A STEAM educator needs to possess specific knowledge and abilities in the particular discipline. This indicates that they have a degree in a particular subject and have either worked in a STEAM field in the past or have specific interests in other subjects.

b) Better communication skills: Someone must be able to explain complicated concepts to pupils who are not familiar with the material being taught; simply being an expert in a specific area is insufficient.

c) *Organizational skills:* To fulfil the duties of the classroom, which include lesson preparation, grading, tracking student progress, and setting up experiments and tests, teachers must be well-organized. When learning complicated subjects, especially in STEAM, well-structured lesson plans will be extremely beneficial to students.

d) *Perseverance and tolerance:* Teachers must possess these traits because they work with students, many of whom are teenagers. It is necessary to thoroughly explain things to people who do not understand, particularly when handling novel and complex jobs that need a range of skills and knowledge.

PREPARATION OF STUDENTS FOR STEAM EDUCATION

The STEAM approach employs project-based learning across all five disciplines. It encourages students to engage both sides of their brains when dealing with a subject. For example, science students have to prepare well-detailed diagrams to illustrate processes. Conversely, art students must adopt logical and analytical thinking to assess their work. The future workforce will have to communicate artistically as well, in addition to traditional modes of communication. They will need to have skills such as illustrating, animation, and model-building. An integrated STEAM approach will manifest the following abilities among the learners.

➤ ***Technical Proficiency:*** Students who learn to code, create, and construct technology through STEAM will be better equipped to meet the challenges in the world that is becoming more and more reliant on technology.

➤ ***Resolving Problems:*** Students are encouraged to use critical thinking skills to solve difficult challenges. They learn about identifying problems, obtaining data, analyzing data, and developing solutions. These are essential abilities for every job in the future, when issues will get more complex and data analytics will play a key role in solving them.

➤ ***Originality:*** STEAM education promotes innovation and creativity. Students are encouraged to use their imaginations, create new goods and technology, and see beyond their own perceived limitations.

➤ ***Collaboration:*** A crucial aspect of STEAM education is collaboration and teamwork. Students should form a team together to work to solve problems and develop projects, which helps them progress communication, leadership, and interpersonal skills. Preparing students for STEAM (Science, Technology, Engineering, Arts, and Mathematics) education involves a combination of skills development, creative thinking, and hands-on learning. The following are the ways to effectively prepare students for STEAM.

► ***Build a Strong Foundation in Core Subjects***

Science: It ensures students to have a strong understanding of scientific principles, from the science subjects namely, biology and physics to chemistry and earth sciences. This foundational knowledge supports problem-solving in engineering and technology.

Mathematics: Focuses on key areas like algebra, geometry, calculus, and statistics. These concepts are critical for tackling technical problems and understanding data.

Technology & Engineering: Exposes students to basic coding, digital literacy, and engineering principles. Hands-on activities like building architect or using computer programs will help solidify their understanding.

Arts: It encourages creativity through visual arts, music, design, and literature. This fosters critical thinking, problem-solving, and innovation, which are important in STEAM fields.

► ***Foster Problem-Solving and Critical Thinking***

Students participate in project-based learning and cooperation through collaborative projects, where they cooperate to find solutions to real-world issues. Students can better blend the abilities from different STEAM areas. Design thinking instructs students in the crucial processes of engineering and technology projects, such as defining challenges, coming up with solutions, building prototypes, and testing them.

Students are encouraged to pose questions and look into the answers through inquiry-based learning, which piques their interest and develops their capacity for independent learning.

► ***Incorporate Technology and Digital Tools***

Programming languages and robotics kits like Arduino and LEGO Mind storms are introduced to students through the Coding & Robotics course. Logical thinking and problem-solving abilities are fostered by these resources. Digital Tools assists in managing design or music production tools such as Adobe Creative Suite, which links artistic creativity with technology.

Data science and visualization tools like Excel, Google Sheets, and even more sophisticated tools like Python data science libraries are used to instruct the learners how to work with data.

► ***Encourage Hands-On and Experiential Learning***

Experiential learning: Helps to set up an atmosphere where students can engage in hands-on projects, such as building models, conducting experiments, or creating art using new technologies.

Field Trips: Makes connection with professionals from STEAM fields or take students on field trips to research labs, museums, or science centres to inspire them with real-world applications of STEAM.

STEM Challenges and Competitions: Motivates to participate in events like science fairs, robotics competitions, or coding hack-athons to give students a chance to apply what they have learned in fun and competitive ways.

► **Promote Interdisciplinary Learning**

Integrate courses: Instead of teaching courses separately, develop projects that incorporate mathematics, science, technology, engineering, and the arts.

Real-World Issues: To get pupils interested in STEAM learning, use real-world problems. Putting information to use in real-world situations improves learning, whether it is creating sustainable energy solutions or resolving neighbourhood issues.

► **Support Social and Emotional Learning**

Collaboration Skills: STEAM often involves working in teams, so it's important to teach communication, empathy, and leadership skills. These are as crucial as technical skills for success in the any profession.

Resilience and Growth Mindset: Encourages students to view challenges as opportunities for growth. Mistakes and failures are part of the learning process, especially in STEAM fields where trial and error are common.

► **Diversity and Inclusion**

Promote Diverse Participation: Encourage all children to participate in STEAM activities, irrespective of their gender, ethnicity, or background. Diverse viewpoints foster greater creativity and problem-solving, and representation is important.

Assure Equitable Access to Resources: Ensures that all students have equal access to tools, technology, and support systems linked to STEAM.

► **Encourage Lifelong Learning**

Career Pathway Exposure: Through work shadowing or mentorship programs, students are exposed to a range of jobs in STEAM industries.

Adapt to Change: Assists students in realizing how swiftly STEAM subjects are changing. It educates students to be flexible and to keep learning new things in order to advance in their careers.

Students who receive a well-rounded education that incorporates creativity, critical thinking, and real-world applications with traditional

disciplines are more equipped to handle the opportunities and challenges of the quickly evolving STEAM environment.

BENEFITS OF STEAM EDUCATION

A new method of teaching is being promoted by STEAM education. The STEAM curriculum uses an integrated, multidisciplinary approach to education. Eliminating all subject-specific differences and teaching them as a unified unit is the fundamental notion.

The holistic approach to teaching subjects and the direct connection with the students' daily lives is a contemporary pedagogic concept that is attempted with the tie of creative thinking (arts courses) and logical mathematics (STEM courses). Through an all-encompassing approach to learning, it addresses the diverse social reality, behaviours, and experiences of the student.

ADVANTAGES OF STEAM

1. ***Fosters creativity:*** STEAM and creativity can lead to new ideas and innovations. Recent advances in artificial intelligence and digital learning would not be possible without creativity.
2. ***Resilience:*** Students learn in a safe environment where they can fail and try again. STEAM education emphasizes the value of letdown as a learning tool, allowing students to accept mistakes as part of their learning.
3. ***Supports innovation:*** Many of the recent technological advances would not have been possible without a little risk-taking and experimentation. Asking questions like “How can you do this?” inspires students to experiment and demand more challenges in the classroom.
4. ***Increases teamwork:*** Students of different abilities can work in teams to solve problems, collect the information, write reports, and present it.
5. ***Employs knowledge of subjects:*** Various practical skills are needed to solve problems. This encourages students to utilize their knowledge and to develop new skills and understandings.
6. ***Improved use of technology:*** Technology and innovation are taught through STEAM education. So, students have to be ready to adopt new technologies instead of being avoiding technology.
7. ***Problem-solving skills:*** STEAM education teaches students to think critically to solve problems. Students learn to analyze higher order problems and develop appropriate solutions.

CHALLENGES IN IMPLEMENTING STEAM EDUCATION

STEAM (Science, Technology, Engineering, Arts, and Mathematics) education is an innovative approach that integrates these disciplines to foster creativity, critical thinking, and problem-solving. However, there are several challenges associated with implementing and effectively delivering STEAM education to students.

► Lack of Resources

- Specialized materials, equipment, and technologies are frequently needed for STEM programs, which can be costly. Schools could find it challenging to invest such a large sum of money in these essential supplies.
- Modern technology, including computers, software, and sophisticated lab equipment, may not be available to all students or schools, which can compromise the efficacy of STEAM instruction.

► Inadequate Teacher Training

- Teachers may not have the necessary expertise or training to teach in all five STEAM areas, particularly the “Arts” aspect, which can be overlooked in more traditionally STEM-focused curriculum.
- Lack of professional development opportunities for educators to stay updated on new tools, strategies, and best practices in teaching STEAM education.

► Interdisciplinary Teaching Challenges

- It might be challenging to logically combine topics like physics and math or art and technology.
- Schools can lack the time, structure, or resources necessary for teachers from several disciplines to work together productively; teachers might find it difficult to develop methods to combine disciplines in a meaningful way while upholding academic rigor. This may hinder the realization of STEAM education’s full potential.

► Assessment of Skills

- Traditional assessments like standardized tests may not adequately measure the skills fostered through STEAM, such as creativity, problem-solving, and critical thinking.
- It can be hard to evaluate students’ performance in a way that reflects their learning across multiple disciplines simultaneously.

► Lack of Time

- Schools often feel pressure to stick to standard curriculum that focus heavily

on core subjects like mathematics and language arts, leaving little time for the integration of STEAM concepts.

- Teachers may face time constraints that make it difficult to plan and execute effective, cross-disciplinary STEAM lessons.

► **Equity and Inclusion**

- Students with lower incomes might not have as much access to advanced coursework, extracurricular activities with a STEAM focus, or chances outside of the school system. There are ongoing but difficult-to-achieve attempts to promote diversity and inclusion in STEAM education.
- Some groups, such as girls and students from minority backgrounds, may be underrepresented in STEAM fields.

► **Resistance to Change**

- Many schools are still structured around traditional models of education, with a focus on subjects in isolation.
- In some cultures, or communities, subjects like art may not be viewed as valuable or connected to STEM fields, making it harder to embrace the holistic nature of STEAM education.

► **Curriculum Rigor and Balance**

- Because technology is developing so quickly, STEAM curricula need to be updated frequently to remain current. It could be difficult for educators and educational institutions to stay up to date with the newest innovations, technologies, and technological trends.
- It can be challenging to strike a balance between giving pupils adequate exposure to both technical (STEM) and artistic (arts) subjects.

► **Student Motivation**

- Even while STEAM promotes experiential, project-based learning, not all students may find the method interesting at first, especially if they have little interest in one or more of the subjects.
 - It might be challenging to differentiate STEAM instruction to satisfy the demands of a diverse group of kids with different learning preferences.
- Working Together with Communities and Industry

It can be difficult to establish collaborations with nearby companies, industries, or community groups to develop practical STEAM learning applications. It could be difficult for many schools to make these linkages, or they might lack the resources to do so. Several educators, educational institutions, and organizations are striving to surmount these problems and

offer outstanding STEAM education that fosters creativity and prepares students for the future to make our nation proud.

CONCLUSION

In an ever-growing world, STEAM education is not merely a trend; rather, it represents an essential shift in how we approach teaching and learning. By combining science, technology, engineering, the arts, and mathematics, STEAM not only equips students to succeed in the workplace but also to be involved, active citizens who can come up with innovative solutions to today's problems. A better, more connected future for everybody might be shaped by STEAM, which encourages creativity, curiosity, and critical thinking.

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As artificial intelligence redefines the fabric of education, teacher preparation must undergo a radical transformation. This timely volume explores how AI technologies are reshaping what it means to teach, learn, and lead in 21st-century classrooms.

Blending scholarly insight with practical foresight, *Re-Imagining Teacher Education* examines the promises and pitfalls of integrating AI into teacher training programs. From ethical dilemmas and pedagogical shifts to curriculum innovation and digital fluency, the book invites educators, policymakers, and researchers to engage with urgent questions:

- What skills will tomorrow's teachers need to thrive in AI-infused learning environments?
- How can teacher education stay human-centered in an age of automation?
- What safeguards must be in place to ensure equity and inclusion in AI-powered classrooms?

Featuring contributions from thought leaders across disciplines, this book offers a compelling roadmap for future-ready teacher education—where technology empowers, but pedagogy leads.

“Technology is not technology if it was invented before you were born. The challenge for education is not to keep up with technology, but to use it intelligently to deepen learning.” - Sir Ken Robinson

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