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Bridging Chalkboards and Smart Screens: A Comparative Study of Traditional Teaching Pedagogy and Digital Learning Pedagogy

Mansi Bihag Joshi
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***Abstract*—The rapid advancement of digital technologies has brought significant changes to teaching and learning practices in higher education, particularly with the emergence of digitally savvy learners. Traditional teaching pedagogy, characterized by chalkboard-based instruction and teacher-centered classrooms, is often perceived as outdated in comparison to technology-driven learning environments. Conversely, digital learning pedagogy, supported by smart boards, online platforms, and artificial intelligence (AI), is frequently viewed as more effective and engaging. This research paper challenges such polarized assumptions by presenting a comparative and integrative analysis of traditional teaching pedagogy and digital learning pedagogy.**

The study employs a mixed-method research design, combining a review of relevant educational literature with primary data collected through a structured questionnaire administered among postgraduate students of the English Department at Maharaja Krishnakumarsinhji Bhavnagar University (MKBU), covering Semester 2 and Semester 4. The questionnaire examines students' experiences with chalkboard-based teaching, digital tools such as smart boards, Google Classroom, flipped learning activities, blog writing, online assessments, and the academic use of AI tools.

The findings reveal that traditional teaching methods continue to play a crucial role in enhancing conceptual clarity, classroom interaction, and learner confidence. At the same time, digital learning pedagogy and AI-based tools significantly improve engagement, language skills, critical thinking, and learner autonomy. The results indicate that students perceive both pedagogical approaches as complementary rather than contradictory. The study concludes that a blended pedagogical framework that bridges chalkboards, smart screens, and AI-driven learning environments is the most effective approach for addressing the academic needs of digitally savvy learners in contemporary higher education.

***Index Terms*—Traditional Teaching Pedagogy; Digital Learning Pedagogy; Artificial Intelligence in Education; Digitally Savvy Learners; Blended Learning**

I. INTRODUCTION

Education has always evolved in response to broader social, cultural, and technological transformations. For centuries, traditional teaching pedagogy has served as the foundation of formal education systems across the world. This pedagogy is typically associated with face-to-face classroom instruction, chalkboard-based explanations, printed textbooks, structured syllabi, and teacher-led lectures. Within this framework, the teacher functions as the primary authority and transmitter of knowledge, while students are expected to listen, take notes, memorize information, and demonstrate understanding through examinations.

The late twentieth and early twenty-first centuries, however, have witnessed an unprecedented technological revolution. The integration of computers, the internet, mobile devices, and digital media into everyday life has profoundly influenced how learners access, process, and engage with information. As a result, contemporary students are often labeled "digitally savvy learners," a term that reflects their familiarity with digital tools and their preference for interactive, visually rich, and fast-paced learning environments.

In response to these changes, digital learning pedagogy has gained increasing prominence. Smart boards, multimedia presentations, online learning management systems, blogs, videos, and virtual classrooms have become common features of modern education. More recently, artificial intelligence has further expanded the scope of digital pedagogy by

offering personalized academic support, automated feedback, and visual learning aids.

Despite these developments, there exists a widespread assumption that traditional teaching methods are inherently unsuitable for digitally savvy learners. Much of the existing research focuses on the advantages of educational technology, while comparatively little attention is given to examining how traditional pedagogy continues to function in digital-age classrooms. This imbalance has contributed to a polarized view that positions traditional and digital pedagogies as opposing forces.

This research paper seeks to move beyond such simplistic binaries. By comparing traditional teaching pedagogy and digital learning pedagogy and examining their combined use in contemporary academic settings, the study argues that effective education lies in integration rather than replacement. The pedagogical practices of the English Department at MKBU serve as a case in point, demonstrating how chalkboard teaching, smart board instruction, and AI-based tools can coexist within a holistic educational framework.

II. TRADITIONAL TEACHING PEDAGOGY

2.1 Concept and Theoretical Background

Traditional teaching pedagogy is often defined as an expository and teacher-dominated form of instruction. According to Gauthier et al., this pedagogy relegates students to a largely passive role, emphasizing memorization, recitation, and the acquisition of lower-order cognitive skills. In contemporary discourse, the term “traditional” is increasingly used to describe teaching practices that minimize or exclude the use of digital technologies.

The theoretical foundation of traditional pedagogy lies primarily in behaviorist and transmission-based learning theories. Knowledge is viewed as a fixed body of information that can be systematically transferred from teacher to student. The classroom functions as a structured and controlled environment where learning occurs synchronously, requiring the physical presence of both teachers and learners.

2.2 Instructional Practices

Traditional classrooms rely heavily on lectures, chalkboard explanations, printed reading materials, and written assignments. The chalkboard allows teachers to explain concepts step by step, build arguments gradually, and engage students in real-time discussion. In English studies, traditional pedagogy has long been valued for its effectiveness in teaching grammar, close reading, literary interpretation, and structured academic writing.

Assessment within traditional pedagogy typically emphasizes written examinations, essays, and coursework. These methods encourage disciplined thinking, textual engagement, and logical organization of ideas. Furthermore, face-to-face interaction allows teachers to provide immediate feedback, clarify doubts, and mentor students intellectually and emotionally.

2.3 Traditional Pedagogy and Digitally-Savvy Learners

Contrary to popular belief, traditional teaching methods are not necessarily ineffective for digitally savvy learners. Empirical research indicates that learners with strong technological dispositions can still perform well in classrooms where technology use is minimized. In some cases, traditional pedagogy provides cognitive stability and reduces distractions, enabling students to focus more deeply on content.

Studies comparing traditional and technologized classrooms have revealed that learners exposed exclusively to traditional methods often demonstrate consistent or improved academic performance over time. This suggests that traditional pedagogy possesses inherent strengths that remain relevant, even in digitally saturated learning contexts.

III. DIGITAL LEARNING PEDAGOGY

3.1 Emergence and Philosophical Foundations

Digital learning pedagogy emerged as a response to changing learner needs and technological advancements. Rooted in constructivist and learner-centered theories, this pedagogy views learning as an active process in which students construct knowledge through interaction, exploration, and reflection.

Digital pedagogy incorporates tools such as smart boards, glass boards, multimedia presentations, online databases, blogs, discussion forums, and virtual learning environments. These tools expand learning

beyond the physical classroom and introduce flexibility in time, space, and pace.

3.2 Advantages of Digital Learning

One of the primary advantages of digital learning pedagogy is enhanced learner engagement. Multimedia resources combine text, audio, visuals, and animation, catering to diverse learning styles. Digital platforms also allow learners to revisit content, access global resources, and collaborate with peers beyond classroom boundaries.

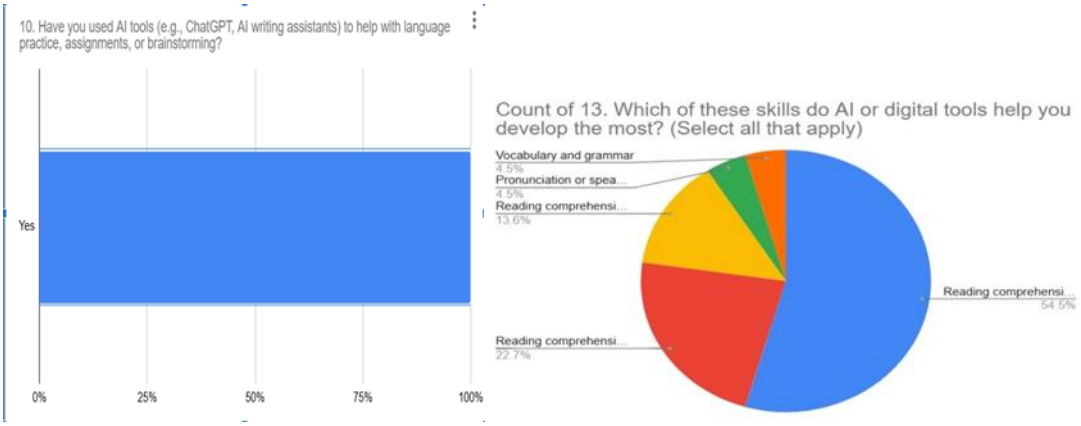
Research comparing traditional learning and e-learning environments suggests that students often report higher satisfaction and motivation in technology-mediated settings. Digital pedagogy also promotes self-directed learning, critical thinking, and problem-solving skills.

3.3 Challenges and Limitations

Despite its benefits, digital learning pedagogy is not without challenges. Overreliance on technology can lead to superficial engagement, reduced human interaction, and cognitive overload. Furthermore, the introduction of new digital platforms often involves a steep learning curve, which may temporarily hinder academic performance.

Empirical evidence shows that learners transitioning into fully technologized classrooms sometimes experience a decline in performance before adapting to the new learning environment. These findings highlight the importance of pedagogical balance rather than technological determinism.

IV. METHOD



Survey Description and Findings

To support the comparative framework of the study "Bridging Chalkboards and Smart Screens: A Comparative Study of Traditional Teaching Pedagogy and Digital Learning Pedagogy", a structured questionnaire was administered among undergraduate students of the English Department at Maharaja Krishnakumarsinhji Bhavnagar University (MKBU), covering Semester 1- 2 and 3- 4. The purpose of the survey was to examine students' experiences with traditional teaching methods, digital learning practices, and the emerging role of artificial intelligence (AI) in language learning.

The questionnaire was divided into thematic sections addressing traditional pedagogy, digital pedagogy, AI usage, and comparative learner perceptions. Responses indicate that students are exposed to both chalkboard-based instruction and digital tools such as smart boards, Google Classroom, flipped learning activities (including Sunday tasks), online tests through Google Forms, and blog writing assignments. This confirms that the English Department actively follows a blended pedagogical model.

Findings from Section B reveal that students still recognize the value of traditional teaching pedagogy. A majority of respondents reported that chalkboard-based explanations are used frequently and neutral for understanding concepts. Many students expressed comfort in asking questions and participating in discussions during traditional classes, suggesting that face-to-face interaction continues to foster confidence and clarity. A significant proportion also agreed that traditional methods help in information retention,

especially when complex literary or linguistic concepts are explained step by step.

Responses from Section C indicate a strong engagement with digital learning pedagogy. Students reported regular use of smart boards, Google Classroom, and online assessments. Among digital activities, flipped learning tasks, Google Classroom quizzes, blog writing, and multimedia-based assignments were the most commonly selected. A majority of respondents found digital tools effective or very effective in understanding difficult topics and agreed that digital pedagogy makes learning more engaging. Flipped learning activities, in particular, were reported to enhance classroom participation, as prior exposure to content allowed students to contribute more actively during discussions.

The most significant findings emerge from Section D, which focuses on AI usage. For Question 10. Have you used AI tools (e.g., ChatGPT, AI writing assistants) to help with language practice, assignments, or brainstorming? 100% of the respondents answered "Yes", indicating universal exposure to AI tools such as ChatGPT or other AI-assisted platforms. This confirms that AI has become an integral part of students' academic practices. For Question 11 -If yes, do AI tools help you improve your writing, grammar, or comprehension? a large number of students selected reading comprehension, vocabulary development, and pronunciation or speaking skills as areas where AI tools are most helpful. These responses highlight AI's effectiveness in supporting core language-learning skills.

Finally, responses from Section E demonstrate that most students perceive both traditional and digital methods as equally important. While some prefer traditional methods for conceptual clarity and examinations, others favour digital tools for engagement and practice. A large proportion selected "both equally" when asked about learning effectiveness and confidence-building, reinforcing the argument that blended pedagogy is the most effective approach. This indicates that students do not perceive traditional and digital pedagogies as opposing systems but as complementary modes that together enhance learning outcomes.

Overall, the survey findings strongly support the study's central argument that traditional teaching pedagogy remains effective for digitally savvy learners, while digital and AI-based tools significantly enhance engagement, language skills, and critical learning. The pedagogical practices of the MKBU English Department successfully bridge chalkboards and smart screens, creating a balanced, learner-centered academic environment.

V. RESULTS

The results of the questionnaire administered among post graduate students of the English Department at Maharaja Krishnakumarsinhji Bhavnagar University (MKBU), spanning Semester 1 to Semester 4, reveal significant insights into learners' experiences with traditional teaching pedagogy, digital learning pedagogy, and the integration of artificial intelligence (AI). The findings clearly indicate that students are actively engaging with a blended learning environment where chalkboard-based instruction, smart screen technologies, and AI tools coexist productively.

With regard to traditional teaching pedagogy, a substantial number of respondents reported frequent use of chalkboards and lecture-based instruction in their classrooms. Students largely perceived chalkboard-based explanations as effective or frequent for understanding core concepts, particularly in literature, grammar, and theoretical discussions. Many learners indicated a high level of comfort in asking questions and participating in discussions during traditional classes. These responses suggest that face-to-face interaction and teacher-guided explanation continue to play a crucial role in enhancing conceptual clarity and academic confidence, even among digitally savvy learners.

Results related to digital learning pedagogy demonstrate strong and consistent engagement with technological tools. Most respondents reported regular use of smart boards, Google Classroom, online tests through Google Forms, blog writing assignments, and flipped learning activities such as Sunday pre-class tasks. Among these, flipped learning activities and online quizzes were particularly valued, as they allowed students to prepare in advance and participate more actively during classroom sessions. A majority of students found digital tools effective or very effective in simplifying complex topics and making learning more interactive and engaging. These findings indicate

that digital pedagogy contributes significantly to learner motivation and active participation. This shows in Digital Learning Pedagogy students also much active as well as the professor. Digital learning reflects that students can slow their doubts trough the help of digital tools like ask question to AI or Google. The results also indicate that students actively enjoy digital learning environments. The use of smart boards, online platforms, flipped learning activities, and AI tools significantly increased engagement, motivation, and participation. Digital learning played a vital role in enhancing language skills, critical thinking, and overall academic involvement among learners.

The data further reveal that students do not perceive digital learning as a replacement for traditional teaching but rather as a complementary enhancement. Many respondents expressed that digital tools help reinforce concepts explained through chalkboard teaching by providing visual support, additional resources, and opportunities for revision beyond classroom hours. This integration reflects a pedagogical bridge rather than a pedagogical divide.

The most striking results emerge from the section focusing on AI usage. For the question addressing the use of AI tools for academic purposes, 100% of respondents selected "Yes", indicating universal exposure to AI-based platforms such as ChatGPT or other AI-assisted learning tools. This finding highlights the normalization of AI within students' academic routines. Further analysis shows that a large majority of students identified reading comprehension, vocabulary development, and pronunciation or speaking skills as the areas where AI tools are most beneficial. This demonstrates that students are using AI in a focused and purposeful manner to strengthen fundamental language competencies.

Additionally, responses suggest a high level of critical engagement with AI-generated content. 50% of students reported that they evaluate and refine AI outputs rather than using them without reflection. This indicates an awareness of the limitations of AI and an understanding of the need for human judgment, likely influenced by departmental guidance and AI-focused academic workshops.

Comparative responses reveal that when asked to identify the most effective mode of learning, a significant proportion of students selected "both traditional and digital methods equally." Similar patterns emerged regarding confidence-building and assessment preferences, where students valued the structured nature of traditional examinations alongside the flexibility of online assessments. These findings confirm that students benefit most from an integrated pedagogical approach.

Overall, the results strongly support the central argument of this study: traditional teaching pedagogy remains effective for digitally savvy learners, while digital learning and AI significantly enhance engagement, skill development, and learner autonomy. The questionnaire data clearly demonstrate that the English Department at MKBU has successfully bridged chalkboards, smart screens, and AI-driven learning, resulting in a balanced and academically enriching learning environment.

VI. EMPIRICAL INSIGHTS: TRADITIONAL VS DIGITAL LEARNING

Empirical research examining the academic performance of digitally savvy learners offers important insights into the ongoing debate between traditional and digital pedagogical approaches. In a comparative classroom study, learners were divided into two groups: one group received instruction primarily through conventional, teacher-led methods with minimal technological intervention, while the other group was taught in a technology-intensive learning environment. Initial observations revealed that students in the digitally enriched setting demonstrated relatively higher baseline performance, reflecting their familiarity with digital tools and online resources.

However, as the study progressed, a noticeable shift emerged. Learners in the technology-intensive group experienced a decline in academic performance during the early stages of implementation. This decline was not due to a lack of ability but rather to the cognitive and procedural demands of adapting to new digital platforms and learning systems. In contrast, students in the traditionally taught group displayed greater consistency in their academic outcomes, with some learners showing gradual improvement over time. The structured and familiar nature of traditional instruction appeared to provide stability, particularly during transitional learning phases.

These findings problematize the assumption that digital pedagogy is universally superior. Instead, they underscore the importance of instructional design, learner preparedness, and contextual suitability. The study suggests that effective learning depends less on the presence of technology and more on how pedagogical methods are aligned with learners' needs and academic readiness.

VIII. ARTIFICIAL INTELLIGENCE AS AN EXTENSION OF DIGITAL PEDAGOGY

Artificial intelligence represents the next stage in the evolution of digital learning pedagogy. Unlike earlier educational technologies focused primarily on content delivery, AI supports higher-order cognitive processes such as analysis, synthesis, and evaluation.

7.1 AI and Academic Writing

In English studies, AI tools assist students in structuring essays, refining arguments, improving coherence, and enhancing language accuracy. AI-based feedback helps learners identify weaknesses in logic and expression, thereby strengthening critical writing skills. When used ethically, AI functions as an academic support system rather than a substitute for thinking.

7.2 AI and Visual Learning

AI-powered digital notebook LM and learning platforms generate diagrams, mind maps, and conceptual charts. These visual aids are particularly effective for understanding complex literary theories and abstract concepts, enhancing comprehension and memory retention.

VIII. INTEGRATED PEDAGOGICAL PRACTICES AT MKBU ENGLISH DEPARTMENT

The English Department at Maharaja Krishnakumarsinhji Bhavnagar University exemplifies a blended pedagogical model that integrates traditional teaching, digital tools, and AI-based learning. Faculty members combine chalkboard explanations with smart boards and glass boards to ensure conceptual clarity.

Students are assigned TED Ed, video lectures, blog writing tasks, and digital portfolio development. These activities encourage global exposure, reflective thinking, and academic creativity. Additionally, the Head of the Department has conducted workshops on the ethical use of AI, training students to use AI tools for examination preparation, academic writing, and critical analysis. Professor also assigned Sunday reading task to students that can help students in next class discussion. It shows students can participate with professor in topic discussion.

IX. CONCLUSION

The comparative study of traditional teaching pedagogy and digital learning pedagogy demonstrates that effective education cannot be reduced to a choice between old and new methods. Traditional pedagogy continues to offer structure, discipline, and intellectual depth, even for digitally savvy learners. Digital learning enhances engagement, accessibility, and collaboration, while artificial intelligence strengthens academic writing, critical thinking, and visual learning.

The pedagogical practices of the English Department at MKBU illustrate how chalkboard, smart board, and AI-driven tools can coexist within a unified educational framework. This study ultimately advocates a hybrid pedagogical model that values continuity, adaptability, and human-centered learning, ensuring meaningful academic development in an increasingly digital world.

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