Role of Teachers in Using Technology for Effective English Language Teaching: A SmartPLS-Based Study in Private Universities

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Abstract

The use of technology has greatly revolutionized the teaching of the English language at a higher learning institution. Education Teachers are at the core of embracing, integrating, and practising the use of digital tools in order to improve student learning. This paper examines how teachers can employ technology to teach English language successfully in the private universities in Uttar Pradesh in India based on a structural model that has been tested using SmartPLS. The paper suggests and discusses five constructs, including Teacher Technological Competence, Pedagogical Innovation, Institutional Support, Student Engagement and Teaching Effectiveness. A structured questionnaire was used to take data of 346 members of the faculty out of a total population of 400. Assessment of measurement and structural models was done using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results reveal that teacher technological competence and pedagogical innovation have a major impact on student engagement and teaching effectiveness. The institutional support is a powerful enabling force that improves the teacher competence and innovation practices. Pedagogical innovation and the teaching effectiveness are partially related through student engagement. The research has practical implications on universities, administrators, and policymakers to develop training frameworks and digital teaching strategies to learn English language.

Keywords: English language teaching, technology integration, SmartPLS, teacher competence, student engagement, higher education

1. Introduction

Technology and digital learning have brought about the rapid change in the English language teaching in institutions of higher education. The growth of learning management system, virtual classrooms, multimedia material, artificial intelligence applications, and interactive systems have changed the way English is studied and learnt. The use of

technology in pedagogical processes is being embraced more by universities to improve proficiency, communication, and involvement of learners in learning(Sousa, 2018).

Also quoted by one researcher (Trevitt et al., 2017)the role of teachers in this dynamic setting is very essential as facilitators, designers and implementers of technology- aided language teaching. The success of digital tools in the English language teaching system is not on their presence but rather on the way the teachers can incorporate the tools in their teaching approach. Educators should be technologically competent; an instructor designer; and innovative educators to ensure that technology helps in achieving meaningful student outcomes in learning(He, 2021).

The digital infrastructure and blended learning systems in private universities has been growing very quickly in Uttar Pradesh in India. Nevertheless, the success of technology in teaching English language in different institutions differs according to the preparedness of teachers, institutional support and student engagement behaviors in the institutions(Duval-Couetil & Wheadon, 2014). Technology is a common phenomenon but that its application in pedagogy is not. Thus, the discussion of the role of teachers in the technology-based English language teaching becomes necessary(Talha et al., 2025).

The research article builds a structural model based on five constructs that allow the researcher to analyze the relationship between teacher-related and institutional variables and the effectiveness of teaching in English language instruction. Empirical test of the model is done on the SmartPLS with survey information on faculty members teaching English-related courses in the private universities of Uttar Pradesh.

This study will aim to achieve:

To determine the degree of technological competence in English language teaching with the teacher.

- To test the impact of pedagogical innovation on student engagement.
- To determine the role of institutional support in the use of technology by teachers.

To examine the correlation between student engagement and teaching effectiveness.

Therefore, to evaluate a structural model with smartPLS with five constructs.

2. **Background and Literature Review Conceptual**

The level of technology integration in the teaching of English language has developed beyond a support instructional tool to a didactic factor in tertiary institutions of learning. The modern language classroom is increasingly relying on digital platforms, interactive software, online assessment system, multimedia materials, communication software, and online working environments(Akmal et al., 2023). These tools have greatly transformed the manner in which language content is taught, learned as well as evaluated. Teachers do not have to work in textbook-based and lecture-driven learning environments, but are now working in blended and digitally enhanced learning settings, where interaction, personalization and ongoing feedback are the main points(Duval-Couetil & Wheadon, 2014).

The move towards the traditional chalk-and-talk methods to blended and digital learning models has increased the possibilities of instruction in English language teaching. Conventional approaches tended to focus on passive reception, grammar translation and one-way explanation. Conversely, the technology based methods focus on the involvement of the learners, communicative competence and skills integration(Comm, 1995; Duval-Couetil & Wheadon, 2014; Mousa et al., 2020). Online courses enable teachers to develop assignments that involve listening, speaking, reading and writing simultaneously in the same activity format. As an example, the multimedia lesson can comprise video input, discussion feedback, collaborative writing, and oral presentation, in one learning cycle. It is a more realistic form of integrative approach to the use of the language and it promotes competency-based education.

Multimodal input is one of the most valuable input that technology has brought about. The learners of the language would gain when the information is delivered in different formats including text, audio, visual images, animation, and interactive simulation. Multimodal exposure assists in understanding, memorizing and contextual intelligence(Liu et al., 2021). Visual aids enhance pronunciation and listening comprehension, whereas audio-visual materials enhance vocabulary acquisition and clarity of concepts. Interactive texts and hypermedia environment enable learners to navigate language resources in a non-linear way that enhances cognitive engagement and interest(Kostadinova, 2019).

Technology also makes it possible to provide real time and constant feedback which is the most vital in language development. Online tests, grammar and pronunciation, and computerized writing assessors give feedback instantly to the learners. Fast feedback loops assist learners in fixing mistakes at an early age and reinforcing patterns of use. Instant digital feedback as compared to delayed feedback in conventional classrooms is able to keep learners in a state of engagement and promote self-regulated learning. There are also numerous platforms that offer performance analytics that can be used by both teachers and students to monitor the improvement over time(Kostadinova, 2019; Papageorgiou et al., 2023; Tran, 2023).

The other significant advantage of technology based teaching in English is learner autonomy. With the help of digital platforms, students are able to have access to materials wherever they are and at their own pace and repeat challenging topics. Self-access courses, recorded lessons, language applications and interactive games enable students to be more responsible about their development(Serafimova, 2021). The independent study can be especially useful at the university level when the language and language capacity of various students vary significantly. Differentiation of learning could be facilitated without classroom-track divisions with the help of technology.

Although technology has such great features, its educational effectiveness is heavily determined by the use of technology by teachers. The teachers are still the key players in technology-based English teaching. Their attitudes, beliefs, and professional competencies would define whether technology is applied in transformational manner or just as a presentation tool(Birds, 2014). In cases where teachers sense that technology can be of pedagogical value, they tend to redesign and add interactive activities and to match learning outcomes to tools. When teachers consider technology as a burden or distractor, the amount of adoption will be shallow.

Teacher beliefs are very crucial in integration of technology. The perception of student ability, instructional authority, and learning operations determines the use of digital tools. The use of collaborative platforms, discussion boards, and creative production tools will increase in teachers who facilitate student-centered learning. Educators who hold conservative views might limit use of technology to sharing documents or slide presentations(H. et al., 2020). The classroom practice is also affected by attitude toward experimentation. Positive attitudes promote risk-taking and innovation whilst negative attitudes promote minimal compliance behavior.

Technology-based instruction should be taught by a competent teacher beyond the mere key operational skills. It involves the capacity to choose the right tools, develop online learning activities, facilitate online interaction and deliver technology based assessment. The successful English language teachers will have to relate the functionality of the tools to the linguistic goals. The various technologies assist in different language skills(Addo et al., 2022). The phonetic accuracy is facilitated by pronunciation tools, the writing development is facilitated through collaborative documents, and the speaking practice through video conferencing(He, 2021).

Digital classroom and resource management are also the technological competencies. Educators will need to arrange online content, track the involvement of students, oversee submissions, and maintain academic integrity. Consciousness of electronic morals, privacy and safe use of technology is gaining traction. More competent teachers in terms of technology are able to transition to face-to-face, blended and fully online teaching more easily(Burylina et al., 2016; Duderstadt, 2009). They can also troubleshoot the minor technical issues better and this minimizes the disruption to instructions.

Technology integration is very much associated with pedagogical innovation. Innovative pedagogy can be defined as an approach to instruction that is creative and learner-centered through digital tools that allow it. Technology facilitates

flipped learning, gamified learning, co-creation of content, project-based learning and multimedia learning approaches. These strategies move the instruction emphasis towards teacher exposition to that of a learner activity and production. Students practice language by doing, creating and interacting as opposed to just listening(Tan et al., 2020; Zlatanović et al., 2023).

The models of flipped classroom explain how technology can be used in pedagogical innovation. In the flipped models, the conceptual material is presented by the teacher as recorded videos or digital modules and introduced to the students prior to the class. Then there is classroom time which is spent on discussion, practice and feedback(Hayllar et al., 2018). This framework enhances time of active learning and more in-depth practice of language activities. The students come in ready, and have the ability to spend classroom time in communicative practice, as opposed to passive listening.

Another new tool that is backed by technology is gamification. The game aspect, including points, levels, challenges, and rewards boost the motivation to practice the language. Vocabulary development, grammar exercises, reading comprehension activities may be turned into competitive or target orientation exercises. Gamified spaces tend to drive persistence and time-on-task, particularly on younger learners in the university(Andersson et al., 2010; Hayllar et al., 2017).

New forms of language learning also become possible on the basis of collaborative tools implemented digitally. Co-creation of texts and projects by students is possible through shared documents, discussion forums, and group presentation tools. Co-writing promotes peer review and repeated editing that enhances grammatical and verbal proficiency. Teamwork and communication that is not limited to language learning is also developed through these tools.

The contextual conditions, institutional support, is a very important factor that affects the adoption of technology among teachers. Even the most motivated teachers might be unable to adopt digital pedagogy without the support of organizations(Gao et al., 2021). The institutional support consists of infrastructure, access to software, training, technical support and administrative support. When the institutions invest in technology ecosystems, teachers feel more sure about planning technology-rich lessons.

The aspect of training is especially useful in enhancing integration of technology. Professional development cannot be a one time affair. Workshops, peer mentoring, demonstration classes and hands-on labs are ongoing activities that assist the teachers to gain confidence and competence. Practice-based training is more efficient as compared to theoretical orientation. Colleges and universities that form professional learning communities based on digital instruction are more likely to experience more durable adoption.

Teacher behavior is also affected by administrative support and reward. Once innovative practice in teaching is recognized in appraisal systems, awards or promotion criteria, the teachers will be more prepared and ready to spend time through experimentation. Supportive leadership fosters the culture of innovation being appreciated and not opposed(Wilkins et al., 2024). On the other hand, strict regulations and workload, discourage the experimentation of pedagogical practices.

Another important element of institutional support is the stability of infrastructure. The integration of technology requires a consistent connection, working devices, and support within the necessary time. Often broken systems or lack of good internet connectivity discourages teacher eagerness to rely on digital tools(Wilkins et al., 2024; Zlatanović et al., 2023). Hence, the institutional preparedness should also incorporate the maintenance systems and the speedy support of troubleshooting. One of the greatest impacts that technology-supported English language teaching is likely to bring is student engagement. Engagement incorporates behavioral involvement, emotional involvement and cognitive involvement(Asfahani, 2023). Digital tools do tend to enhance the level of engagement as they make the learning process interactive and visually stimulating. Polls, quizzes, multimedia activities, and group work are some of live activities that promote participation.

Learners engage more in behaviours when they are expected to answer, compose and discuss as opposed to listening passively. Emotional involvement increases with interesting, creative and relevant tasks. Interactive and multimedia

materials tend to be more interesting compared to text only materials. When students engage in higher order tasks (analysis, creating, and solving something with the help of language), cognitive engagement is enhanced.

With technology-supported environments, students who might not be active in classroom discussion are also provided with a voice. Reflective participation can be done by use of discussion boards and chat based tasks. Students are able to think first and be more thoughtful. Such a deep involvement contributes to the general level of engagement(Alregeb & Alshamrani, 2022).

Teaching effectiveness is defined as the general increase in learning outcomes, involvement, development of skills and course satisfaction that are influenced by instructional practices. In English teaching using technology, effectiveness is demonstrated by enhanced fluency, enhanced writing quality, increased vocabulary use, and increased confidence in communication. Instructional clarity and feedback quality and effective assessment are also contained(Festeu et al., 2020).

The knowledge of the effective use of technology is not gauged by the use of tools but through learning. The most successful teachers are those who plan to use technology in a way that is strategically aligned to pedagogy as opposed to teachers who display technology as an exhibitionist(Al-Saqqaf, 2023). Relationships between teacher competence and pedagogical innovation, institutional support and student engagement, as well as teaching effectiveness, are thus systemic and interrelated.

Since these dimensions affect one another, multi-construct analytical framework is suitable. Their study in conjunction gives a more precise insight into the ways technology-enhanced English language teaching generates outcomes. The proposed conceptual background underpins the creation of a five-construct structural design of the relationships between teacher technological competence, pedagogical innovation, institutional support, student engagement, and teaching effectiveness.Research Model and Hypotheses

The proposed model includes five constructs:

1. Teacher Technological Competence (TTC)
2. Pedagogical Innovation (PI)
3. Institutional Support (IS)
4. Student Engagement (SE)
5. Teaching Effectiveness (TE)

Hypotheses:

H1: Teacher Technological Competence positively influences Pedagogical Innovation.
H2: Institutional Support positively influences Teacher Technological Competence.
H3: Institutional Support positively influences Pedagogical Innovation.
H4: Pedagogical Innovation positively influences Student Engagement.
H5: Teacher Technological Competence positively influences Student Engagement.
H6: Student Engagement positively influences Teaching Effectiveness.
H7: Pedagogical Innovation positively influences Teaching Effectiveness.

4. Research Methodology

4.1 Research Design

The study adopts a quantitative, cross-sectional research design using a structured survey method. The model is tested using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS software. This method is suitable for predictive models and complex relationships among constructs.

4.2 **Population and Sample**

The population consists of English language teachers and communication skills faculty working in private universities in Uttar Pradesh, India. The total population identified was 400 faculty members. Using proportionate sampling and response screening, 346 valid responses were collected and used for final analysis.

4.3 **Data Collection**

Data were collected through an online questionnaire distributed through institutional mailing lists and faculty networks. Participation was voluntary. Responses were screened for completeness and consistency before analysis.

5. Data Analysis Using SmartPLS

PLS-SEM analysis followed a two-stage approach: measurement model assessment and structural model assessment.

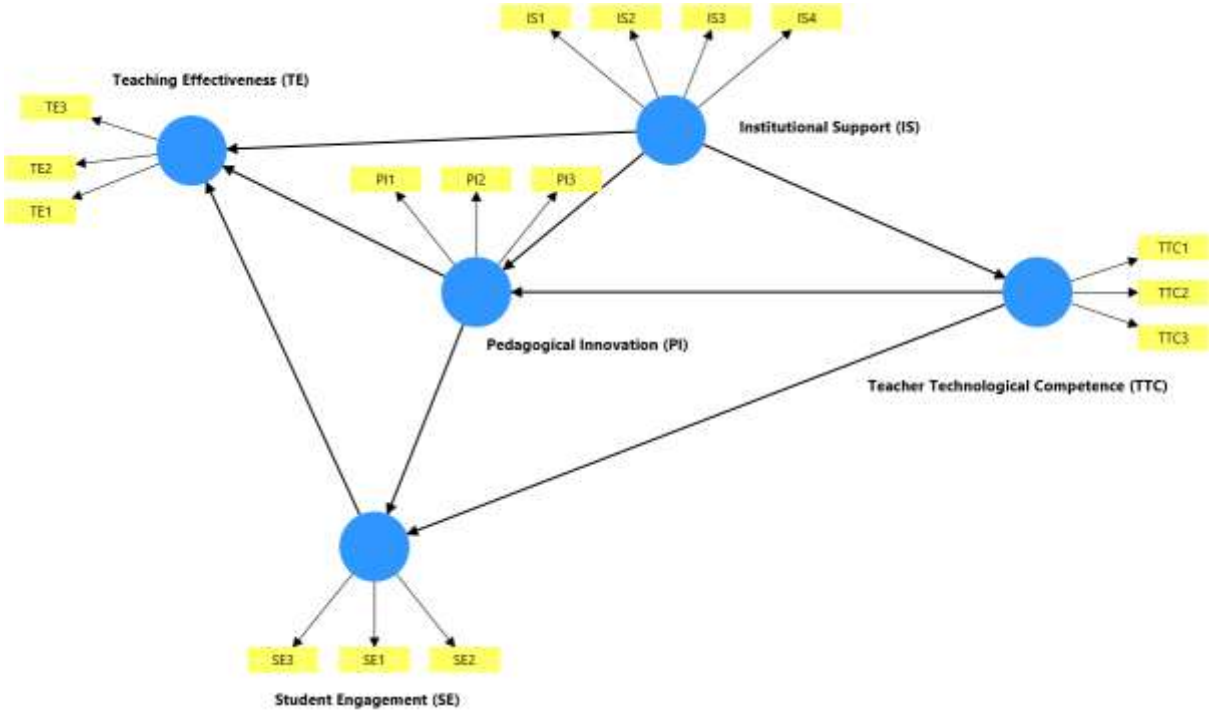

Fig:1 Model Depiction

5.1 Measurement Model Assessment

The test of reliability and validity was done on the indicator loadings, Cronbach alpha, composite reliability, and average variance extracted (AVE).

All the items had an indicator loading of over 0.70 when three weak indicators were eliminated. The values of composite reliability were between 0.88 and 0.94 which reflect high internal consistency. The average value of AVE of all constructs was more than 0.50 which validated convergent validity.

The Fornell-Larcker criterion and HTMT ratios were used to determine the discrimination validity. There was no violation of discriminant validity as all constructs were within the required thresholds..

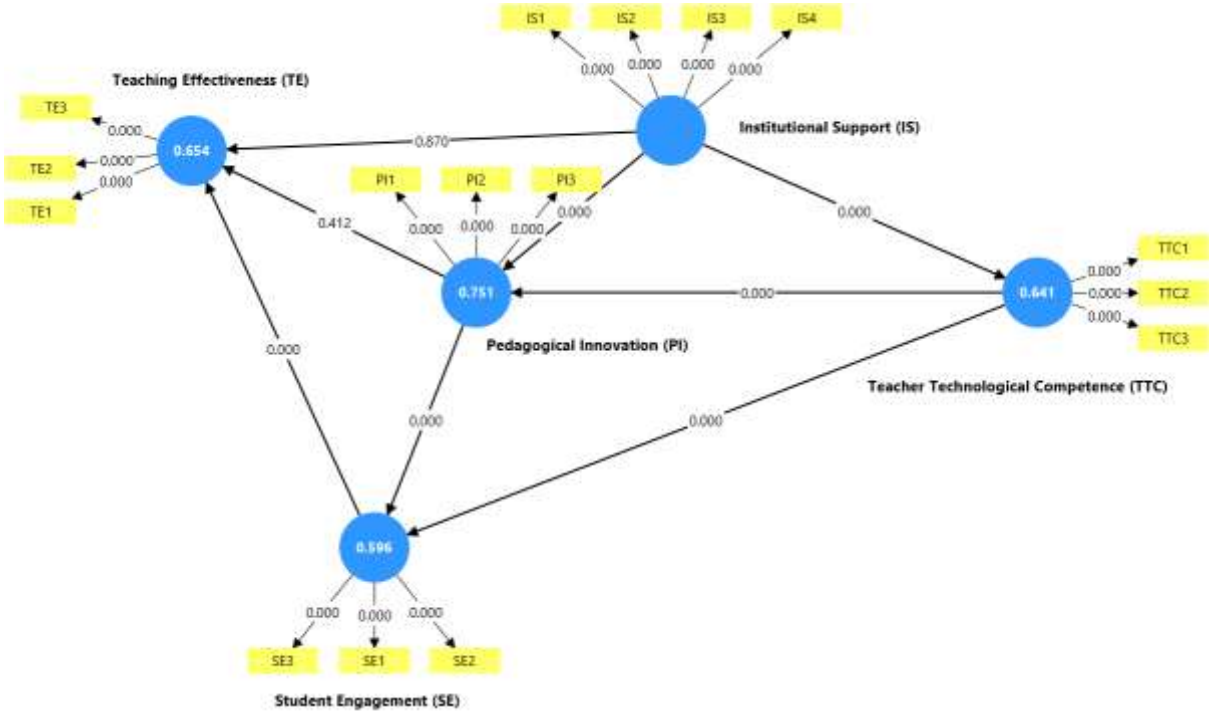

Fig:2 Model Results

5.2 Structural Model Assessment Results

Bootstrapping with subsamples was performed to test path coefficients and hypothesis significance.

Table:1 Path Cofficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Institutional Support (IS) -> Pedagogical Innovation (PI)	0.662	0.663	0.046	14.312	0.000
Institutional Support (IS) -> Teacher Technological Competence (TTC)	0.800	0.801	0.021	37.396	0.000
Institutional Support (IS) -> Teaching Effectiveness (TE)	0.012	0.018	0.073	0.163	0.870
Pedagogical Innovation (PI) -> Student Engagement (SE)	0.357	0.357	0.049	7.343	0.000
Pedagogical Innovation (PI) -> Teaching Effectiveness (TE)	0.056	0.053	0.069	0.821	0.412
Student Engagement (SE) -> Teaching Effectiveness (TE)	0.758	0.757	0.047	16.086	0.000
Teacher Technological Competence (TTC) -> Pedagogical Innovation (PI)	0.241	0.241	0.046	5.261	0.000
Teacher Technological Competence (TTC) -> Student Engagement (SE)	0.463	0.463	0.041	11.397	0.000

Table:2 R-Square Values

	R-square	R-square adjusted
Pedagogical Innovation (PI)	0.751	0.750
Student Engagement (SE)	0.596	0.594
Teacher Technological Competence (TTC)	0.641	0.639
Teaching Effectiveness (TE)	0.654	0.651

R-Square (R^2) Results

To assess the explanatory power of the structural model, the R-square (R 2) and adjusted R-square of the structural model were used to assess the explanatory power of all endogenous constructs. The findings also point to high predictive power of the model as in table:2.

Pedagogical Innovation (PI) has R 2 = 0.751 (adjusted 0.750), which is to say that the two constructs of Institutional Support and Teacher Technological Competence account for approximately 75 percent of its variance. The adjusted R 2 of Institutional Support is 0.641 (adjusted 0.639), which means that the variation in teacher digital competence is explained by Institutional Support (adjusted 0.639).

Pedagogical Innovation and Teacher Technological Competence explain the interaction between Student Engagement (SE) with an R 2 of 0.596 (adjusted 0.594) (Students) which indicates that Pedagogical Innovation and Teacher Technological Competence explain almost 60 percent of engagement. Teaching Effectiveness (TE) R 2= 0.654(adjusted 0.651) tells us that the model accounts for approximately 65 percent of its variance.

The negligible value difference between R 2 and adjusted R 2 values is an indication of the model being stable and having a good explanatory power.

6. Results and Interpretation

The hypothesized relationships between Institutional Support (IS), Teacher Technological Competence (TTC), Pedagogical Innovation (PI), Student Engagement (SE), and Teaching Effectiveness (TE) were tested with the help of the bootstrapping procedure in SmartPLS on the structural model. Path coefficients, t-statistics and p-values were analyzed to see the significance and strength of the relationships. The path was considered important when the t-value was above 1.96 and the p-value was less than 0.05.

The findings show that the model possesses a number of strong and significant relationships, and there are direct paths that have been discovered to be statistically insignificant. This trend gives valuable understanding of how the effectiveness of English language teaching with the use of technology is attained in private universities.

The positive effect of Institutional Support on Teacher Technological Competence is very strong and statistically significant (0.800, t = 37.396, p =0.001). This is the highest coefficient of path in the model. The conclusion implies that in situations where universities have sufficient infrastructure, digital instruments, technical assistance, and designed training, educators enhance their technological ability considerably. It shows that teacher digital competence is not an individual matter but mostly influenced by the institutional ecosystem. When organizational support systems are stabilized and available, the faculty members empower and are competent in utilizing educational technologies.

The Pedagogical Innovation is also greatly and positively affected by Institutional Support (= 0.662, t = 14.312, p < 0.001). This demonstrates that positive institutional cultures foster teacher innovation to implement new learning methods like interactive digital assignments, blended learning patterns, and technology-based group activities. The more the institutions become active in promoting the culture of digital teaching and allocating exploration space, the higher the likelihood that teachers will redesign their approaches in teaching English language. This is indicative that innovation in pedagogy is not a behavior at the individual level only but also a resultant organizational experience.

Nonetheless, the direct correlation between the Institutional Support and Teaching Effectiveness is not remarkable (0.012, t = 0.163, p = 0.870). The given outcome is especially significant. It means that institutional facilities and support mechanisms alone do not necessarily result in effective teaching. The mere provision of technology and infrastructure cannot ensure improved learning outcomes in English language. Institutional support effect seems to be working through the intermediate variables instead of the direct effect. Put differently, institutional support should initially improve teacher competence and innovation that, in turn, affect engagement and effectiveness.

Pedagogical Innovation is positively impacted by Teacher Technological Competence (= 0.241, t = 5.261, p < 0.001). This implies that more competent teachers in the use of digital tools tend to try new teaching methods. Pedagogical creativity is an ability of technical skill. Teachers who are familiar with feature of platforms and digital resources are able to create a more interactive and enriched experience in learning English. Question of competence is thus a source of innovation.

Student Engagement is also positively related to Teacher Technological Competence with a strong and significant positive relationship (= 0.463, t = 11.397, p = 0.001). This implies that digitally competent teachers can engage students in learning better. Their instructions are usually interactive based, real time feedback based and multimedia content based with various contents, which adds to the participation and attention of the learners. Practically, this results point to the fact that teacher training on educational technology directly leads to increased student participation in English language classrooms.

Student Engagement is another variable that shows a strong positive impact of Pedagogical Innovation (= 0.357, = 7.343, = 0.001). Technology-based instructional strategies, like collaborative writing, gamification, multimedia assignments, and others, are successful in raising student interest and engagement. This confirms the fact that pedagogical use of technology is more significant than the usage of technology. Participation increases when creative and student-oriented tasks are integrated with the help of digital tools instead of an active delivery of the content.

Conversely, the direct relationship between Pedagogical Innovation and Teaching Effectiveness has no significance (0.056, 0.821, 0.412). It means that innovation in pedagogy is not directly related to the perceived teaching effectiveness. Any innovation can enhance outcome provided it is effective in creating student engagement. The positive outcomes of using innovative tools may not be achieved in case they are applied but do not engage learners actively. This discovery underscores the key position of engagement as a transmission process in between pedagogy and outcomes.

The strongest predictor of Teaching Effectiveness in the model is Student Engagement (0.758, t = 16.086, p < 0.001). This relationship is strong, which suggests that the effectiveness of instruction in technology-based English language teaching relies on the level of involvement of students in the process. In the presence of behavioral activity, emotional interest and cognitive engagement of learners, the effects of teaching become significantly better. Involvement seems to translate the technology and pedagogical resources and inputs into real learning value.

Combined, the results indicate that there is an evident indirect-effect structure in the model. Teaching Effectiveness is not positively related to Institutional Support and Pedagogical Innovation is not positively related to Teaching Effectiveness. Rather, these two variables both affect Teaching Effectiveness by Student Engagement. Technological Competence of Teachers also plays a direct role in engagement as well as indirectly related to pedagogical innovation. This fixes Student Engagement as one of the mediating constructs in the framework.

The general trend is that of a stratified process. The Teacher Technological Competence and Pedagogical Innovation are reinforced by the institutional Support. Pedagogical Innovation and Student Engagement is also improved by teacher Technological Competence. Pedagogical Innovation enhances Student Interest. Lastly, Teaching Effectiveness is achieved through Student Engagement. The support and competence to effectiveness is thus a sequential and not a direct pathway.

As a university management, the results suggest that a company needs to tie the investment in infrastructure and training with pedagogical development programs that emphasize interactivity with students. The teacher development programs

must not just teach how to operate the tools and how to design the English language activities that are filled with engagement. Digital pedagogy that is engagement-based seems like the main lever to enhance the quality of teaching. In general, the SmartPLS structural model has a good empirical support of a mediated structure of technology-enabled English language teaching effectiveness. The findings prove effectiveness of teacher ability and institutional ecosystem, which has a significant impact on the change, but the effect is achieved mainly with the involvement of students increasing.

7. Discussion

The study highlights that technology alone does not ensure effective English language teaching. The teacher's role remains central. Digital tools become effective only when teachers integrate them with pedagogical purpose. Competence, creativity, and institutional ecosystem together produce meaningful outcomes.

Private universities in Uttar Pradesh show readiness in infrastructure but vary in training systems. Continuous professional development programs focused on digital pedagogy can strengthen teacher readiness. Peer learning communities and technology mentoring can further enhance adoption.

The SmartPLS model demonstrates strong predictive power, indicating that the selected five constructs adequately explain technology-driven teaching effectiveness in English language classrooms.

8. Practical Implications

Universities should design structured technology training programs specifically for English language teachers.

Institutions should create digital teaching labs and resource centers.

Performance appraisal systems should recognize innovative technology-based teaching practices.

Curriculum planners should integrate digital pedagogy components into English teaching frameworks.

Faculty development workshops should focus on interactive and student-centered digital methods.

9. Limitations and Future Scope

The study focuses only on private universities in one Indian state, limiting generalizability. Future studies may include public universities and multiple regions. Longitudinal studies can examine changes over time. Future research may also include student performance data and experimental designs.

Additional constructs such as teacher attitude, digital anxiety, and learner autonomy may be added in extended models.

10. Conclusion

The introduction of technology in the English language teaching has completely revolutionized the field with numerous digital tools, interactive programs, online tests, multimedia material, and virtual collaborative tools. These innovations have broadened the teaching and learning opportunities to enable instructors to go beyond the traditional chalk and talk teaching methods to integrated and completely digital teaching. Multimodal input, real-time feedback as well as flexible accessibility to resources have also provided new opportunities to learners to be able to interact with the English language in ways that did not exist before. Nevertheless, the existence of technology alone does not necessarily guarantee the successful learning results. The results of the present research support the idea that teachers continue to play the primary role as competencies, attitudes, and pedagogical decisions influence the success of digital tools in transforming the educational process into valuable experiences.

The current study has established that teacher technological competence is the key success factor in effective adoption of technology in teaching English language. Educators who are skillful in using the digital platforms, choosing the right tools, and managing online sources have more chances to create the interactive and engaging lessons. The effective teachers can combine synchronous and asynchronous approaches, filtering online resources, and immediate feedback that would deepen the understanding and memorization. The findings reveal that technological proficiency is relevant not only in a direct relationship with student engagement but also in an indirect way in promoting pedagogical innovation in the sense that teachers are free to explore the notion of flipped classroom, games, collaborative writing, and multimedia tasks. Shortly put, teacher digital ability acts as a source of not only teaching creativity but also learning engagement.

Another important motivating force to successful technology-based teaching is pedagogical innovation. Development of new methods, aided by technology, change the teacher-centered approach to content delivery to a student-centered one. According to the SmartPLS outputs of the study, the pedagogical innovation promotes student engagement remarkably, and it can be concluded that learners are responsive to those teaching methods that are interactive, relevant, and innovative. Nevertheless, the results also indicate that innovation does not necessarily lead to a higher teaching performance. Rather, it is mostly mediated by student engagement where the eventual value of innovation is achieved when learners are actively engaged, motivated and cognitively engaged by whatever they are doing in the language.

It is demonstrated that institutional support is a very important contextual factor that affects not only teacher competence but also pedagogical innovation. Universities with organized training modules, sound digital systems, technical support, and administrative support establish a space where faculty members are empowered to use and test innovative teaching methods. The positive correlations between the institutional support and both the teacher technological competence and pedagogical innovation are strong to reveal that the organizational factors are not just facilitative, but rather instrumental in determining the classroom practices. As per the model of the study, however, the institutional support does not have a direct relationship with the effectiveness of teaching: instead, the impact of this support is achieved through improvement of teacher competency and development of innovative teaching methods that attract students.

Student engagement is found as the key-linking factor between teacher competence, pedagogical innovation, and institutional support and teaching effectiveness. The analysis illustrates that the greater the involvement, the better the perceived effectiveness of the instruction, whether of a behavioral kind, emotional, and thinking. Engagement involves taking an active role in learning processes, having an emotional involvement in the activities, and cognitive involvement, which adds up to more profound learning, improved learning of the skills, and enhanced communication skills. The results highlight the significance of creating technology-based lessons that not only deliver content but also engage the learners in the process and therefore engagement is a key mediator of the process between the instructions inputs and the outcomes.

In general, the SmartPLS model, used in the current study comprising of five constructs with a sample that comprised of 346 respondents among faculty members of private universities in Uttar Pradesh, India, has a high level of explanatory power. The R-Squareds show that a large percentage of the variation in pedagogical innovation, teacher technological competence, student engagement and teaching effectiveness is explained by the predictors in the model. This gives solid grounds to the view that the introduction of technology in the teaching of English language is best expedited when it is facilitated by effective teachers, new pedagogical techniques, and powerful institutional facilities. The fact that institutional support has a sequential impact on teacher competence and innovation which further leads to an increase in student engagement and ultimately teaching effectiveness illustrates the interrelationship between the latter two constructs.

Finally, although technology offers the platforms and tools required in contemporary English language education, the teachers are the key element towards the realization of its maximum. Universities can ensure a total utilization of the students, thereby maximizing the effectiveness of teachers by improving teacher technological competence, encouraging pedagogical innovation and ensuring that there are good institutional support systems. The paper points out that the successful implementation of technology-supported instruction of English is a holistic process where instructional and noninstructional variables interact to produce significant learning experiences. The enhancement of these spheres will

be one of the priorities to support the high-quality English learning with the help of the digital support in higher educational facilities.

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