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Teaching efficacy of using Microsoft Teams in virtual school education: Perceptions of teachers and students

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Abstract

The COVID-19 pandemic necessitated an abrupt transition to virtual learning environments. Microsoft Teams (MS Teams) was adopted by many educational institutions to maintain instructional continuity. This study aimed to explore the perceptions of teachers and students regarding the teaching efficacy of MS Teams, focusing on various educational aspects such as interaction, assessment, engagement, and platform usability. The study surveyed 110 teachers and 475 students using structured questionnaires to gather insights into their experiences with MS Teams during the pandemic-induced shift to online education. A multi-dimensional evaluation of knowledge of technology, effective planning for the virtual classroom, and assessment aspects of e-learning was conducted. The 'Online Teaching Efficacy Scale' (OTES), a five-point rating scale, was used to understand the efficacy of online teaching by teachers. Findings revealed that teachers were adept at using MS Teams for scheduling and task coordination but faced challenges with interactive tools and online assessment methods. Students appreciated multimedia-rich lessons and found the platform user-friendly but missed personal interaction and rated assessments as inadequate. While MS Teams supported virtual learning effectively, its full potential in teaching efficacy especially in engagement, assessment, and feedback remains underutilized, emphasizing the need for targeted teacher training in digital tools to enhance instructional effectiveness in virtual settings.

Keywords: Digital pedagogy, Microsoft Teams, Perceptions of teachers and students, School education, Teaching efficacy, Virtual learning.

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Contents

Contribution of this paper to the literature

This study contributes to digital education by evaluating teaching efficacy on MS Teams from both educator and learner perspectives using a structured, multi-dimensional framework and scale. It identifies underexplored gaps in digital pedagogy and assessment, providing new insights into targeted teacher training essential for effective blended learning in post-pandemic contexts.

1. Introduction

After four years of transformational developments at all levels of education, educators and researchers have been working hard to analyze the positives and negatives of the COVID-19 pandemic's effects. It has a lasting impact on school education, which is still reforming and reshaping the teaching-learning dynamics in the context of technology use and integration. While online remote education was inevitable during the lockdown, it remains relevant and essential within the changed landscape of blended learning in the new normal. At the outset of the pandemic, teachers faced several technological, pedagogical, and social challenges (Ferri, Grifoni, & Guzzo, 2020) in the school education scenario. The pandemic has accelerated the use of cloud-based apps, fostering a flexible approach to school education.

1.1. Virtual Education using Microsoft Teams

Today, the main focus of education is to integrate new technologies, such as various e-learning platforms like Moodle, MS Teams, Zoom, etc., to connect with students while they are in the safety of their homes. Singh and Awasthi (2020) reported that due to the COVID-19 pandemic, downloads of video conferencing platforms topped 62 million in March 2020. There are a variety of video conferencing platforms used for teaching, learning, and other purposes, including Zoom, Google Meet, MS Teams, Cisco Webex, etc. Online teaching and learning were undoubtedly the safest options to continue education during the pandemic. Many reviews highlight the pros and cons of online education; however, only a few studies discuss the perceptions of teachers and students regarding online learning using Learning Management Software. This paper explores the perceptions of both students and teachers regarding teaching efficacy when using Microsoft Teams (MS Teams) during the pandemic, which created a fully virtual teaching and learning environment.

MS Teams is a digital hub within Microsoft 365 that consolidates chats, meetings, files, and apps to support teaching and learning (Martin & Tapp, 2019). Though its features may seem complex, the platform reflects Vygotsky's (1978) concept of socially co-constructed knowledge. Knowledge building is achieved through shared ideas and collaboration, as emphasized by Zheng, Zhong, Niu, Long, and Zhao (2021). MS Teams supports this through tools for virtual interaction, material sharing, assignments, and assessments (Irhamni & Ashari, 2023). Rojabi (2020) highlights it as an innovative platform that enhances teacher-student interaction and fosters a positive online learning environment.

1.2. Teaching Efficacy in Online Teaching-Learning

Teaching efficacy refers to teachers' beliefs about their own proficiency, abilities, knowledge, competencies, or skills necessary for effective teaching. According to Tschannen-Moran, Hoy, and Hoy (1998), teacher efficacy is the belief in one's capability to perform teaching tasks effectively. The concept of teaching efficacy has its roots in the Social cognitive theory, Bandura (1977) stating the significance of self-belief in one's own capacities to motivate self and others. This is relevant to the educational space where teaching efficacy can trigger the learning stimulus in students for their advanced learning. Many research studies have proven the connection between teacher efficacy and learning outcomes (Kleinsasser, 2014; Moore & Esselman, 1992). The teaching efficacy varies with any task or process-related changes (Ross, 1994). Considering the recent pandemic situation caused by COVID-19, there was a forced shift to remote virtual learning from conventional physical classroom teaching. Sudden expected changes for running online schools, with altered pedagogical practices and assessments, raised concerns about the quality of education. Teaching efficacy in using technology plays a major role in managing learner engagement and providing an active learning environment. Teaching efficacy represents a teacher's self-belief about their own capacities and judgements in their abilities (Woodcock, 2011) to teach effectively. Teaching efficacy can be facilitated through faculty development (Hampton et al., 2020), teacher preparation (Tasan, 2001), and effective training (Almajnuni & Alwerthan, 2024; Fritz, Miller-Heyl, Kreutzer, & MacPhee, 1995). Teacher's efficacy can be observed, and it also affects classroom management (Hepburn, Beamish, & Alston-Knox, 2021). Self-efficacy is an important variable for effectively using technology in teaching, along with other variables such as outcome expectations (Perkmen, 2008). During the pandemic period, the lack of experience in conducting remote online classes and administrative processes, as well as the absence of physical connection with students, impacted teaching efficacy (Ma, Chutiyami, Zhang, & Nicoll, 2021). The present paper attempts to explore teaching efficacy in using various educational aspects of MS Teams as a virtual learning space, based on perceptions of students and teachers.

2. Literature Review or Background

Researchers studied teachers' efficacy in an online teaching environment across various contexts.Teacher efficacy found to be associated with gender differences Šabić, Baranović, and Rogošić (2022) psychological point of view Santi, Gorghiu, and Pribeanu (2020) lack of support and resources Cardullo, Wang, Burton, and Dong (2021) personal successes and motivations for technology skill development Willis (2015) designing professional development programmes Thurm and Barzel (2020) formal, informal, and independent professional learning Barton and Dexter (2020) technology use and integration efforts Gomez Jr, Trespalacios, Hsu, and Yang (2022) support to design online instruction Baroudi and Shaya (2022) attitude towards technology use Clipa, Delibas, and Mâţă (2023) and sense of success Hershkovitz, Daniel, Klein, and Shacham (2023) along with many such psychological, pedagogical and technological variables. The effectiveness of e-learning was also scrutinized by INTTIC, where a sudden shift to complete e-learning due to the pandemic was studied. Their findings indicated that while e-learning offered flexibility and cost benefits, it lacked full effectiveness without active teacher involvement. Psychological challenges of lockdowns and students' lack of prior e-learning experience were major barriers, emphasizing the critical role of teacher interaction, even within platforms like Microsoft Teams, for maintaining instructional quality and student engagement. The vast literature resources available in this area thus reiterate the need for understanding teaching

efficacy and the use of technology for online learning. There is limited research on teaching efficacy from both teacher and student perspectives during the COVID-19 pandemic education, especially focusing on the use of MS Teams.

In today's world scenario, online learning has become an integral part of the educational landscape, providing learner-centric, personalized instructional approaches (Galoyan, Betts, Delaney, & Fourie, 2021). A recent study proposed that emerging innovations such as MS Teams will help engage students and fulfill their online needs. Research study of Chen, Lambert, and Guidry (2010) claimed that the use of MS Teams has a positive effect on student's participation and their learning outcomes. Martin and Tapp (2019) confirmed that for online teaching, one of the most essential elements is being proactive and utilising the resources at one's own institution. The authors have even discussed the teaching methods of award-winning tutors who claimed to use a range of tools for effective learning in asynchronous and synchronous modes. These tools include MS Teams, WebCT, Canvas, Desire2Learn, Blackboard, and Moodle. However, they emphasized that the role of the teacher and their involvement, along with students, is far more important regardless of the tools used. Rojabi (2020) conducted a research study with 28 students of open university, to understand students' perception of online learning via MS Teams. Conducted a comprehensive evaluation of the implementation and efficiency of online applications in public schools in Hue City, Vietnam. The study, which involved 192 teachers, categorized the use of online applications into key teaching activities such as warm-up sessions, knowledge building, practice exercises, and others. Findings revealed varying levels of implementation and effectiveness across these categories, highlighting the need for targeted improvement strategies to optimize digital teaching practices. This study emphasizes the importance of structured and purposeful application of technology tools like Microsoft Teams to enhance teaching efficacy.

Similarly, the examined relationship between online learning and student satisfaction in private universities during the pandemic. Surveying 900 students, the study found that familiarity and experience with learning conferencing software were major factors influencing student satisfaction. Interestingly, students with over two years of experience using such platforms reported greater satisfaction compared to newer users. Despite positive experiences, a preference for returning to face-to-face learning after the pandemic was evident, suggesting that while tools like Microsoft Teams can enhance online learning, they may not fully replace traditional classroom experiences. In the context of student engagement, the use of MS Teams in an Open and Distance e-Learning (ODeL) institution was explored. Analyzing student interactions during virtual sessions, it was found that encouraging student participation through platforms like MS Teams significantly bolstered engagement. The study emphasized the necessity for instructors to foster active participation to maximize the benefits of virtual learning environments, especially when online delivery has become predominant. Complementing these findings, student satisfaction with the combined use of synchronous and asynchronous learning via Learning Management Systems (LMS) was investigated. The study, involving 163 students, showed that a blend of both approaches resulted in higher satisfaction levels, improved knowledge, skills, and attitudes (KSAs), and stronger engagement. Given Microsoft Teams' capability to support both synchronous meetings and asynchronous resource sharing, this evidence points toward designing hybrid interaction models to maximize student outcomes in virtual education settings. The satisfaction with online learning at an Islamic higher education institution in Indonesia was studied. Their research introduced variables such as student commitment, independence, and parental support, finding that student commitment significantly influenced satisfaction, which in turn affected students' behavioral intentions towards online learning. These findings highlight the multifaceted nature of satisfaction in virtual education environments and suggest that beyond platform functionality, factors like student motivation and support systems are crucial for the perceived efficacy of tools like Microsoft Teams. A study was conducted on 124 undergraduate students by Gonzaga and Dawat (2023), indicating that the respondents rated MS Teams as effective and found its functions and assessment features useful. A recent research study of Shanmuga and Karthikeyan (2022) on a student's perspective to assess the efficacy of MS Teams during Covid-19 for online learning included 22 undergraduate students of computer science and engineering as respondents. The results of the study indicated that MS Teams is supportive and easy to use for fulfilling crucial aspects related to learning and gaining knowledge. At the same time, this study also pointed out those grey areas that are not very user-friendly and where there is scope for improvement. For example, students were comfortable in joining the theory papers using options like chat conversations and voice calling facilities, and performing objective assessments. However, the participants faced difficulties in learning the laboratory paper and submitting subjective answers. Overall, the participants considered MS Teams a better tool compared to other online platforms such as ZOOM, Google Meet, Cisco, Webex, etc.

Several studies have explored the use of Microsoft Teams (MS Teams) in education. Olugbade and Olurinola (2021) found that teachers perceived MS Teams as highly effective for classroom organization, assignments, grading, and student interaction. Multi-Country News Center (2020) noted that 183,000 educational institutions across 175 countries were using MS Teams, found to be the most promising Grynyshyna, Boiko, Boklan, Husakova, and Pozniak, 2023) and value for money (Singh & Awasthi, 2020) as compared to platforms like Zoom and Google Meet. Rababah and Rababah (2020) conducted focused group interviews with EFL students, highlighting both benefits, such as convenience and time efficiency and challenges like technical issues during specific tasks. Other studies revealed that learner attitudes significantly affect how they cope with external challenges, such as software errors or poor internet. Gohiya and Gohiya (2020) reported positive experiences among Indian students, with 98% noting timely learning and 80% understanding lessons clearly. Most researchers emphasized the positive aspects of online teaching through MS Teams, often outweighing the drawbacks. However, existing studies typically examined teacher and student perceptions separately and lacked structured parameters for analysis. Few studies combined both perspectives to validate findings, and in the Indian context, research on school students remains limited, with most focusing on college learners during the pandemic. MS Teams has been widely used by teachers for remote learning, yet research in the Indian context remains scarce. The limited scope of existing studies prompted this investigation into teaching efficacy using MS Teams. After a three-day training for teachers on effective MS Teams use, this study explores both teacher and student perspectives to assess its role in enhancing online teaching and learning.

In summary, existing literature demonstrates that while online platforms such as Microsoft Teams can effectively facilitate teaching and learning, their success depends heavily on strategic execution, active teacher-student interaction, students' prior experience and readiness, and the integration of both synchronous and asynchronous learning opportunities. These insights form a critical foundation for examining the perceptions of teachers and students regarding the teaching efficacy of using Microsoft Teams in virtual school education.

2.1. Research Questions

In the light of the above discussion, the major research questions are:

RQ 1: What are the teachers' perceptions of their personal teaching efficacy in using MS Teams for technology use, planning virtual classrooms, and assessment and evaluation to support their virtual teaching?

RQ 2: What are the students' perceptions of the teaching efficacy of using MS Teams with respect to creating an online learning environment, assessment, and evaluation to support their virtual learning?

3. Method

A descriptive survey method was adopted to understand the perspectives of teachers and students regarding teaching efficacy in virtual teaching-learning via MS Teams. This method is best suited for the present research study as it allows observation of teachers' and students' perceptions in a completely natural environment without interference.

3.1. Participants

This study was conducted through a central office that administers a group of schools under a private trust. To conduct the survey, purposive sampling was used for two main reasons. First, all the primary and secondary sections of the school were conducting their online classes on MS Teams. Second, the schools had adequate numbers of teaching staff and students to facilitate objective and efficient extrapolation of the results during the COVID-19 pandemic. A total of 110 teachers and 475 students participated in the study. The characteristics of teachers who participated in the survey are presented in Table 1.

Table 1. Demography of the teacher participants.

Demographic variables		Percentage
Gender	Male	12.72%
	Female	87.27%
Teaching grades	Primary and secondary	20.90%
	Only secondary	79.09%
Teaching experience	<5 years	31.81%
	5-10 years	58.18%
	10-15 years	10.00%

Among the 110 teachers surveyed, most were female (87.27%) and primarily taught secondary grades (79.09%), with 20.90% teaching both primary and secondary levels. In terms of experience, 58.18% had 5–10 years of teaching experience, 10% had over 10 years, and 31.81% were relatively new with less than 5 years of experience.

Another online survey was conducted to understand students' perceptions of using MS Teams, in which a total 475 students participated from the grades 6th to 9th, having 57% female students along with 43% male students, as depicted in the Figure 1a. Data were collected from students in three schools affiliated with different boards: Symbiosis Secondary School (Maharashtra State Board), Symbiosis School, Nashik (Central Board of Secondary Education), and Symbiosis International School (International Baccalaureate). State boards follow region-specific curricula, CBSE offers a uniform national curriculum, and IB follows a global, application-focused approach. Student representation was 43% from the State Board, 36% from IB, and 21% from CBSE, as shown in Figure 1b.

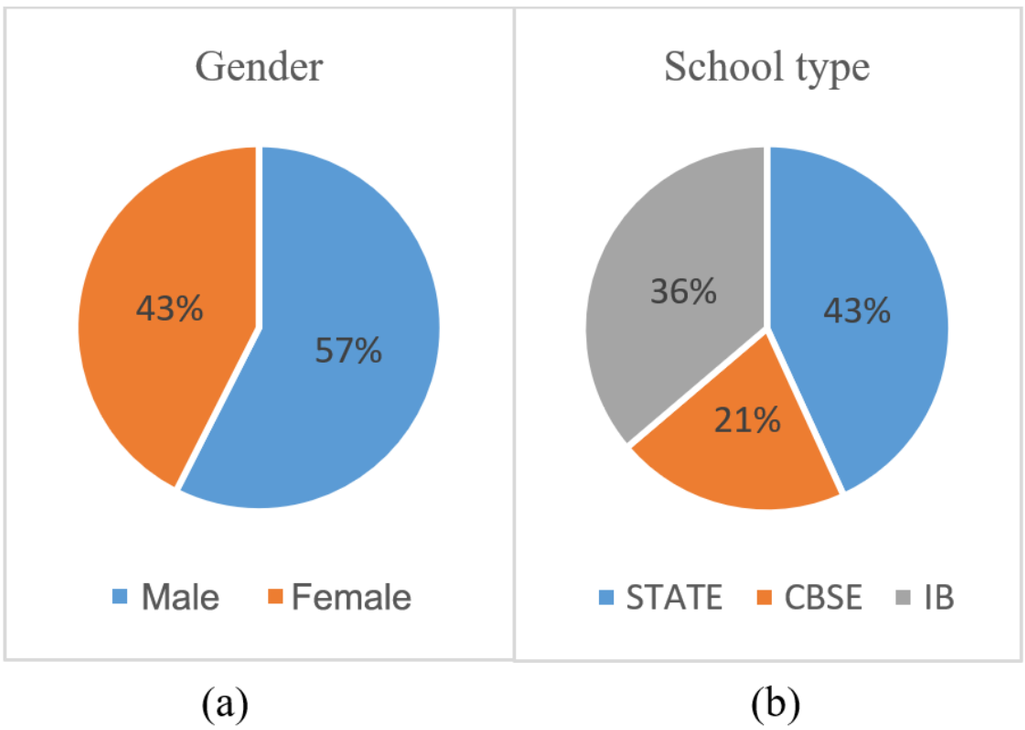

Figure 1. Distribution of student sample with respect to (a) Gender and (b) School board types.

3.2. Instruments and Data Collection

In the light of fulfilling the objectives, researcher-developed tools were used. A survey was conducted to assess teachers' efficacy in using MS Teams. A rubric was constructed to provide structured guidance to the respondent teachers for their self-assessment. This rubric supported a multi-dimensional evaluation of parameters such as knowledge of technology, effective planning for the virtual classroom, and assessment aspects of e-learning (Table

2). Various criteria were used for each dimension to evaluate the overall efficacy of teachers in using MS Teams for virtual teaching. All these criteria were decided based on rounds of informal discussions with experts and teachers regarding the 'what' and 'how' of online teaching using virtual platforms.

Table 2. Rubric for assessing teaching efficacy of using MS Teams.

Dimension	Criteria and descriptors
I - Technology use	- Proficiency in scheduling classes using MS Teams - Using calendar option Creating and sharing meeting links
	- Managing other office tools via MS Teams to make online classes engaging - Uploading and using tools (Word, PDF, Excel, PowerPoint, etc.) to share data and references via MS Teams. - Using audio-visual tools to support teaching - Creating/ Recording class content for asynchronous mode
	- Self-accessibility and providing access to others - Able to access Teams meetings via different devices with ease
II - Planning for virtual classes	- Visibility of students in online mode - Communicating with students maintaining virtual classroom etiquette - Navigation using Teams features of sharing screen, recording session, viewing raised hands or accessing chat box
	- Online interactive tools for making teaching learning effective - Using interactive tools such as Online Stopwatch, Direct Polls, Kahoot, etc. for making the teaching-learning process engaging - Using the tools various options such as Name Picker,Quiz show, Matching Game, etc. for making learning engaging. - Using group collaboration tools - Using tools for making videos interactive
III - Assessments in online teaching & learning settings	- Proficiency in using MS Teams for creating and conducting assessments - Creating assessments - Creating auto-timed quiz for ongoing formative assessment - Executing and organizing assessments, and collecting feedback with ease.
	- Online correction - Generating auto scores for correction - Collating results

Note: Scale: 3-point scale.
3: Works well, 2: Minor concerns, 1: Serious concerns.

The second research tool used was the Online Teaching Efficacy Scale (OTES), a five-point rating scale developed by researchers to assess students' perceptions of their teachers' online teaching efficacy. This rating scale was designed considering two major dimensions: the online learning environment and assessment and evaluation, both measuring the frequency of behaviors and actions by teachers in virtual learning using MS Teams. Details of the tool are presented in Table 3.

Table 3. Online teaching efficacy scale (OTES).

Dimension	Indicators	No. of items
I - Online learning environment	- Use of multimedia - One-to-one discussion - Peer interactions - Group assignments - Improved learning - Understanding expectations - Meeting expectations - Teaching strategies supporting learning improvement	8
II – Assessment and evaluation	- Feeling about online tests - Receiving online one-to-one feedback after evaluation to improve learning - Getting online scores in time - Difficulty in knowing scores after online tests or quizzes - Carrying out online tests/ Assessments - Difficulty in getting responses to the doubts/Queries - Raising doubts for better clarity - Assignments are fun and easy	8

Note: Scale: 5 Point scale
5: Always, 4: Often, 3: Rarely, 2: Never, 1: Not applicable.

The self-constructed research tools underwent pilot testing and expert review to ensure content validity before applying the research tool to the sample in the study.

3.3. Ethical Considerations

Prior to data collection, teachers and students were informed about the study's purpose, and formal approval was obtained from the schools. Participation was voluntary, with written consent and assurances of anonymity and confidentiality. Data were collected virtually via Google Forms, using rubrics for teachers and rating scales for students. The study adhered to ethical research principles, ensuring privacy and natural settings. Data were analyzed separately for teachers and students using frequency counts and percentages, and results were presented graphically with interpretations for each dimension of teaching efficacy.

4. Results and Discussion

Though virtual education grew rapidly post-COVID-19, research on teaching efficacy using platforms like MS Teams remains limited. Most studies focus on general online practices, lacking insights from both teachers and students. Addressing this gap, the present study explored teaching efficacy from both perspectives, revealing key findings to enhance virtual teaching, learning, and evaluation through MS Teams.

4.1. Teacher Perceptions

There were 110 secondary school teachers from whom responses were collected using a self-assessment rubric constructed to measure the teaching efficacy of using MS Teams for virtual education. Teachers evaluated themselves on certain parameters provided in the rubric.

4.2. Using Technology on MS Teams

Self-efficacy in integrating technology into teaching can be improved through training that is extensive and in-depth, providing technology-infused experiences (Williams, Christensen, McElroy, & Rutledge, 2023). It was essential to understand the use of technology tools when using MS Teams for virtual instruction and assessing teaching efficacy. In this context, the relevant aspects considered for gathering information aimed to determine *proficiency in scheduling online classes, managing other office tools via MS Teams* to make online classes engaging. It also included the *efficiency in accessing various options of MS Teams* as well as *providing access to students* to create a more engaging online classroom environment.

As shown in Figure 2, 92.72% of teachers were confident using MS Teams for scheduling and managing classes, while 70.85% found other tools effective. Notably, 95.15% could access MS Teams features proficiently, likely due to prior training post-COVID-19. This aligns with research highlighting the importance of professional development and a supportive school culture in successful technology integration (Mansour, Said, & Abu-Tineh, 2024).

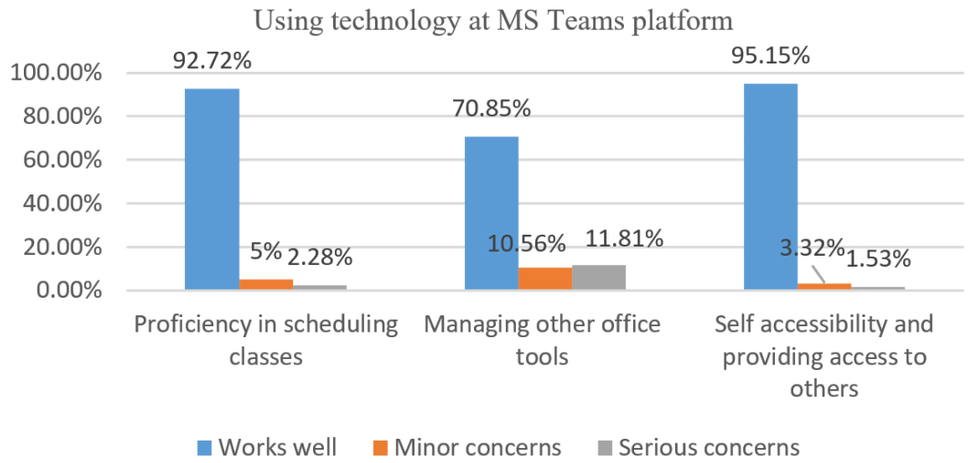

Figure 2. Teacher perceptions towards using the technology of MS Teams for conducting the online classroom.

As evident from the responses, there are serious concerns faced by teachers in managing other office tools via MS Teams to make online classes engaging. Using different Microsoft Office tools includes uploading various Office files, effectively utilizing audiovisual tools, and using Office features to record sessions for future reference.

4.3. Planning for Virtual Classrooms

Planning for virtual classrooms is essential for effective learning. Teachers' planning of tasks to use electronic tools in class activities leads to better student motivation and effective use of the tools (Torres Martín, Acal, El Homrani, & Mingorance Estrada, 2021).

Figure 3 represents the data collected from teachers in the context of planning for virtual classrooms. The responses revealed that most teachers can easily manage the online visibility of students and maintain online classroom etiquette, which helps in delivering content effectively. The serious concern faced by teachers was in understanding and implementing online interactive tools to make online teaching and learning effective.

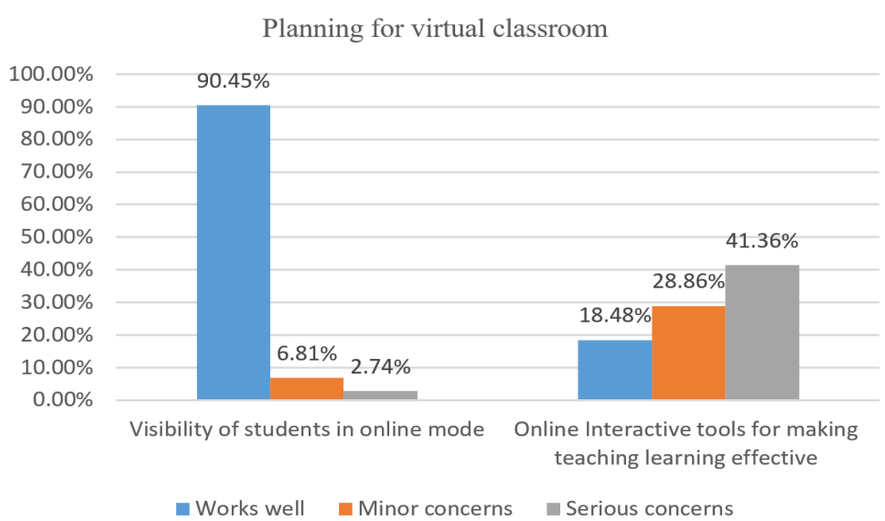

Figure 3. Teacher perceptions towards planning for virtual classrooms using MS Teams.

As shown in Figure 3, 41.36% of teachers faced major challenges using interactive tools, while only 18.48% used them effectively. This suggests that many are still adapting to online teaching. Limited familiarity with digital tools hinders classroom engagement. Strengthening e-leadership and providing ongoing training can boost teachers' confidence and effectiveness with technology (Lyons, 2004; Purnomo, Imron, Wiyono, Sobri, & Dami, 2023).

4.4. Assessment and Evaluation

With the commencement of online classes, another major aspect of virtual education is creating and conducting assessments. As depicted in the graph (Figure 4), only 39.39% of teachers can conduct online assessments without much hindrance, 17.75% of teachers considered it a serious concern, while 27.57% did not consider it a major concern.

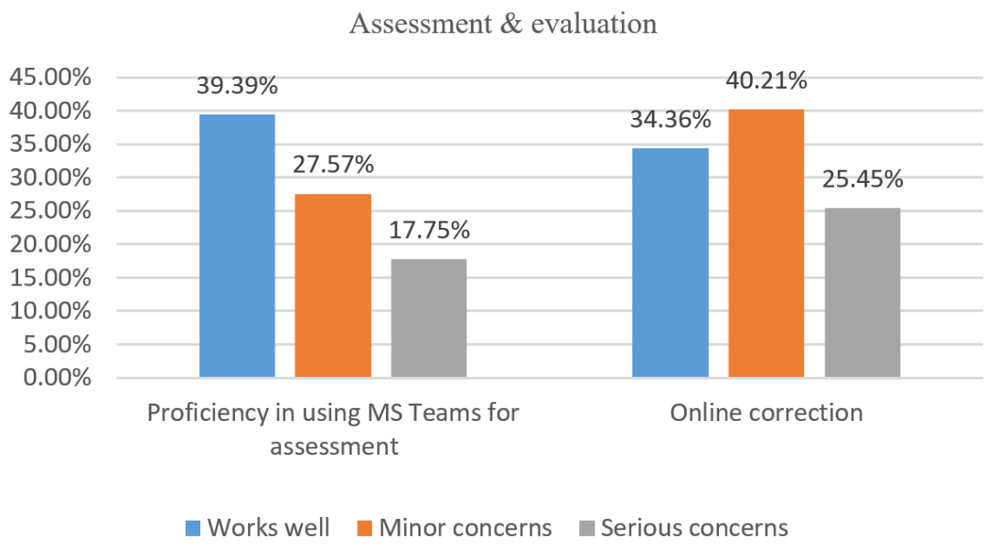

Figure 4. Teacher perceptions towards conducting assessment and evaluation using MS Teams.

The data suggest that while some teachers managed online assessments well, others faced challenges likely due to unfamiliarity with traditional methods. Adapting to digital evaluation takes time, but many teachers showed a commendable willingness to change. Research shows that professional development boosts teachers' tech confidence and self-efficacy (Stringer, Lee, Sturm, & Giacaman, 2025), indicating that further training and support can enhance online teaching effectiveness.

The major research findings to answer RQ1 are summarized as follows:

- Most teachers (92.72%) demonstrated strong proficiency in using MS Teams for scheduling and managing online tasks in virtual teaching and learning.
- Challenges in using other tools with MS Teams: While 70.85% of teachers could manage office tools well, 11.81% struggled, indicating a need for further training.
- Struggles with the use of interactive tools to enhance engagement: 41.36% of teachers find it difficult to use interactive tools. Only 18.48% of teachers are comfortable with these tools, and they are still adjusting to the requirements of virtual learning.
- Issues with online assessments: Conducting online assessments was challenging, with 25.45% of teachers facing serious concerns in online corrections, 40.21% encountering minor difficulties, and 39.39% managing efficiently. This highlights the need for specialized training focused on online assessments and evaluation using MS Teams.
- Adaptability and willingness to learn: Despite many challenges, teachers demonstrated adaptability in integrating technology and expressed the need for training in specific areas to improve teaching efficacy using MS Teams for online learning.

After a year of using MS Teams, 86.24% of teachers became proficient in managing classes, although some still struggled with other tools and lacked awareness of interactive features. This indicates that proficiency in MS Teams does not guarantee overall technological readiness. Supporting studies emphasize the importance of targeted training and collaboration with technology providers in enhancing teaching effectiveness, with evidence showing increased teacher confidence through structured technology courses. A descriptive post-facto study involving 400 school teachers measured their self-efficacy concerning three parameters: technological, pedagogical, and integration efficacy (Kundu, Bej, & Dey, 2020). Similarly, current research focuses on teachers' perspectives on using technology, planning for virtual classrooms, assessment, and evaluation to support virtual teaching. Student perceptions are also considered to go beyond teachers' self-assessment of teaching efficacy using MS Teams. A similar study in Ontario found that online teaching efficacy is linked to prior training and available support (Dolighan & Owen, 2021). Addressing these barriers can significantly enhance both teaching efficacy and the overall virtual learning experience on platforms like MS Teams.

4.5. Student Perceptions

Total of 475 students participated in the online survey to assess their teachers' efficacy in using MS Teams for virtual learning, focusing on two major aspects: creating an online learning environment and assessment and evaluation.

4.6. Creating Online Learning Environment

Favorable environment and positive beliefs about implementing the technology increase the utilization of technology (Xie et al., 2023). Online learning environments are virtually created through MS Teams to support learners in effective learning. This includes the use of different teaching strategies by teachers, meeting teachers'

expectations, the level of interaction, and online discussions. The most significant factors for effective online experiences are the attitudes and behaviors of instructors and students, along with the course designers (Hassan, 2021). It is a felt need in the field that teachers should better understand what information technology means to them (Milic & Simeunovic, 2023) and how they can implement it in their instruction. This reiterates the importance of perspective study on teaching efficacy.

Considering this, the data was gathered to understand what students experienced during online teaching and learning, specifically regarding peer interaction, one-on-one interactions with teachers, use of multimedia, group work, and meeting expectations. The data suggests that creating an online learning environment is not a common practice for all teachers (Figure 5).

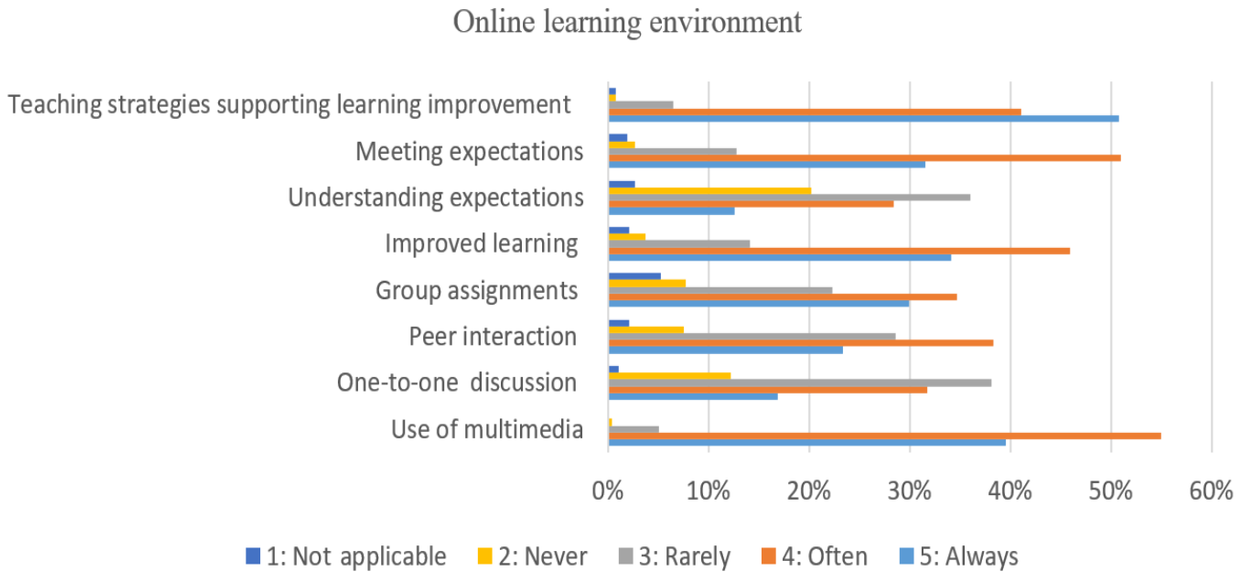

Figure 5. Student responses for Online learning environment while using MS Teams.

The findings on teaching efficacy in the context of an online learning environment can be summarized as.

- *Teaching strategies supporting learning improvement:* Teaching strategies in an online environment are considered highly effective, with 50.74% of students feeling always supported and 41.05% often agreeing.
- *Meeting expectations:* Majority of the students (50.95% often, 31.58% always) felt that the expectations regarding an effective learning environment during MS Teams sessions are met.
- *Understanding expectations:* In an online environment, students face some difficulties in understanding expectations from teachers regarding performance, with 20.21% stating that they never fully understand the expectations and 36.00% experiencing this rarely.
- *Improved learning from online tasks:* 34.11% of students responded that they always learn more, and 45.89% when teachers conduct online classes.
- *Group assignments:* 29.89% of students reported that when teachers conduct online group assignments, they always participate, while 34.74% do so often. 22.32% rarely participate in the activities, suggesting that teachers should be more thoughtful when designing and conducting activities to maximize student participation.
- *Peer interactions:* Peer interactions through group discussions occur moderately, with 38% of students participating often and 23.37% always, while 28.63% rarely engage, indicating challenges in facilitation in online settings for groups.
- *One-to-one discussions:* Only 16.84% of students always experienced one-on-one interactions with teachers, while 38.11% reported that they rarely engage in such discussions. The low frequency suggests a need for improvement to facilitate more personalized interactions.
- *Use of multimedia:* 39.58% of students find teachers making use of multimedia always, while 54.95% found it often, revealing a strong preference for the incorporation of audio, video files, and multimedia tools like PowerPoint presentations.

Interactive communication in online learning enhances student engagement and enjoyment (Park & Kim, 2020). While many students felt teachers used effective strategies and created motivating environments, others reported limited group work, peer interaction, or one-on-one support. Studies emphasize the need for multisensory, engaging teaching and strong school support for teacher training (Bong, Cho, Liu, & He, 2024; Gradišek & Polak, 2021). Despite some gaps, 70.60% of students agreed that their teachers fostered a positive online learning environment. This aligns with findings by Olugbade and Olurinola (2021), highlighting that teachers with a positive view of MS Teams deliver more engaging and logical lessons.

4.7. Assessment and Evaluation

Since online education began, assessment and evaluation have become challenging. This section aims to determine teachers' teaching efficacy as perceived by students, considering the ease and frequency of assessment and evaluation through MS Teams. The analysis is presented in the following graph (Figure 6).

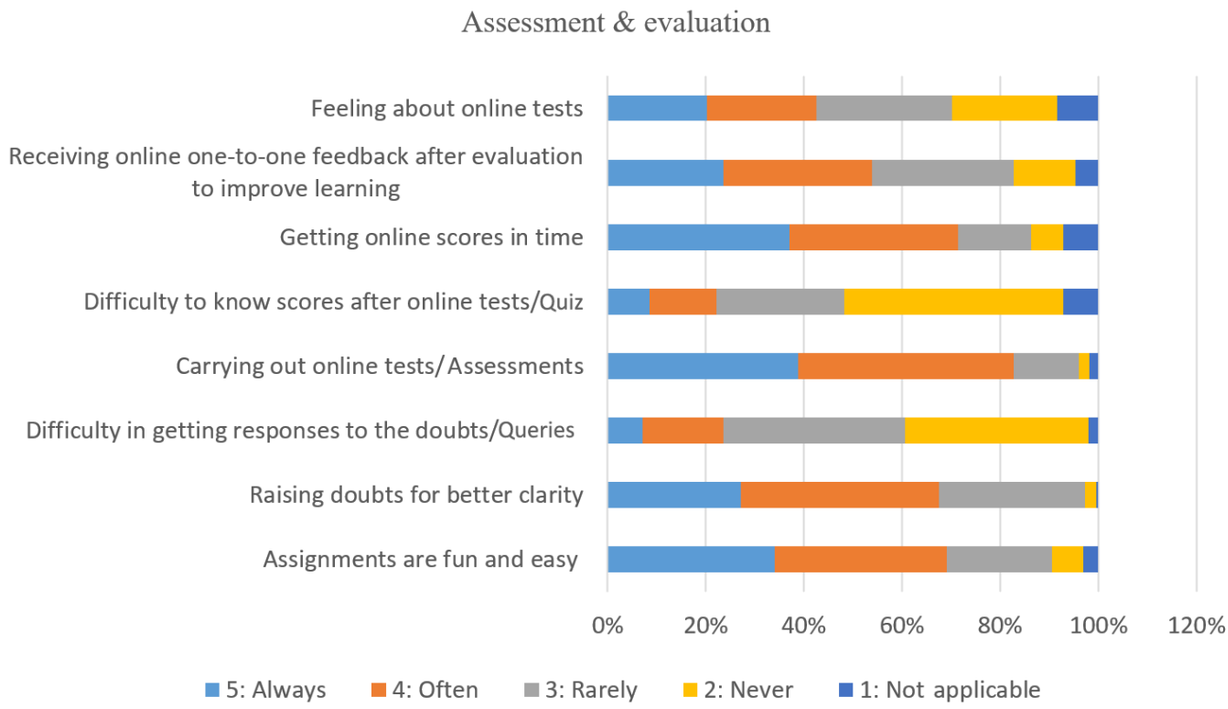

Figure 6. Student responses towards assessment and evaluation while using MS Teams.

Summary of the findings is as follows:

- *Feeling about online tests:* Student opinions on online tests are mixed, with 27.58% rarely feeling positive, 20.21% never feeling the same, and the rest of them enjoying most of the time.
- *Receiving individual feedback after evaluation:* With 23.58% of students receiving online feedback consistently, 28.84% reported it as a rare opportunity, indicating that personalized feedback is less common.
- *Timelines of receiving online scores:* Only 37.05% of students always receive timely scores, while 34.32% receive them often.
- *Difficulty in knowing scores after online tests:* Students face significant challenges in receiving online test scores, with 39% experiencing this always and 44% often.
- *Carrying out online assessments:* 38.74% of the students responded that teachers always conduct online assessments effectively, whereas 44.00% feel this happens often.
- *Difficulty in getting responses to queries:* 37.05% of students stated they never received responses to their queries or doubts, whereas an equal number of students (37.26%) reported that they rarely received such responses.
- *Raising doubts for clarity:* 40.42% of students often raise doubts for clarity, while 29.68% rarely do so. This suggests the possibility of hesitation or fear in seeking clarification from teachers.
- *Assignments being fun and easy:* 34.11% of students find assignments to be manageable always, and 34.95% often find them fun and easy.

Students provided mixed feedback on assessment opportunities via MS Teams, while tasks such as quizzes and viewing grades were smooth, subjective evaluations and personalized feedback posed challenges. This aligns with Karthikeyan (2022), who found students comfortable with MCQs and assignment submissions but less so with subjective tasks. Although MS Teams supports teaching, assessment remains a challenge. Prior research also noted that the abrupt shift to online learning was stressful, despite some benefits like developing new digital skills (Gradišek & Polak, 2021).

The major research findings to answer RQ 2 are summarized as follows:

- Effective use of teaching strategies: Majority of the students found that the strategies used by their teachers in online teaching are effective, with 50.74% reporting that they are always supported by teachers, while 41.05% agree that they often feel supported, suggesting a positive perception of virtual teaching.
- *Meeting expectations with online learning:* While 31.58% always and 50.85% often found the online environment effective, 20.21% struggled to meet performance expectations. This indicates the need for clear communication by teachers to achieve learning goals.
- *Activities and Interactions:* While 29.89% of students always participate and 34.74% often participate in group assignments and peer interactions, 22.32% participate rarely, highlighting the need for better teacher facilitation and more opportunities for collaboration.
- *Limited One-on-one interactions:* Only 16.84% of students always experience individual interactions with teachers, while 38.11% rarely do so, highlighting the need for increased support for students through one-to-one interactions with teachers.
- *Strong use of multimedia:* Teachers are found to use multimedia effectively on MS Teams, with 39.58% of students always and 54.95% often observing the effective use of audio, video, and PowerPoint presentations by teachers.
- *Challenges in assessment:* Assessment practices show mixed results while many students receive scores on time and find assessments effective, individual feedback is often lacking. A significant portion of students reported negative feelings about online tests, highlighting the need for more inclusive and supportive assessment strategies for both teachers and learners.

4.8. Comparing Teacher and Student Perceptions

Teachers generally demonstrated strong proficiency in using MS Teams for scheduling and instructional management, although some encountered difficulties with interactive tools and online assessments. A few faced issues when using additional tools alongside MS Teams. As noted by previous literature, this finding highlights the effective use of technology in teaching, which extends beyond equipment availability. It rather requires teachers to understand technology as a cognitive tool, emphasizing the need to develop instructional design competencies for professional growth (Hedberg, 1989).

Students largely viewed virtual teaching positively, appreciating teacher support and engagement strategies. Resonating with this, a study conducted by Alkhatib and Alainati (2024) on perceptions and attitudes toward MS Teams revealed students' positive views of its effectiveness as a digital learning tool. These findings urge educators and administrators to leverage this data to enhance academic outcomes and create an engaging learning environment. However, some students found the interactions less engaging and faced difficulty meeting expectations, highlighting the need for clearer communication and more interactive approaches. This comparison found that teachers reported being proficient in using MS Teams, but students often struggled with performance expectations in the online environment, indicating a communication gap. While teachers faced challenges integrating interactive tools, students generally found the teaching strategies effective and appreciated their efforts, reflecting positive teaching efficacy, though deeper engagement is still needed. Personalization was not a major concern for teachers, but students missed one-on-one interactions and personal attention. A similar view was shared by teachers in an investigation carried out by Christopoulos and Sprangers (2021) on primary and secondary education teachers, while studying the integration of educational platforms in a school for mathematics instruction amidst the COVID-19 pandemic in Belgium.

Assessment and feedback posed challenges in the present study, with teachers reporting mixed experiences and students expressing concerns about delays and a lack of feedback. Overall, teachers demonstrated adaptability, and students acknowledged their efforts in employing varied strategies, peer activities, and engaging assessments. A previously conducted study highlighted the significance of assessments in an online learning environment. The study included an online survey of medical educators. While they showed readiness to adopt active learning strategies in online settings, assessment remained a weak area, emphasizing a persistent gap in the effective implementation of digital evaluation tools such as online proctoring and adaptive testing in regular coursework (Olivares, Lopez, Martinez, Alvarez, & Valdez-García, 2021).

Ding and Hong (2024) highlighted a strong link between self-efficacy and positive teacher attitudes toward tech integration, emphasizing the role of teacher training. In this study, teachers felt confident using MS Teams but faced some challenges. Students appreciated effective teaching strategies but noted issues with personalization and assessment. Similarly, research on Jordanian students (Al Salman, Alkathiri, & Khaled Bawaneh, 2021) revealed difficulties due to limited ICT skills in both students and teachers. Students rarely experienced one-on-one interaction, aligning with previous findings (de Oliveira Dias, Lopes, & Teles, 2020) on limited virtual engagement. Multimedia use and group tasks boosted motivation (Abai & Hamli, 2025), reinforcing the need for targeted teacher training to enhance online teaching efficacy.

The findings from the present study on the perceptions of teachers and students regarding the teaching efficacy of Microsoft Teams in virtual school education reveal both opportunities and challenges associated with the use of online platforms. Technological and infrastructural challenges emerged as key concerns in the effective use of Microsoft Teams. Similar to findings in Mizoram, participants in this study cited poor internet connectivity, limited access to devices, and difficulty teaching certain subjects especially mathematics as major barriers to online learning. Additionally, it was reported that in South African public schools, high internet costs, lack of teacher motivation, and unequal access to digital tools hindered e-learning adoption. These parallels highlight that while platforms like Microsoft Teams offer potential, their success depends heavily on reliable infrastructure, teacher readiness, and equitable access. Consistent with prior studies, which support that in online education student satisfaction is influenced by technology effectiveness as well as instructor competency (Chen, Landa, Padilla, & Yur-Austin, 2022). More positive attitudes toward ICT foster a constructive learning cycle, enhancing the learning process (González-Sanmamed, Sangrà, & Muñoz-Carril, 2017). To improve the effective use of ICT, teacher training is recommended.

4.9. Implications

This study offers key insights for teachers, educators, school leaders, and researchers to enhance virtual and blended learning. It highlights the need for targeted training to improve online assessments and addresses challenges in using MS Teams for engaging instruction. The findings can inform sustainable practices in both formal and informal education. The novelty of the study lies in the following aspects:

- It examines both teacher and student perceptions of MS Teams—an area rarely studied from both perspectives.
- It specifically evaluates the effective use of MS Teams features post-COVID-19.
- Findings reveal teachers' struggles with interactive tools and assessments, while students noted limited one-on-one interaction.
- Teachers received focused professional training from tech experts to enhance personalized feedback.
- The study is supported by a robust sample of 110 teachers and 475 students.

4.10. Limitations

The study was conducted during the COVID-19 pandemic with limited prior experience among teachers in using MS Teams. Participants were purposively selected from three schools, making the findings context-specific and not generalizable. Pre-training efficacy levels were not measured, and a more structured approach could enhance the study. Despite these limitations, the findings offer valuable insights for school administrators to improve future training, technology use, and address teaching efficacy in the evolving education landscape.

5. Conclusion and Recommendations

The COVID-19 pandemic prompted a sudden shift to remote teaching, emphasizing the need for effective digital platforms. This study examines the teaching efficacy of using MS Teams, as perceived by both teachers and students. MS Teams was found to be user-friendly and supportive of virtual learning, although challenges persisted, particularly in assessment and evaluation. As familiarity increased, navigation and engagement improved; however,

the study highlights the importance of training in MS Teams and other digital tools to enhance online teaching strategies. The findings also demonstrate the positive impact of short-term, need-based training provided by schools during the crisis. The key takeaway from this study is the necessity for ongoing training for teachers—not only in using MS Teams but also in related tools such as PowerPoint, Word, Excel, and other online platforms. With blended learning becoming the norm post-COVID, schools must proactively support seamless remote teaching. Emphasis should be placed on improving assessment methods and making online instruction more learner-centric. Further research could explore how training influences teacher self-efficacy and readiness for blended teaching. Future training programs should focus on helping teachers fully utilize technology for effective instruction.

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