Tpack implementation in literature learning: Perceptions of high school students in Indonesia

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Abstract

This study explores the implementation of Technological Pedagogical Content Knowledge (TPACK) in high school literary education and examines students' perceptions of integrating technology into learning. The advancement of digital technology has led to the incorporation of tools such as PowerPoint, digital reading, theatre films, Google Drive, and WhatsApp in literature education. This research, involving 106 students from three high schools in Surakarta, used a mixed-method approach combining quantitative and qualitative data. The results show that TPACK positively impacts students' comprehension, engagement, and learning productivity. However, challenges such as limited access to technology and information management issues must be addressed for more effective TPACK implementation in the future. The study suggests improving technology access, developing curricula that blend technology with traditional methods, and providing teacher training for its effective integration. It also highlights the need for better technological infrastructure in schools to ensure equitable access to digital resources for all students. This study offers valuable insights for creating curricula and policies to enhance the integration of technology in literacy instruction, ultimately improving students' engagement and comprehension of literary texts in Indonesia.

Keywords: Educational technology, Literary learning, Student perception, Technology integration, TPACK.

1. Introduction

This study aimed to investigate the application of Technological Pedagogical Content Knowledge (TPACK) in high school literary education and examine students' attitudes toward incorporating technology into learning. Recently, the integration of technology into education has emerged as a primary emphasis in numerous projects aimed at enhancing the quality and efficacy of learning [1, 2]. The swift advancement of digital technology presents numerous opportunities to foster a more interesting, dynamic, and contextual learning experience for students [3]. Consequently, it is essential to investigate the efficient application of technology in high school literary education, which subsequently influences students' comprehension and engagement with literary texts. TPACK is a prevalent framework for integrating technology into education [4, 5]. TPACK integrates three fundamental components of learning: Content Knowledge (CK), Pedagogical Knowledge (PK), and Technological Knowledge (TK). This framework delineates the essential information required by educators to proficiently incorporate technology into their instruction [6, 7]. TPACK assists educators in selecting and utilizing technological tools that align with learning objectives, topic content, and student characteristics [8]. Furthermore, TPACK emphasizes the necessity for educators to contemplate the interplay between pedagogy and content, ensuring that technology serves as an instrument that enhances student comprehension rather than merely an extraneous tool in the learning process [9, 10]. In the realm of literary education, the implementation of TPACK is highly pertinent, as intricate literary texts necessitate profound comprehension and active student engagement. Literary texts not only familiarize pupils with other genres of literature, but also play a crucial role in character development, enhancing their comprehension of humanitarian issues, and broadening their perspectives on various lifestyles and cultures [11, 12]. Students can gain significant insights into morals, ethics, and societal values by examining literary works. Consequently, literary education must be tailored to contemporary demands, and one method to accomplish this is by leveraging technology to enhance students' learning experience [13, 14]. The swift progression of technology has enabled the utilization of several digital platforms, such as PowerPoint, WhatsApp, YouTube, and Google Drive, in literature education to offer a more authentic and engaging experience for students [15]. These platforms enable students to engage with literary works in a dynamic and adaptive manner. For instance, via YouTube, students can view film versions of literary works or engage with podcasts that analyze characters and themes in literary texts [16]. Students can use Google Drive to obtain educational resources and work with their peers on literary assignments or projects. Conversely, WhatsApp facilitates the rapid and efficient exchange of literary discourse and ideas among the students. Thus, technology facilitates access to educational resources and enhances student engagement in the learning process [17, 18]. Nonetheless, despite the significant potential of technology to enhance literary education, the application of TPACK is not without its challenges. A primary problem in implementing technology in the classroom is comprehending students' perspectives on its role in learning. Students' perceptions significantly influence the efficacy of technology in literary education. These impressions are shaped by students' personal experiences, proficiency with digital technologies, and comprehension of how technology might enhance their grasp of literary content. For instance, some students may prefer utilizing certain applications for reading literary works, whereas others may benefit more from live discussions or visual presentations. Comprehending students' opinions regarding the use of technology in education is crucial, as they are the individuals who directly experience the effects of technological integration in their learning processes. Students' perceptions not only indicate their attitudes towards technology but also offer insights into the efficacy of various elements within the technology-based learning process. Therefore, it is essential for educators to thoroughly assess and comprehend students' perceptions to enhance the integration of technology in literary education [19, 20]. Students' opinions on technology use in literature education might elucidate the hurdles or challenges they encounter in this regard. Students may have challenges in utilizing technology owing to insufficient devices or Internet connectivity. Furthermore, some students may perceive technology as diminishing the humanistic elements of literary education, including direct engagement with instructors or peers. To resolve this issue, educators must identify appropriate solutions, such as providing students with greater access to electronic gadgets or developing learning activities that integrate technology with traditional teaching methods. This study seeks to elucidate (1) students ' perception of TPACK utilization in literature education, (2) The Influence of Digital Devices on Student Engagement and Learning Experience, and (3) The Advantages and Challenges of TPACK Implementation as Perceived by Students. This study primarily contributes to elucidating how technology might enhance students' comprehension and involvement in literary education. This study presents an overview of students' perspectives on the use of technology in literary education and identifies the problems they encounter in this process. This study aims to offer actionable ideas for educators and policymakers to enhance the quality of literary learning through effective use of technology. This project aims to significantly enhance the creation of effective and relevant technology-based literary learning techniques for 21st-century students.The implementation of TPACK in literary instruction is a significant and pertinent advancement in enhancing educational quality in the digital age. Appropriate utilization of technology can render literary instruction more engaging, pertinent, and efficacious, equipping students to confront future challenges. This project aims to enhance creative, technology-driven literary teaching approaches to better equip students for a continuously evolving world.

2. Literature Review

2.1. TPACK Implementation

Technological Pedagogical Content Knowledge (TPACK) is a framework that emphasizes the integration of technology, pedagogy, and subject matter expertise to enhance successful learning [21, 22]. TPACK offers essential assistance to educators in successfully incorporating technology into instructional practices [9, 23]. The application of TPACK fosters enhanced creativity among educators when formulating educational tactics. Students can obtain material

via digital platforms prior to class discussions. Furthermore, TPACK provides flexibility in adjusting instructional strategies according to students' comprehension levels, thereby enhancing the dynamism and engagement of the learning experience [24]. Educators who comprehend and use TPACK concepts can foster a more dynamic, interactive, and significant learning experience for their students, facilitating the attainment of their full educational potential [25]. Furthermore, Hunter emphasizes the significance of mastering contemporary technological tools to facilitate learning and effective educational principles, including project-based and collaborative learning [26]. This underscores the need for a comprehensive grasp of the instructional topic and the utilization of technology to enhance students' comprehension of particular subjects. Specific instances of technology application in daily education and the significance of perpetually enhancing understanding of advancing technologies [27, 28]. By employing this methodology, the author seeks to assist instructors in cultivating a robust learning environment and facilitating student advancement in the digital age. Consequently, TPACK continues to serve as a crucial foundation for enhancing the quality of education.

2.2. TPACK in Literature Learning

Technological Pedagogical Content Knowledge (TPACK) is a framework that amalgamates technology, pedagogy, and content in the educational process [24]. In the realm of literary education, TPACK empowers educators to devise new tactics that integrate digital technology with suitable pedagogical methods to enhance students' comprehension of literary texts.

Thohir, et al. [29] asserted that the implementation of TPACK among prospective teachers demonstrated that proficient technology knowledge enhanced the efficacy of digital literacy-focused education. Interactive multimedia, including videos, e-books, and text analysis software, can enhance students' comprehension of the structure, themes, and values of literary works. Zhang, et al. [30] asserted that TPACK-based online collaborative discussions enhance students' critical thinking abilities in the profound interpretation of literary meanings. The enhancement of TPACK competencies using the Lesson Study technique has demonstrated efficacy in elevating teachers' professionalism in the management of technology-integrated learning [31]. In literature education, instructors with a robust comprehension of TPACK can provide a contextual and engaging learning experience using digital resources.

Solissa, et al. [32] highlighted that educators with elevated confidence in their technological competencies are more likely to innovate in integrating technology into literary instruction. Digital platforms facilitate the discovery of literary texts and enhance involvement in the educational process. Filina, et al. [21] emphasized the significance of integrating TPACK in elementary schools to foster a more adaptable and technology-driven learning environment. Consequently, the implementation of TPACK in literary education represents a strategic advancement in enhancing the efficacy of technology-driven learning tailored to the requirements of students in the digital age.

3. Methodologists

3.1. Research Design

This study employed a mixed-method approach that integrated quantitative and qualitative techniques [33]. Case studies are empirical approaches that delve deeply into specific instances in real-world contexts [34]. Case studies enable the examination of comparable instances of events that transpired, facilitating evidence collection and the identification of effective practices [35]. Case studies serve to address the enquiries of "how" and "why." This study employed a descriptive case study approach that comprehensively and thoroughly outlined the research findings. The outcome of the case study involved a detailed description and analysis [36]. A case study is an in-depth examination aimed at answering the questions of how and why an ongoing event unfolds within a real context and its subsequent interpretation.

Table 1.
Research Respondent Profile.

No.	Respondents	School origin	Interview Data
1	LF	Muhammadiyah 1 High School Surakarta	19 March 2024
2	LD	Senior High School 4 Surakarta	3 April 2024
3	JP	Senior High School 3 Surakarta	16 April 2024
4	DR	Senior High School 3 Surakarta	16 April 2024
5	AF	Muhammadiyah 1 High School Surakarta	24 April 2024
6	FK	Senior High School 4 Surakarta	6 May 2024
7	YM	Senior High School 4 Surakarta	6 May 2024
8	MA	Muhammadiyah 1 High School Surakarta	7 May 2024
9	F	Senior High School 3 Surakarta	17 May 2024
10	VL	Senior High School 3 Surakarta	17 May 2024
11	ND	Muhammadiyah 1 High School Surakarta	20 May 2024
12	NH	Muhammadiyah 1 Surakarta	8 October 2024
13	DI	Senior High School 4 Surakarta	11 October 2024
14	AH	Senior High School 3 Surakarta	15 October 2024
15	ES	Senior High School 3 Surakarta	15 October 2024
Total	15 Respondent		

3.2. Participants

The participants of this study were grade XI students from three high schools in Surakarta: SMA Negeri 3 Surakarta (36 students), SMA Negeri 4 Surakarta (36 students), and SMA Muhammadiyah 1 Surakarta (34 students). The total number of participants in this study was 106.

The researcher conducted interviews with students from three schools, which were identified as follows:

These institutions were chosen because of their diverse educational environments and the presence of educators who have effectively integrated TPACK into their literature instruction. The choice of grade XI students is determined by their experience in literature learning combined with technology. This study examines drama and poetry, highlighting the intricate nature of interpretation and the role of literature in demonstrating how technology in education can greatly enhance students' comprehension.

3.3. Data Collection

The survey aimed to gather insights regarding students' views on the application of Technological Pedagogical Content Knowledge (TPACK) within the context of literary education. The survey instrument consisted of a questionnaire employing a Likert scale to evaluate students' perceptions regarding the effectiveness of technology in comprehending literary texts, their engagement in the learning process, and the obstacles encountered in utilizing technology. This questionnaire explored various dimensions, including the application of PowerPoint in literary education, the role of digital reading as a medium for learning, the incorporation of drama videos, the utilization of Google Drive for material access, the inclination towards WhatsApp for sharing resources and engaging in discussions, and the impact of digital technology on learning productivity. In addition to the survey, in-depth interviews were conducted with a randomly chosen group of students from three different schools to delve deeper into their perspectives. This interview sought to explore the students' experiences in depth, particularly focusing on how technology influences literary learning, whether positively or negatively, and the factors that contribute to their perceptions.

The objective of this data collection process was to explore the impact of various technologies, including PowerPoint, digital reading, video, Google Drive, WhatsApp, and other applications, on students' comprehension, engagement, and productivity in literary learning. Consequently, the information gathered from the questionnaires and interviews is anticipated to offer a comprehensive understanding of how technology enhances the quality of learning literature. The collected data will ultimately be scrutinized to uncover insights regarding the impact of technology on the literary learning process, establishing a robust foundation for enhancing pedagogical approaches and integrating technology into literary education.

Table 2.
Questionnaire Grid.

Indicator	Number of Questions	Questionnaire Number	Question
PowerPoint Ease	2	1-2	1. To what extent do you agree that PowerPoint makes it easier for you to understand literary material?
			2. Do you feel that PowerPoint helps you understand the literary material better?
Digital Reading Helpfulness	2	3-4	3. To what extent do you feel digital reading helps in understanding literary material?
			4. Do you feel that digital reading is more flexible in supporting literary learning?
Video Drama Helpfulness	2	5-6	5. Do you feel that drama videos help you better understand the literary context?
			6. To what extent does a drama video improve your understanding of characters in literary works?
Google Drive Ease	2	7-8	7. Do you find Google Drive easy for you to access literature learning materials?
			8. To what extent does Google Drive allow you to share literature learning materials with friends?
WhatsApp Preference	2	9-10	9. To what extent do you prefer to use WhatsApp to receive literary materials?
			10. Does WhatsApp help you to discuss literary material with friends?
Digital Productivity	2	11-12	11. To what extent has the use of digital technology increased your productivity in studying literature?
			12. Does digital technology help you to complete more literary tasks?

Table 3.
List of validation questions.

Indicator	Number of Questions	Questionnaire Number	Question
PowerPoint Ease	1	1	1. To what extent do you agree that PowerPoint makes it easier for you to understand literary material?
Digital Reading Helpfulness	1	2	2. Do you find digital reading helpful in understanding literary material?
Video Drama Helpfulness	1	3	3. To what extent do drama videos help you better understand the literary context?
Google Drive Ease	1	4	4. Do you find Google Drive easy for you to access literature learning materials?
WhatsApp Preference	1	5	5. To what extent do you prefer to use WhatsApp to receive literary materials?
Digital Productivity	1	6	6. To what extent the use of digital technology increases your productivity in learning literature?
Digital Engagement	1	7	7. To what extent do you feel more involved in learning literature through digital technology?

3.4. Data Analysis

Qualitative data analysis employs an interactive analysis model comprising three fundamental activities: data reduction, data display, and result verification, all of which are conducted interactively, including during data collection [37]. The exercises were performed interactively by the participants. This indicates that during the information-gathering process of assessment integration through interviews, a concurrent decrease occurs, ensuring that the interview remains focused solely on the topic at hand. Quantitative data analysis was conducted in a descriptive manner by calculating percentages.

4. Findings

Table 4.
Questionnaire results from 3 high schools in Surakarta

Aspects of Technology Use	Strongly Agree (SA)	Agree (A)	Disagree (DS)	Strongly Disagree (DSA)
PowerPoint Ease	42.6%	35.2%	20.4%	1.9%
Digital Reading Helpfulness	42.6%	54.7%	2.8%	0%
Video Drama Helpfulness	50.9%	47.2%	1.9%	0%
Google Drive Ease	52.8%	38%	6.5%	2.8%
WhatsApp Preference	36.1%	38%	25%	0.9%
Digital Productivity	35.2%	62%	1.9%	0.9%
Digital Engagement	55.6%	49.1%	1.9%	0%

4.1. Student Perception of the Use of TPACK in Literature Classes

Students' perceptions of the application of TPACK in literary learning indicate a favorable inclination towards the effectiveness of technology in enhancing their comprehension of literary content. The survey results indicate that most students perceive substantial advantages in using technology to learn literature. Regarding the usability of PowerPoint, 42.6% of students strongly affirmed that it enhanced their comprehension of literary material, while 35.2% concurred with this assertion. Only 20.4% expressed disagreement, with only 1.9% strongly opposing the view, suggesting that PowerPoint significantly aids students in comprehending literary texts. The findings indicated that 42.6% of students strongly agreed and 54.7% agreed that digital reading facilitated their comprehension of literary materials. This figure indicates that digital reading is perceived as more flexible, facilitating students' access to literature-related information at any time and from any location, with only 2.8% of students expressing disagreement.

The feedback on the use of drama videos was overwhelmingly positive, with 50.9% of the students strongly agreeing and 47.2% agreeing that the videos enhanced their understanding of the literary context. The findings indicate that using videos as a visualization tool significantly enhances the comprehension of literary works, particularly in grasping characters and storylines.

A survey indicated that 52.8% of students strongly believed that Google Drive facilitated easier access to literature learning materials, and an additional 38% expressed agreement with this statement. Google Drive facilitates the sharing of materials among peers, enhancing accessibility and efficiency for students to access learning materials. Only 6.5% of respondents disagreed with this statement.

In the examination of preferences regarding WhatsApp usage, 36.1% of students expressed strong agreement, while 38% agreed that WhatsApp serves as an effective tool for obtaining literary materials and engaging with peers on educational topics. Nonetheless, 25% disagreed with the use of WhatsApp for learning. The increase in digital productivity was notable, with 35.2% of students expressing strong agreement and 62% agreeing that digital technology enhanced their

ability to complete more literary tasks. This indicates that students recognize the beneficial effects of technology on enhancing their learning productivity.

Ultimately, the findings regarding digital engagement in literary learning were quite promising, as 55.6% of the students strongly agreed and 49.1% agreed that digital technology enhanced their engagement in literary learning. This indicates that the implementation of technology enhances students' understanding while simultaneously boosting their interest and involvement in the learning process.

The feedback from students regarding the application of TPACK in literary learning has been favorable, as numerous students have reported its effectiveness in enhancing their comprehension of literary content, boosting their productivity, and enriching their overall educational experience.

4.2. The Impact of Digital Devices on Student Engagement and Learning Experience

The utilization of digital gadgets in high school literary education significantly influenced respondents' involvement and their overall learning experience. Interviews with participants in technology-based learning indicated that technologies such as PowerPoint, digital reading materials, video plays, Google Drive, and WhatsApp significantly enhanced the learning process. Subsequent interviews with various respondents further elucidated the beneficial effects of digital devices on literary education.

4.2.1. Use of PowerPoint in Literature Learning

PowerPoint is one of the most commonly referenced tools by respondents, used to elucidate literary content using complementary visual aids. LF, a respondent, stated, "PowerPoint is highly beneficial for comprehending the material as it presents images and text that reinforce the teacher's explanation." This facilitates my comprehension of challenging literary works. LD similarly expressed that PowerPoint facilitated his comprehension, stating, "Utilising PowerPoint enhances my material absorption, particularly when analysing symbolism in literature." JP also stated, "PowerPoint, with its accompanying images and graphics, enhances the engagement and comprehension of literature learning." The use of visual aids offered by PowerPoint significantly enhances the elucidation of literary topics that may be challenging to comprehend.

4.2.2. Flexibility with Digital Reading Materials

Respondents valued digital reading materials as additional resources for their courses. Respondents see greater flexibility in learning due to convenient access to diverse reading materials through digital devices such as mobile phones. DR remarked, "Digital reading enables me to access content at any time and from any location." I no longer need to wait for the availability of physical books, which can be elusive. AF stated, "The digitisation of reading affords me the liberty to engage with more literary texts at a more flexible pace."

FK remarked, "I find digital learning exceedingly beneficial, particularly when I wish to delve deeper into a specific subject." Learning is rendered more systematic and can occur at any time or place. This signifies that technology facilitates not only effortless access to texts but also enhances comfort and convenience for learners during their educational journeys.

4.2.3. The Use of Video Drama in Literature Learning

Drama films are a crucial component in aiding people to comprehend the context and narratives of literary works. YM, a participant, stated, "Viewing drama videos pertinent to the narrative we studied facilitated my comprehension of the characters and circumstances within the story." MA stated, "I felt deeply engaged in the narrative, which enhanced my comprehension of the conflict and character development."

F also stated, "The dramatic video enhanced my comprehension of the emotional tone depicted in the narrative." Articulating authentic scenarios enhances my capacity to visualize the people and narrative with greater clarity. This demonstrates that dramatic movies can elucidate literary passages that are sometimes challenging to comprehend through mere reading, facilitating respondents' understanding of the context and characters.

4.2.4. Benefits of Google Drive in Material Sharing and Collaboration

Google Drive functions as a crucial resource for facilitating respondents' access to educational materials and enabling information sharing among peers. VL, a respondent, stated, "Google Drive is highly beneficial." I can obtain all materials from the instructor at any time and disseminate the assignments to my peers. We frequently collaborate to review assignments and revise the materials. ND remarked, "Google Drive facilitates the sharing of materials or assignments with peers, enabling simultaneous collaboration without any challenges." NH stated, "The availability of Google Drive facilitates our access to assignments and materials from educators without the necessity of transporting cumbersome books." All tasks can be executed digitally and with greater efficiency than before. The utilization of technology, such as Google Drive, enhances the learning process and elevates participants' involvement in collaborative activities.

4.2.5. WhatsApp as a Communication Tool in Learning Discussions

In addition to providing access to materials, WhatsApp enabled robust communication between respondents and educators, as well as among the respondents. DI, a respondent, stated, "WhatsApp is highly beneficial as it enables us to directly enquire with teachers regarding challenging assignments or materials." Occasionally, educators provided supplementary resources over WhatsApp, which significantly enhanced my comprehension of the subject matter. AH stated, "I prefer utilising WhatsApp for discussions." Through the discussion group, I engaged with my peers on literary tasks and comprehended the diverse perspectives. ES contends, "WhatsApp facilitates expedited discussions." I can inquire

about or express viewpoints on literary assignments and receive comments from peers or educators. This suggests that WhatsApp functions as an efficient communication medium for discussing literary content, inquiring about unclear concepts, and obtaining supplementary materials that enhance respondents' comprehension.

Interviews with respondents from several high schools indicated that digital gadgets significantly enhanced their engagement in literature studies. Instruments such as PowerPoint, digital reading resources, theatrical films, Google Drive, and WhatsApp offered distinct advantages to the respondents' educational experiences. PowerPoint enhances comprehension by integrating graphics and text, digital reading resources offer learning flexibility, and theatrical films animate literary texts, facilitating a clearer understanding of the plot and the characters. Google Drive enables cooperation and accessibility of resources, whereas WhatsApp offers a platform for discourse and conversation that enhances participants' comprehension of the information.

These digital devices enable respondents to engage more actively in the learning process, thereby enhancing their comprehension and analytical abilities in literature. Consequently, the integration of technology into literary education can be regarded as an innovation that enhances the educational experience and stimulates respondents' motivation to engage more actively in learning. This demonstrates that, with an appropriate methodology, technology can serve as a highly effective instrument for enhancing the quality of literature education in high schools.

4.3. Benefits and Challenges of TPACK Implementation

The implementation of Technological Pedagogical Content Knowledge (TPACK) in literary education has numerous substantial benefits. However, it poses several problems that warrant consideration. The results of interviews with students from multiple high schools indicated that technology influenced their engagement in literary learning, enhanced their comprehension of topics, and facilitated more flexible learning. Nonetheless, other challenges related to access to technology and information management persist and require further attention. Additional interviews provided comprehensive insights into the students' experiences with TPACK in literary instruction.

4.3.1. Advantages of Using PowerPoint in Literature Learning

Most students indicated that utilizing PowerPoint in literary instruction significantly enhanced their comprehension of the material. LF remarked, "PowerPoint significantly aids me in visualising literary elements, including characters and themes present in the narrative." The graphics facilitated my comprehension of the narrative's content. LD articulated a similar sentiment, claiming that PowerPoint facilitates comprehension of complex material: "I believe I grasp more about the characters in the story after viewing the explanations accompanied by visuals in PowerPoint."

JP also stated, "Utilising PowerPoint, I can instantly discern the connections between literary elements that are challenging to comprehend solely through text." This elucidates the teacher's intent. This indicates that visualization via PowerPoint enhances students' comprehension of literary themes, rendering learning more engaging and efficacious.

4.3.2. Benefits of Digital Reading

Accessing reading material in a digital format provides students with a level of flexibility that is greatly appreciated in literary education. DR expressed, "Digital reading provides me with the chance to learn at any time and from any location." The material is accessible on my phone, whether I am commuting home from school or relaxing at home. AF stated, "Having access to digital reading materials allows me to read at my convenience, free from the constraints of a specific schedule." This significantly enhances my ability to analyze literary texts in greater depth.

FK believed that utilizing digital materials allowed him greater control over time management. "I have the opportunity to engage with additional literary material beyond class hours, as I can access it whenever I wish." This provides greater autonomy in my educational journey. This experience illustrates how technology enables students to engage with material more profoundly, independent of specific time and location.

4.3.3. Drama Videos as an Effective Learning Tool

Along with visual material, drama videos have been shown to be significantly effective in enhancing students' comprehension of literary texts. YM, who appreciates the incorporation of drama videos in literature education, stated, "Observing videos that depict the stories we studied enhanced my comprehension of character interactions and the progression of the narrative." As a result, the context of the story became clearer.

MA also noted, "The drama video enables me to immerse myself in the mood conveyed in the narrative." This enhances my ability to fully appreciate and comprehend narratives. Integrating literary texts with visual elements, such as videos, allows students to explore complexities and narratives that can often be challenging to grasp through reading alone.

4.3.4. Google Drive and WhatsApp

Google Drive and WhatsApp play crucial roles in enhancing communication and collaboration between students and educators. VL states, "Google Drive is quite beneficial for accessing all the materials shared by educators." I have the capability to access any file when it is required. ND commented, "I love being able to work with my friends on Google Drive. We can effortlessly review each other's assignments and engage in discussions with them. Nonetheless, although Google Drive and WhatsApp facilitate communication, some students occasionally perceive the volume of information exchanged as being overwhelming. NH expressed, "At times, I find myself perplexed due to the overwhelming amount of information circulated through WhatsApp." I'm afraid something is missing, such as an important assignment or

information." DI also remarked, "I believe I have been presented with an overwhelming amount of information." I must exercise greater caution to ensure that I do not overlook critical matters, particularly tasks that require immediate attention.

4.3.5. Challenges of Technology Access and Internet Connection

Although numerous students benefit from technological advancements, certain technical challenges persist. AH disclosed, "At times, I encounter issues with an unreliable internet connection." The accessibility of the material and the ability to participate in online classes were challenging. ES shares a similar sentiment: "The internet connection at home is not always reliable, which means I often have to wait an extended period to access videos or review the materials provided by the teacher."

LF also mentioned, "Some of my friends lack adequate devices to access digital materials." The necessity of sharing a mobile phone or computer presents challenges in effectively engaging with lessons. This indicates that although technology offers convenient access, disparities in device availability and connection quality may impede students' learning experiences.

4.3.6. Challenges of Information and Material Management

Along with technical hurdles, managing information presents a significant challenge for students as well. LD expressed, "At times, I find myself feeling inundated by the volume of content circulated via WhatsApp and Google Drive." This poses a challenge in systematically arranging and locating the essential materials. JP states, "While I receive a wealth of valuable information, I occasionally struggle with organising it effectively." At times, I find myself overlooking crucial information due to its disorganized presentation.

DR also perceives that the overload of information presents a significant challenge. "While technology aids our learning, there are instances when the volume of information can be overwhelming." He stated, "I must effectively manage my time to avoid feeling overwhelmed.' This challenge illustrates that although technology has the potential to enhance the learning experience, the management of overwhelming amounts of information presents difficulties for educators.

The interviews revealed that utilizing TPACK in literary learning offers numerous benefits, particularly in enhancing student engagement, promoting learning flexibility, and improving material comprehension. Incorporating tools such as PowerPoint, video dramas, and digital reading materials facilitates a more comprehensive and in-depth learning experience for students to learn English. Google Drive and WhatsApp enhance collaboration and communication between students and educators.

Nonetheless, obstacles concerning technology access, including unreliable internet connectivity and device constraints, remain to be addressed. Moreover, the overwhelming management of information presents a significant challenge for students in effectively leveraging technology for learning. Consequently, while the application of TPACK offers numerous advantages, it is essential to find a resolution to address this challenge to ensure more effective and optimal implementation.

5. Discussion

The main findings of this study revealed that students had a favorable view of the integration of TPACK in literary education. The integration of technology in education enhances students' understanding of literary works, especially poetry and drama. Short story texts leverage technology, mainly for activities that enhance understanding. The exploration of poetry and drama has been significantly enhanced by technology, which facilitates various tasks, such as the musicalization of poetry and staging of drama, allowing for both individual and collaborative efforts to be realized. The application of PowerPoint tools enhances students' understanding of literary works such as short stories, poems, and plays. The reading materials disseminated by educators via WhatsApp, presented as links and blogs, provide considerable benefits because they are accessible for study at any time.

Furthermore, the use of drama videos significantly improved the understanding of genuine drama performances. This method enables direct observation, enhanced by incorporating technology into classroom learning, as the videos are easily accessible on YouTube. Moreover, it enriches students' educational journeys by providing visual and emotional context for the literary works studied. Consequently, the use of the Google Drive platform enabled smooth collaboration and resource sharing between students. This platform also functions as a resource for collecting assignments, including poetry texts, poetry musicals, scripts, and performances. This suggests that leveraging technology fosters better collaboration among the students. Although Google Drive provides ease of access for students, some have criticized its application in educational settings, describing it as unwieldy.

Moreover, utilizing WhatsApp is seen as a means to enhance communication beyond traditional learning hours and serves as a platform for sharing literary texts for students' in-depth analyses. Consequently, it holds the promise of enhancing the interaction and communication dynamics between students and educators. The application of digital technology enhances the efficiency of learning processes [38, 39]. This indicates that digital technology significantly contributes to enhancing the efficiency and effectiveness of learning, motivating students to engage more actively in the educational process [11]. Finally, there was a strong consensus among students that digital technology enhanced engagement within the classroom environment. The findings indicate that technology enhances material accessibility and encourages greater student engagement in class discussions. Consequently, utilising technology in education facilitates comprehension, enabling the creation of literary works and promoting greater student engagement in the learning process [18, 40].

The incorporation of digital resources in literary teaching markedly improves students' motivation and learning experience. Through the effective utilization of digital devices, students can augment their engagement, comprehension, and appreciation of literary works, resulting in a more enriched and comprehensive learning experience [41]. The application of Technological Pedagogical Content Knowledge (TPACK) in literary instruction significantly improves students' understanding of literary texts [42]. However, obstacles persist in the implementation of TPACK, particularly concerning the differing digital competencies among students and unequal access to technology. Interviews indicated that some students periodically encountered difficulties concerning ethical considerations while gathering assignments for submission to their peers. Furthermore, students often demonstrate a decline in their trust in technology. It is acknowledged that studying at home presents obstacles in utilizing online learning apps due to inadequate network connectivity, especially when the classroom is filled by Class XII for school examinations. Occasionally, the classroom learning environment faces technical obstacles that hinder educators' ability to properly utilize technology.

This study indicates that incorporating technology into literary education requires careful consideration of the aforementioned factors. Educators must possess a strong understanding of TPACK to effectively and cohesively blend technology, pedagogy, and resources. Utilizing technology is crucial not just as a visual aid, but also as a means to stimulate critical discourse and facilitate thorough analysis [9, 43]. It is essential to consider students' digital competencies, and instruction should be customized to assist those who may struggle with the digital tools employed [44].

Future investigations should focus on developing training initiatives for educators regarding the implementation of TPACK in literature instruction to this end. It is essential to conduct studies to determine the most effective digital technology for enhancing students' comprehension of literary texts. An analysis comparing schools with varying technological infrastructures can yield valuable insights into the factors that affect the successful implementation of TPACK in literature instruction [8, 45]. Furthermore, it is essential to provide direction that fosters collective awareness among students regarding the effective use of technology in learning processes. This approach will enable subsequent investigations to enhance the understanding of the most effective use of technology in literary education.

6. Conclusion

The implementation of Technological Pedagogical Content Knowledge (TPACK) in literary education has a substantial positive effect on student engagement, material understanding, and overall learning experience. Most students provided favorable input concerning the utilization of technology, including PowerPoint, digital reading materials, theatre films, Google Drive, and WhatsApp in literary education. This technology enhances students' comprehension of literary works, offers flexibility in material access, and promotes more efficient collaboration and communication between students and educators. PowerPoint, with images and graphics, facilitates the comprehension of intricate literary aspects, whereas digital reading resources enhance accessibility and provide greater control over students' learning schedules. Drama videos serve as an efficient medium for comprehending character dynamics and narrative context while enhancing emotional engagement with the presented story. Google Drive enables the sharing of materials and collaboration among students, while WhatsApp accelerates communication concerning academic topics and tasks, albeit information overload can occasionally be difficult.

Although the introduction of TPACK offers numerous advantages, difficulties persist regarding technology access, including unreliable Internet connections and inequalities in device availability. Moreover, excessive information management hinders learning. Consequently, to enhance execution, it is essential to address technology accessibility and efficient information management. The incorporation of technology into literary education significantly enhances students motivation and engagement in the learning process. When used appropriately, technology can serve as a highly effective instrument to enhance the quality of literary education in schools.

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