Original Paper

Maintaining Middle School Students' Engagement in Virtual Learning Environments

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Abstract

The current COVID-19 pandemic has created many challenges for teachers as they transition to teaching in virtual learning environments. Virtual learning environments have forced educators to adapt teaching strategies and become creative and innovative to maintain student engagement (Korkmaz & Toraman, 2020). Middle school social studies teachers have always dealt with a lack of student interest in learning history, and the current instructional setting is requiring a reimagined teacher craft to deliver high-quality instruction. The interaction between students and teachers often depends on the content, highly effective questioning, choice in response methods, technology tools, or learning platforms (Czerkawski & Lyman, 2016). A conceptual understanding of the types of engagement, including cognitive, affective, and behavioral (Buric & Franzel, 2020; Raes, Vanneste, Pieters, Windey, Van Den Noortgate & Depaepe, 2020; Van Uden, Ritzen & Pieters, 2013; Ding, Kim & Orey, 2017) will help inform the types of instructional strategies that will be most effective at increasing and maintaining student engagement. The purpose of this phenomenological study was to describe the experiences and problems associated with engaging students in virtual learning environments for middle school social studies teachers in a border school district with over 40,000 students. The overarching theme that emerged from the data collected was that teachers play a significant role in creating a learning environment that supports students, encourages participation through interactive technology, and nurtures relationships to promote student engagement. Findings suggest educators understand the challenges educators face to keep students engaged and motivated, and some of the best practices that can increase student engagement in virtual learning.

Keywords

student engagement, cognitive engagement, affective engagement, behavioral engagement, virtual learning

1. Introduction

The current COVID-19 pandemic has created many challenges for teachers as they transition to teaching in virtual learning environments. Student disengagement has made it difficult for teachers to gauge student mastery of content, differentiate instruction, provide feedback, form relationships with their students, and created an emotionally "distant" learning environment (Korkmaz & Toraman, 2020). There is insufficient research into best practices for maintaining student engagement in remote learning for middle school students. The COVID-19 pandemic has created a need to research the challenges and difficulties educators face in keeping students engaged in virtual learning environments. Virtual learning environments have forced educators to adapt teaching strategies and become creative and innovative to maintain student engagement (Korkmaz & Toraman, 2020). Middle school social studies teachers have always dealt with a lack of student interest in learning history. The current instructional setting requires a reimagined teacher craft to deliver high-quality instruction while motivating disengaged students to become engaged in learning. The interaction between students and teachers often depends on the content, highly effective questioning, choice in response methods, technology tools, or learning platforms (Czerkawaski & Lyman, 2016). A conceptual understanding of the types of engagement, including cognitive, affective, and behavioral (Buric & Franzel, 2020; Raes, Vanneste, Pieters, Windey, Van Den Noortgate & Depaepe, 2020; Van Uden, Ritzen & Pieters, 2013; Ding, Kim & Orey, 2017) will help inform the types of instructional strategies that can be most effective at increasing and maintaining student engagement.

A qualitative research study grounded in a transcendental phenomenological perspective was conducted to identify the current challenges teachers face in engaging students, the levels and types of recent engagement in virtual learning, and the best practices that have been effective at cognitively, affectively, and behaviorally maintaining student engagement. The purpose of this phenomenological study was to describe the experiences and problems with engaging students in virtual learning environments for middle school social studies teachers in a border school district with over 40,000 students. This study also aimed to understand the virtual learning environment dynamics to identify challenges and practical strategies to maintain student engagement in virtual learning. The following questions guided the inquiry process:

(1) What instructional strategies do educators currently use to assess mastery learning during online instructional delivery?

(2) What programs or technology tools do educators use to allow for student input, feedback or collaboration during online instruction?

(3) How do educators keep students engaged in the virtual learning environment?

(4) How do educators motivate students to participate in the virtual learning environment?

The research findings will help improve teaching in learning in virtual learning environments in the k-12 setting and help educators understand best practices that educators are currently using to keep students engaged and motivated to succeed academically.

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2. Literature Review

2.1 Types of Student Engagement

Student engagement is a multi-dimensional concept that has recently become the focus in virtual learning environments. According to Trowler (2010), "student engagement is concerned with the interaction between the time, effort and other relevant resources invested by both students and their institutions intended to optimise the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution" (p. 3). There are three general types of engagement: cognitive, affective, and behavioral (Buric & Franzel, 2020; Raes, Vanneste, Pieters, Windey, Van Den Noortgate & Depaepe, 2020; Van Uden, Ritzen & Pieters, 2013; Ding, Kim & Orey, 2017). The type of engagement that a student exhibits will vary based on their abilities and determine the types of support they will require to show all three types of engagement. For example, Borup, Graham, West, Archambault, and Spring (2020) state that a student that is genuinely interested in a subject area demonstrates cognitive engagement and will not need support, but if they have a negative attitude towards school work, they will need support in order to demonstrate behavioral engagement and complete the classwork. Behavioral engagement refers to the specific tasks the students must exhibit in class, such as logging in to the online platform, accessing and completing work on the LMS (learning management system). Ding, Kim, and Orey (2017) indicate that students can demonstrate behavioral engagement in online discussions by submitting comments or responses to peer responses in an online discussion forum.

Cognitive engagement, on the other hand, refers to specific actions displayed by students that indicate interaction with the content such as paying attention, seeking feedback, taking pride in work completed, asking questions, and submitting responses when the teacher checks for understanding (Borup, Graham, West, Archambault & Spring, 2020; Buric & Frenzel, 2020). Raes, Vanneste, Pieters, Windey, Van Den Noortgate, and Depaepe (2020), argue that teachers can cognitively engage students through online quizzes and polls during the lecture. Also, students who are cognitively engaged will dedicate more effort to writing and submitting responses in online discussion (Ding, Kim & Orey, 2017) because cognitive engagement "incorporates thoughtfulness and willingness to exert the effort necessary to comprehend complex ideas and master difficult skills" (Fredericks, Blumenfeld & Paris, 2004, p. 60). Emotional or affective engagement refers to how students react to a learning environment, including teachers and peers with positive dispositions such as excitement or lack of interest in completing work and boredom (Fredericks, Blumenfeld & Paris, 2004). Affective engagement is essential because if students feel welcomed and supported, they will tend to participate in online discussions with peers (Ding, Kim & Orey, 2017), which can contribute to both behavioral and cognitive engagement (Borup, Graham, West, Archambault & Spring, 2020; Buric & Frenzel, 2020).

2.2 Teacher Support in Relation to Student Engagement

Fredericks, Blumenfeld, and Paris's (2004) review on student engagement revealed a strong correlation between teacher support and students' varying engagement levels in the classroom. Teachers can support students' cognitive engagement by providing high-quality explicit instruction that incorporates opportunities to collaborate with peers and providing students with the necessary tools and resources to process the content (Borup, Graham, West, Archambault & Spring, 2020). Buric and Frenzel (2020) suggest that effective instruction requires that teachers use cognitive activation, which involves instructional strategies and activities that promote critical thinking, brainstorming, and activating prior knowledge. Effective cognitive activation can contribute to cognitive engagement. Behaviorally, teachers can support students by helping them navigate technology platforms to ensure they can access the resources needed, helping them manage their learning environment, and monitoring progress (Borup, Graham, West, Archambault & Spring, 2020) which teachers in virtual learning environments can do through the use of interactive learning platforms. Borup, Graham, West, Archambault, and Spring (2020) suggest that in order for teachers to support students' affective engagement, they need to make it easy for students to communicate with them, and they must invest time in getting to know their students. "To strengthen relationships while online, participants need to establish their social presence: 'the ability of participants… to project their personal characteristics into the community, thereby presenting themselves to the other participants as 'real people''" (Garrison et al., 2010, p. 89 as quoted in Borup, Graham, West, Archambault & Spring, 2020). Dixon (2010) suggests that in order for students to be engaged in online learning, there needs to be collaboration among students and strong teacher presence because the level of interaction influences the students' level of engagement.

2.3 Learner Interactions and Student Engagement in Online Learning

Bollinger and Martin (2018) suggest three types of interactions that contribute to student engagement in online learning: learner-to-learner interaction, learner-instructor interaction, and learner-content interaction. In learn-to-learner interaction, students collaborate on projects and assignments and engage in discussions by sharing their viewpoints and ideas. However, for this interaction to occur, teachers develop a learning environment where students feel like they belong and are comfortable sharing (Bollinger & Martin, 2018; Fredericks, Blumenfeld & Paris, 2004). Learner-instructor interaction involves educators establishing an online presence and communicating with students utilizing various methods such as email or chat features in video conferencing software (Bollinger & Martin, 2018). It also involves instructors designing appropriate instructional activities that promote active rather than passive learning. Dixon (2010) suggests that active learning involves discussion forums, collaborative group projects, and critical thinking, whereas passive learning relies on a traditional lecture, videos, reading of a text, and assessments. Learner-content interaction refers to the number of times students engage with instructional content such as videos, online games, interactive software platforms, class assignments, and class lectures (Bollinger & Martin, 2018). However, factors such as student characteristics and home and classroom environment affect the level of engagement. Borup, Graham, West, Archambault, and

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Spring's (2020) Academic Communities of Engagement (ACE) framework advances the idea that students' characteristics, course environment, and unique environment contribute to student engagement in online courses. A student's interest in the subject matter, habits of mind, self-efficacy, and ability to control their behavior affect their engagement in a course. The class's design depends on teachers' pedagogical skills and knowledge of instructional strategies that contribute to student interest, such as using cooperative learning, project-based learning, or a particular delivery style (Czerkawski & Lyman, 2016). Lastly, in terms of the personal environment, Borup, Graham, West, Archambault, and Spring (2020) suggest that the teachers can directly or indirectly influence the level of support students receive to contribute to their academic engagement.

3. Method

3.1 Researchers' Roles and Overview of Method

We are educators and educational researchers. One author is currently a K-12 teacher in the United States and the other is a university professor in educational research. The literature review of student engagement revealed three forms of engagement: cognitive, affective, and behavioral. Using this conceptual framework of student engagement, we chose to study middle school social studies teachers because one of the authors has direct contact with this group of teachers and we witness first-hand the lack of student engagement in virtual learning environments. With access to the teachers' Google Classrooms, the researchers could see behavioral engagement with the submission of individual student assignments. Through informal virtual walkthroughs since the beginning of the school year, the researchers have witnessed varying levels of cognitive, affective, and behavioral engagement among students and seen some instructional strategies be more effective than others. Through the observations, we came to formulate the questions of what specific strategies teachers were using to check for understanding and motivate and engage students. We wanted to understand the underlying factors that influenced the level of engagement in individual teacher's classrooms in middle schools. The initial survey for data collection gauged the types of engagement teachers self-reported and generated an understanding of best practices currently being used. Survey results created a general understanding of what the average middle school social studies teacher was doing to engage students. Formal observations of teachers and follow-up interviews helped validate survey results and gain a deeper understanding of teachers' experiences and challenges in keeping students engaged in virtual learning environments.

3.2 Context, Site, and Participants

One of the researchers is the social studies instructional coordinator for the border school district involved in this research study, and thus she has direct knowledge of the challenges and successes teachers face in the virtual learning environment obtained through informal observations since the beginning of the academic school year. For this research inquiry, we chose to collect data through an observer perspective from four middle school social studies teachers and interview the research participants. This sample of social studies teachers was selected using a purposive sampling method

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based on use of technology, high student interaction, interactive learning platform, and active and positive student-teacher rapport observed during initial informal observations. Selected teachers received an email asking them if they would be interested in participating in the research study and participate in an interview. The participants consisted of two female teachers and two male teachers, three of whom teach 6th-grade social studies, and one teaches 7th grade. All four teachers have experience teaching social studies from 1-7 years, all within the school district, and all are highly proactive. These teachers participated in a full-length 55-minute formal observation conducted through access to the Google Meet class session and participated in an interview to discuss their teaching and learning practices. The four teachers were individually interviewed after school for 45 minutes using a structured interview approach and asked the following questions: (1) What has been your biggest challenge in virtual learning? (2) What instructional strategies have you used to keep students engaged in learning and check for mastery? (3) What tech tools have you used to engage students? (4) How do your students show engagement in learning? (5) What strategies do you use to motivate students to learn?

3.3 Data Collection and Analysis

A survey instrument to measure middle school social studies teachers' experiences with student engagement in the virtual learning environment guided the initial research inquiry. The survey was created utilizing Google Forms and consisted of seven questions, of which six were multiple response options, and one was open-ended. The survey was designed in this format to ensure participation and completion and guided by evidence collected during informal observations. The survey was sent via email to 80 middle school social studies teachers at the border school district with over 40,000 students on October 2, 2020, and remained open for two weeks. The survey closed on October 16, 2020. The response rate was 58.75%. The email explained to teachers that participation was strictly voluntary, no emails or identifying information were collected, so responses were confidential, and participation was anonymous.

A coding schema guided the identification of emerging themes in participant observations and interviews. Thematic analysis was conducted. Examples of our interview coding are demonstrated in Table 6. Examples of participant observation coding are demonstrated in Table 7 below. Survey results were disaggregated and cross-referenced to identify students' types of engagement in respondents classrooms' by years of teaching experience.

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Table 1. Interview Questions Coding

Question	Answer	Relationships	Distractions	Technology
What challenges are you currently experiencing with engaging students?	Students aren't coming into class don't know what the teacher is doing to making class engaging	Yes		
	Wi-fi at home most students get assignments done, but struggling students are facing issues both at home and at school			Yes
	Students can be on cell phone or another website, and it is hard to know if they are engaged		Yes	
	Connection with students, rapport with students; likes to know them as people, not being able to know them	Yes		

Question	Answer	Visuals		Technology
What strategies have you found to be effective in engaging students?	Activity ready at the beginning; students want to do bellringers; See-Think-Wonder (analyze images)	Yes		
	Visuals, props (Koran), backdrops (Islamic during the interview); Quizziz, NearPod, Google Forms	Yes		Yes
	Visuals for Islam I showed them the Koran; Picture of an Islamic center in town; Quizziz	Yes		Yes
	Quizziz (students think its fun,			

		Behavioral	Affective	Cognitive
	and I gauge from there if they understood)-review of what they have learned		Yes	
How do your students show engagement in class?	90% submit responses and communicate through the chat feature, only about 10% unmute their microphones to say something; Students raise had on camera when they have a question or to answer a question	Yes		Yes
	All three ways they ask questions, show interest, the next day they did their own research (King Tut for Egypt); looked up more laws about Hammurabi's Code	Yes	Yes	Yes
	They show neatness in their work; They will say that learning about history is fun	Yes	Yes	
	If teachers just sit their students will participate 25%, 75% participate more with her helping them; All classes are different; give and take	Yes		
		Humor/Fun	Relevancy	Relationships

		Technology	Interactive-Based	Game-Based
How do you motivate students to keep learning?	Having fun with them; not having a monotony in class; community building; Buzzers when say something correct or "fire" buzzer when they are on a roll	Yes		
	Relevant lessons; Connect to what they can see around them		Yes	
	Complementing them by saying "thank you," "you're welcome"; Students show off their work; See them-who they are; We have a genuine interest in what they are going to talk about			Yes
	Storytime (lesson introduction); I left them on a cliffhanger about Miguel Hidalgo. I told them they chopped off his head on Halloween; Make it as fun as possible; Entice with storytime; students will say "yay" when she says it is storytime	Yes		
What tech tools have you used with your students?	GimKit; ClassKick students have the ability to help each other out unlike PearDeck and NearPod; likes the games;	Yes	Yes	Yes

EdPuzzle, Google Slides, Quizziz; Students ask to play Kahoot	Yes	Yes
Purpose Games; try to work on tools that shows them that they are going to work on it; want to be able to monitor student progress	Yes	Yes
Gimkit; Adapts Google Forms and types answers in chat only if they participate and then students turn in assignment	Yes	Yes

Note. Emerging codes revealed by analyzing interview questions.

Table 2. Participant Observation Coding Results

	Teacher A	Teacher B	Teacher C	Teacher D
Visuals/ Support	The teacher plays Ancient Egypt video and tells students to listen for three things they did not know about Egypt. Teacher displays graphic organizer and guides students by typing out responses in the organizer for them to see and add to their notes	Trailer video from Disney's Aladdin to introduce the Middle East region Introduces vocabulary terms by showing artifacts-oil barrel, gold pharaoh statute, and Bible for religions;	Behind the teacher in her room is a backdrop of the Taj Mahal and an anchor chart with an outline of Gandhi and the word civil disobedience displayed and the definition The teacher uses visuals (primary sources) and highlights words in red throughout the	The teacher switches the slide to a political cartoon of the Law of April 6, 1830, and tells the students, "I'm going to explain what to with this political cartoon because I've seen some students having a hard time."

Technology	The teacher puts a link to ClassKick in the chat	Teacher post's link to NearPod lesson in the chat	lesson (discrimination, South Africa). The teacher tells students, "we are going to use NearPod" and places a link to NearPod in the chat	The teacher then displays an assignment for students to complete drag and drop interactive matching activity on Google Slides on the Texas Revolution.
	Teacher A	**Teacher B**	**Teacher C**	**Teacher D**
Engagement	The teacher asks students, "can someone tell me what they learned about Egypt." One student responds, "Egypt lasted for 300 years" another student responds, "pyramid was 220 x 220". The teacher thanks students for contributions.	Behavioral engagement (students respond on NearPod) Next question-"Which area on the map shows you the country of Egypt" (100% of students responded correctly) "good job, class."	Teacher checks for understanding with a multiple choice question-What is non-violent refusal to obey laws and demands called?" 75% of students answer correctly The teacher asks, "If you saw something that wasn't right, would you speak up? Would you try to change it" Teacher monitors responses students are posting in NearPod	The teacher displays her screen and tells students that only 6 of 22 have turned in their Flipgrids that were assigned the previous day. She says, "there is no excuse for you not to turn it in. I want you to talk from 50 seconds to 1 minute and 20 seconds on the causes of the Texas Revolution.
Rapport/ Teacher	"It is okay if you do not know how to spell	Teacher smiling throughout the lesson	The teacher reads aloud names of	Student asked in the chat, "is it okay if I eat

| Characteristics | it; just type it as best as you can or pronounce as best as you can." | and says thank you to students that provide responses

The teacher welcomes every student individually by name as they log in to the Google Meet as each student's name appears on the screen. | students that have joined NearPod and (gives wait time and reposts link for late-arriving students) | because I didn't get to finish my food." The teacher responds, "listen first to what I am going to explain, and then you can finish eating. I know you don't have your camera on, and we cannot see you." |

	Teacher A	**Teacher B**	**Teacher C**	**Teacher D**
Learning Environment/ Support	Teacher displays graphic organizer and guides students by typing out responses in the organizer for them to see and add to their notes	Teacher says, "Nice, I like your answers"-teacher read and rephrased answers that students submitted and praised each student by mentioning their names; Assignment-pictures for each category of the Middle East, the teacher provided references for the assignment and embedded resources (video and map to label)	The teacher displayed Google Form questions with Gandhi reading and explained the directions for the independent assignment. The teacher displays Google Classroom on her screen to show students where the review for the test they will be taking on Friday can be found.	The teacher tells students, "I do not want you to feel embarrassed to put questions in the chat and do not put them in the Google Classroom stream because I may not see them, and I want your questions to be answered."

Note. Examples of participant behaviors witnessed during observations of emerging themes in the research study.

4. Results

4.1 Interactive Learning Platforms

There were 47 respondents to the survey, of which 40.5% had, on average, between 0-10 years of teaching experience, and 59.5% had 11 or more years of teaching experience. In terms of interactive learning platforms, 78.7% responded they used Smart Learning Suite, while 27.7% responded they used NearPod, and 21.3% use PearDeck to engage learners. One teacher wrote, "with Pear Deck, students seem to be more engaged. Some students who are usually shy and rarely participate are more receptive to the activities in this program". In reference to NearPod, another teacher responded, "NearPod has been an outstanding technology tool for our students to stay engaged and teachers monitor their live participation whether it be a drawing activity to matching to quiz questions and use of STAAR strategies". Survey results indicate that teachers have employed the use of technology games to keep students engaged (see Table 5). One respondent wrote, "my students love to play Quizziz and show a lot of excitement when they find out they are going to play".

The theme from these survey results indicates that teachers are using interactive learning platforms and technology games to engage students in virtual learning. Teacher A, a 6th-grade social studies teacher, mentioned using GimKit, ClassKick, PearDeck, and NearPod to engage students. He said, "I tell my students that GimKit is not free, and I am paying for it, and this encourages them to participate". Teacher C, a 6th-grade social studies teacher, said she preferred to use games that allow for integration with Google Classroom to monitor and ensure students are working on the game and not doing something else. Teacher B said, "we play Quizziz, but my students ask to play Kahoot".

4.2 Level of Student Engagement

As for the level of engagement that teachers saw in the virtual classroom, 95.7% responded students posted responses in the chat to answer teacher questions, 85.1% said students asked questions in the chat, 85.1% said students unmuted their microphones to answer and ask questions, and only 31% reported using interactive platforms for students to submit responses. Also, only 29.8% reported they allowed students to share their screens to present work or products completed to the class (see Table 1).

Table 3. Student Engagement Behaviors

Student behaviors	% of respondents reporting students exhibited behavior
Posting responses in chat to teacher questions	95.7%
Asking questions in the chat	85.1%
Unmuting microphones to answer/ask questions	85.1%
Submitting responses through interactive platforms	31.0%
Student share screens to present products	29.8%
Students participate in breakout rooms	10.6%

Note. Percentage of students exhibiting the engagement behavior in respondents' classrooms.

4.3 Types of Student Engagement

Teacher responses to the question regarding types of engagement observed in class revealed that 53.2% were cognitively engaged as evidence by students asking higher-order thinking questions, 78.7% were emotionally engaged as evidenced by students displaying general interest, and 63.8% were behaviorally engaged as evidenced by students completing tasks and assignments (see Table 2).

Table 4. Types of Engagement

Types of Engagement	% of respondents reporting indicated type of engagement
Students asked higher order thinking questions	53.2%
Students display general interest	78.7%
Students complete assigned tasks	63.8%

Note. Percentage of respondents indicating the type of engagement of students in the class.

4.4 Challenges in Virtual Learning Environments

Survey responses suggest that students are showing varying levels of behavioral, cognitive, and affective engagement. On average, during the participants' observations, 50-75% of students had their cameras off during the class. The students who had cameras on had them facing the ceiling, a wall, a window, or too high only to see the student's forehead. The students who did have cameras on seemed to look focused, but it is difficult to tell if they are affectively engaged in the teacher's lesson or another website.

Participants expressed that some of their biggest challenges in virtual learning included attendance, access to wi-fi, distractions, and connections with students. Teacher C, a 6th-grade social studies teacher, mentioned that she sometimes sees students talking on the side during class or posting BRB in the chat during class. She said, "one student told me that he had to go help his mom and another said he had to help his little sister because she fell and he left the microphone unmuted, so I could hear the kid crying in the background". Teacher D, a 7th-grade teacher, expressed that she "feels helpless" and says she misses having that connection and rapport with students and knowing them as people. She said, "I often tell my students I wish I could see you; I am learning with you; it is okay if you have questions. There is no such thing as dumb questions". Teacher A said that his biggest challenge is attendance because he feels that students think the class will be boring. After all, they do not know him, so he tries to do different activities every day and uses humor to make the class more engaging. However, it is not until students start logging in to the class that they become aware of the variety of tools and strategies he uses to teach.

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4.5 Affective Engagement

All participants stated that their students exhibited varying engagement levels, but they consistently mentioned affective engagement. Teacher B stated that students post comments in the chat, such as "this is interesting, I enjoy it", and he mentioned that students show interest by going and doing research on topics covered in class. For example, he stated that while learning about Egypt and Mesopotamia's ancient civilizations, a couple of students went and searched about King Tut and the Code of Hammurabi and shared what they had learned with him in class the following day. Teacher C commented that students took pride in their work by showing neatness in what they do, and they want to show it off. Teacher D alluded to educators' vital role in securing student engagement, consistent with Fredericks, Blumenfeld, and Paris's (2004) assertion that the level of teacher support in the classroom impacts student engagement. She stated that she is willing to help them and has noticed that she will have more student participation when she uses questions to check for understanding during the lesson on Google Forms than when she does not (behavioral engagement). She noticed 75% of her students participating when they contribute to the responses, and she then shares what they say in the chat so that they can then input the information on their end in the Google Form. She self-reflected during the interview and said: "I know that it seems like the students are not working, but they are, and it is a give and take, and I have noticed that their retention on scores on assignments and tests has increased since I started doing this".

4.6 Types of Instructional Strategies Used

As for the types of instructional strategies used, survey respondents indicated they used the following: breakout rooms (17%), collaborative group projects (40.4%), collaborative group activities (46.8%), game competitions (51.1%), and student oral presentations (34%) (see Table 3).

Table 5. Instructional Strategies

Instructional Strategies Used	% of respondents reporting using strategies
Breakout rooms	17%
Group collaborative projects	40.4%
Group collaborative activities	46.8%
Game competitions	51.1%
Student oral presentations	34%

Note. Percentage of respondents indicating the use of instructional strategies.

One teacher responded that the "best strategy to keep students engaged is to purposefully question them". Another survey respondent expanded on this same idea by writing, "Constantly questioning-I feel this is important calling them out by name using incentives such as raffles allowing them to have discussions about open-ended questions and connecting it to today's society. Trying to expose the content knowledge

through all the multiple intelligences and having high expectations regardless if it is virtual". While teachers report using instructional strategies such as breakout rooms, collaborative projects/activities, and oral presentations, none of the strategies were observed in the participants' classrooms during formal observation and not mentioned during the participants' interviews. Participants stressed that visuals and technology tools are what they feel has helped them keep students engaged in learning. Teacher A said students like the bellringers he does, specifically the See-Think-Wonder, and fill in the blanks. He thinks students like these activities because he values their opinions: "I use post-its and write down what every student tells me, and I stick it onto the picture".

Teacher B and C mentioned that visuals, scavenger hunts, props, and backdrops have helped engage students. During teacher B's class observation, he used props of a miniature gold pharaoh statue, an oil barrel for oil, and the Bible for religions to introduce the Middle East lesson's key vocabulary terms. He also used a movie trailer of the famous film *Aladdin* and asked students to find evidence indicating the country was developed or developing. Many students submitted responses in the chat, indicating their response. Similarly, Teacher C mentioned making relevant connections between a lesson on Islam and showing students a mosque picture in their city. Through Class Kick and NearPod, Teacher A states he can monitor what students are doing and requires that students submit a response to questions he asks to assess understanding and ensure cognitive engagement.

4.7 Summary

A thematic analysis approach of the data collected revealed the main themes: teacher characteristics, relationships, interactive technology, and support. The overarching theme that emerged from this data was that teachers play a significant role in creating a learning environment that supports students, encourages participation through interactive technology, and nurtures relationships to promote student engagement.

5. Discussion

5.1 Student Engagement Survey Findings

The survey findings measuring student engagement in middle school social studies classrooms revealed that games and interactive learning platforms effectively contributed to cognitive, affective, and behavioral engagement. Specifically, the results revealed that teachers who had 0-5 years of teaching experience and 11-15 years of experience reported having more than one type of engagement in the classroom. 38.5% of teachers who were relatively new to the profession reported that their students displayed cognitive, behavioral, and affective engagement, and 55.5% had students that exhibited at least two types of engagement (see Table 4).

Table 6. Types of Engagement by Years of Experience

# of Respondents	Years of Experience	All three forms of engagement	Cognitive engagement	Affective engagement	Behavioral engagement
13	0-5	38.0%	53.8%	100%	69.0%
6	6-10	33.3%	50.0%	66.7%	83.3%
9	11-15	55.5%	77.8%	77.8%	66.7%
12	16-20	25.0%	41.7%	25.0%	41.7%
7	20+	28.6%	42.9%	85.7%	42.9%

Note. Types of engagement in respondents classrooms by years of experience.

These results can likely be because 92% of this same group of teachers reported that their students posted responses in the chat, asked questions in the chat, unmuted their microphones to respond, and used interactive platforms for teaching.

5.2 Technology Tools Used in Virtual Learning Environments

100% of the 0-5 years experience group of teachers use digital games such as Kahoot, Quizziz, Purpose Games, and Quizlet live to engage their students and interactive platforms such as the Smart Learning Suite, NearPod, and PearDeck (see Table 5). The most effective instructional strategies to maintain student engagement amongst this group of teachers included collaborative group projects and game competitions based on survey results.

Table 7. Technology Tools

# of Respondents	Years of Experience	Quizziz	Kahoot	Purpose Games	Quizlet Live	Smart Learning Suite	NearPod
13	0-5	100%	100%	100%	100%	100%	100%
6	6-10	83.3%	83.3%	66.7%	66.7%	83.3%	16.7%
9	11-15	88.9%	100%	0%	55.6%	88.9%	44.4%
12	16-20	58.3%	66.7%	66.7%	66.7%	83.3%	0%
7	20+	42.8%	42.8%	42.8%	42.8%	85.6%	0%

Note. Percentage of respondents indicating the use of interactive learning platforms or games.

The participants in this research inquiry fell in the 0-5 years of teaching experience range and have medium to high affective, behavioral, and cognitive engagement levels. Factors such as teacher characteristics, technology tools, and rapport affect the engagement level of students. During classroom observations, the teachers demonstrated the following behaviors towards students: they thanked them for submitting responses in the chat, recognized and provided feedback for correct responses, showed

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genuine enthusiasm while teaching, and encouraged students to share their opinions. The one characteristic that defined these participants was passion-they all took great pride in what they were teaching and provided specific and vivid details to engage learners. All participants used technology tools to engage students and provide support, whether it was through Google Slides, Google Forms, or NearPod. Exemplars, posting of questions, and essential details in the chat by the teacher helped students cognitively engage in the content. To facilitate access to resources, teachers modeled how to access needed materials and resources to complete assignments by sharing screens and modeling the steps on Google Classroom. Teachers used intentional questioning to obtain student feedback, and an overwhelming majority of students submitted written responses through the chat or the interactive platform utilized. Few students unmuted their microphones to volunteer responses on their own. Even when teachers intentionally called on students, there was some wait time before a student unmuted the microphone to respond. It is evident that in the participants' virtual classrooms, teachers have created a supportive and caring environment that is conducive to learning and engagement. Nevertheless, students still do not turn on their cameras, and few unmute their microphones to participate. Thus, despite all of their dispositions, planning, and caring for students, they are still struggling with keeping students affectively, behaviorally, and cognitively engaged.

5.3 Implications, Limitations, and Directions for Future Research

The findings in this research study suggest that teachers play a significant role in shaping the learning environment, and the instructional decisions they make influence the types and levels of engagement that students display in the virtual classroom. The mediating factor is that even though students log in to the classes, everyday teachers still do not "know" their students and have not fully developed a relationship that typically develops in traditional classrooms. Even though some teachers go above and beyond to create an inviting virtual background environment or use visuals, videos, and games, teachers can ask questions in a virtual room that will remain silent if possible for the entire class period because students will not respond.

This study's limitations are that it focused only on middle school teachers in one subject area and on participants' responses selected through the same school district. Therefore, generalizability may be limited. A broader research inquiry may reveal a better understanding of types of engagement exhibited in virtual learning environments over a prolonged time and a broader area with a larger sample size. An additional research area might be exploring how to incorporate social-emotional learning principles and activities in social studies classrooms to help teachers develop relationships with their students to increase student engagement. Also, since teachers contribute to students' engagement, further inquiry into how teachers understand engagement affects student engagement is needed.

6. Conclusion

The upheaval brought to the education system by the COVID-19 pandemic has created opportunities for educators to think outside of the box to provide high-quality instruction and meet state standards while struggling to maintain student engagement. The findings of this qualitative research inquiry revealed that teachers' daily struggles with behavioral student engagement include having students turn and keep their cameras on, having students unmute their microphones to respond when intentionally called on, and completing assignments and tasks. Teachers that use interactive learning platforms such as Pear Deck and NearPod reported having greater student engagement during instruction. Also, utilizing technology tools that encourage game competitions such as Quizziz and Kahoot motivated students and contributed to cognitive and emotional engagement. The majority of interaction between students and teachers during virtual learning is through the chat feature of Google Meet by where students post responses to teacher questions and ask questions.

Engagement is a triangular construct that encompasses the affective, cognitive, and behavioral domains. Depending on individual abilities and general interest in the class (Borup, Graham, West, Archambault & Spring, 2020), students will exhibit behaviors at various engagement levels, but it requires teacher ingenuity, passion, and perseverance to ignite that passion for learning. Fredericks, Blumenfeld, and Paris (2004) argue that "engagement, once established, builds on itself, thereby contributing to increased improvements in more distal outcomes of interest" (p. 61). Thus, the implication is that teachers must continuously gauge students' level of engagement, adapt instructional strategies, get to know their students, and have a strong presence in the virtual learning environment to ensure continuous student engagement.

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