Exploring Students' Engagement of Using Mediating Tools in E-Learning

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Abstract—People are looking for flexible learning ways to meet educational needs in today's world context. There is an increasing need and expectation for universities to incorporate technologies into the design and delivery. It is of significant interest whether the increased use of electronic tools and the provision of online teaching resources positively impact students. The function and influence that a mediation tool can have should be evaluated more closely, rather than viewing them as just assistance. Student involvement is generally regarded as an important benchmark and indication of the quality of the student experience in higher education. Still, the idea is challenging to define and is interpreted in various ways throughout the literature. Hence, this study explores how students experience online learning using the mediating tool. Semi-structured interviews were applied to determine the types of student engagement. The interviews were recorded and transcribed by thematic analysis (Braun and Clarke, 2006). The results showed that the mediating tool positively supports social engagement, behavioral engagement, collaborative engagement, emotional engagement, and cognitive engagement. Implications shed light on teachers, designers, and students when using the mediating tool in online learning.

Keywords—mediating tool, online learning, engagement, activity theory

1 Introduction

University-level online education is becoming more common, giving learners contributions or new engagement patterns. This new worth comes from advancements in the new age [1]. This learning trend fits critical criteria in today's environment. Online education provides students with more options than ever before [2]. Many major nations encourage online learning to provide their students with the most effective learning environments possible [3]. As a result, comprehending the influence of online educational technologies is critical to contributing to global education.

Vietnam is a growing country that is exploring new approaches to the trend of online education. Universities have long been interested in enhancing student learning outcomes by utilizing modern technology to deliver instructional materials, promote faculty-student engagement, support student learning communities, and manage student

learning progress. Regardless of the obstacles that this trend poses, the benefits of online education are substantial. An e-learning environment allows students and higher education institutions to easily exchange and receive learning information at any time and from any location, as well as integrate it into the global educational environment. It is critical to evaluate the opportunities that online learning may bring to the classroom.

Many academics are investigating tools to promote online learning since they are required. Online learning tools come in various shapes and sizes, each with its own set of advantages [4]. These tools are created from a variety of platforms to provide a variety of benefits [5]. Vietnamese university students have the opportunity to use EduNext, a social construction platform-based intermediary tool for online learning. The EduNext tool incorporates elements from a variety of contemporary technological solutions.

Student participation is crucial when using mediating technologies for learning and should not be disregarded. Student involvement is generally regarded as an important benchmark and indication of the quality of the student experience in higher education. Still, the idea is challenging to define and is interpreted in various ways throughout the literature. This research aims to understand students' experiences better using the mediation tool Edunext in online learning. Furthermore, this study aims to explore the students' level of cognition based on their experiences in e-learning.

Research questions:

1. What are the forms of student engagement in E-learning that students experience via the use of a mediating tool, Edunext?
2. How does the EduNext tool affect students' engagement in E-learning?

2 Literature review

2.1 Activity theory

The beginnings of activity theory (AT) may be traced back to Soviet psychology, where it was used to examine and theorise about the genesis and evolution of distinct characteristics of human behaviour throughout history [6]. Vygotsky, Leont'ev, and Luria's work on cultural-historical psychology served as the foundation for activity theory [7]. Activity theory is a lens to analyse human cognition and activity patterns. It enables us to comprehend the interplay between people and consciousness [8] and humans and technology [9].

Vygotsky's initial concept was to apply AT to an activity process with three major components: Subject, Tools, and Object. The Subject is defined as the participant(s) in the activity, the Object is the action's goal, and Instruments are the artefacts or mediating tools that mediate the Object in the activity [10]. Engestrom expanded on Vygotsky's original theory by incorporating two new elements: rules and labour division. These two new variables combine to generate a new feature, Community, which aids in tying persons together in the activity.

Individual acts are viewed as a unit of study and as the key to comprehending human activity in applying activity theory. Activities, according to activity theory, cannot

occur in the absence of Objects, activities are always driven by a goal and are mediated by tools and artefacts. These tools are man-made because they are required by nature and civilization. In other words, intermediaries only make sense when they are embedded in a meaningful process. Understanding mediating instruments historically is a progression that imprints historical and cultural processes.

Researchers have analysed and demonstrated AT to be an adequate theory for understanding operational processes in the realms of education and technology [11]. According to [8], AT is a suitable framework for investigating constructivist learning contexts. On the other hand, [12] proved AT in grasping E-learning systems.

This study investigates the interaction between the EduNext tool and students for constructivist questions in an E-learning scenario using AT as a theoretical framework. E-learning is a comprehensive activity in which the learner is the action. The movement's goal is to increase student participation.

2.2 E-learning

E-learning is a type of online learning where students interact with teachers and other students at their leisure and delivered via the internet and technology [13]. E-learning can be delivered synchronously or asynchronously. There are no time restrictions, and students and teachers are not required to be online at all times.

2.3 Mediating tool

Tools are classified as "Intermediate Artifacts" [14]. According to AT, both internal and exterior (or physical and mental) tools have a role in human activity [15]. A computer or a book are examples of external tools, but a mental model, thought, or plan is an inside tool. Tools have a tremendous influence on how individuals act and interact with the world [16]. Tools are created to assist humans in changing objects in their surroundings. Vygotsky also believed in two types of tools: technical (physical) tools and psychological (conceptual) tools [17]. Psychological tools are conceptually based and aim to change human behaviour and cognition.

2.4 Student engagement

Student engagement is defined as successful educational participation in hands-on activities both inside and outside the classroom, resulting in quantifiable outcomes [18]. Furthermore, [19] define as "the degree of effort pupils themselves dedicate to educationally purposeful activities that contribute directly to desired results." Student engagement is concerned with the interaction between the time, effort, and other relevant resources committed by both students and their institutions to promote student learning outcomes and progress and the institution's performance and reputation [20].

[21] offers indicators for five important aspects of online engagement and an assessment of how these factors interact. These five elements are necessary for effective student interaction in the online learning and teaching environment. The engagement overview delves deeper into participating in online environments. Engagement across

social, cognitive, behavioural, collaborative, and emotional domains is crucial for online teaching and learning settings.

Social engagement. Social engagement occurs in an online learning environment when students discuss about themselves and their surroundings; they may connect continually via social media [21]. When students are required to work with peers for assessment and learning activities, social engagement is essential, and it is connected to socio-emotional and social engagement [22].

Students can expand their opinions, beliefs, and perspectives through social participation, which forces them to confront alternative ways of perceiving the world [23]. It has been demonstrated that "social interaction is as vital as academic activities" [24]. Being socially engaged means getting to know other students in class, whether online or in person, becoming friends with them, and attending social activities with them. Forming positive relationships with instructors and classmates is another part of social engagement, as is being proactive in joining a learning community [25].

Through various available technological tools, students may exhibit social participation in the online learning environment. It is common for students to complete a course online, which may be utilised to interact with others and allow network and learning. Social involvement in the learning environment may be demonstrated by actions that create community, such as social forums and open communication platforms. It entails developing friendships and connections with students and teachers and productive working and studying interactions. Social engagement in a learning community requires building relationships, respect, and trust to establish a sense of belonging and group cohesiveness [22].

Cognitive engagement. The fundamental type of engagement is cognitive engagement [26]. The steps of knowledge construction are as follows: information collection, information transformation, and knowledge construction. Learners pick appropriate material, organise and integrate it with past knowledge, and develop specific tasks during the information transformation phase. The outcomes of the knowledge-building process are realized.

Deep cognition and surface cognition are the two degrees of cognition. These variations within each category demonstrate that participation may vary in intensity and length; it can be short-term and situational, or long-term and persistent. It is realistic to expect that once a degree of participation has been established, it will continue to develop in more distant outcomes of interest, which is mental engagement [27].

Contributions that give answers without judgement or justification, repeating ideas without clarification, or general agreement with others without explanation or more aid would be examples of cognitive participation in the online arena. At this level, pupils are easily distracted, employ avoidance techniques, and are more concerned with finishing the task than learning from it. Deep cognitive involvement in pupils is related with more difficult processes. Their online writings defend or compare views and solutions; they mix information from many sources, provide fresh information, make judgements, integrate data, and back up their statements [28]. Deep intellectually engaged learners self-regulate or employ metacognitive approaches to plan, monitor, and measure their cognition.

Behavioral engagement. There are three ways to define behavioural engagement. The first meaning includes positive conduct, such as adhering to school norms and

standards, and the lack of disruptive behaviours, such as truancy and getting into trouble [29]. The second description encompasses acts such as effort, perseverance, focus, attention, questioning, participation in class discussions, and involvement in learning and academic work [30].

Students also develop learning abilities that help them obtain good achievements through these study habits. These talents include academic reading, writing, listening, planning, time management, and goal setting [31]. Despite focusing on student involvement at the school level, [27] offer three characteristics of student engagement based on Bloom's taxonomy (1956). Students that are behaviorally engaged are more likely to follow behavioural standards like attendance and engagement and are less likely to engage in disruptive or negative conduct [20].

Collaborative engagement. Forming numerous contacts and networks that assist learning, such as those involving classmates, instructors, industry, and the educational institution, is referred to as collaborative engagement. Conversation, tutoring, study groups, and group projects or exams are all related with academically advantageous peer collaboration. Students who learn online are more likely to cooperate online since they are less likely to be geographically close to their peers. Creating suitable learning settings is closely tied to collaboration with academics and the institution. Through group or team activities and classroom evaluation, instructors typically generate a need for collaborative engagement [21].

Emotional engagement. Emotional involvement refers to students' emotional reactions to learning. It is related to the affective or emotional side of involvement and has to do with their sentiments or attitudes toward understanding [21]. Students' emotional reactions in the classroom, such as curiosity, boredom, enjoyment, sadness, and anxiety, are referred to as emotional involvement [32]. [33] developed a taxonomy that distinguished between good and negative academic emotions and between activating and deactivating academic emotions. Emotional stimulation is connected to engagement. Emotions play an important role in the online learning environment and influence students' learning experiences [34]. Good emotions have positive outcomes, whilst negative emotions have negative outcomes. In conclusion, "interest, values, and emotions" are all components of emotional involvement.

2.5 Previous studies

According to [4] looked at how digital tools affect students' involvement. Web conferencing software, blogs, wikis, and social networking sites (such as Facebook and Twitter). The research included a collection of 69 publications on engagement styles and technology. Research shows that three dimensions of engagement—behavioral, emotional, and cognitive—are affected. The findings of the study indicate that most technologies have a favorable impact on the student engagement rating. The three different forms of interaction were specifically and most significantly influenced by digital gaming. This outcome demonstrates the range of advantages offered by online gaming. Users may practice functions and put new information into practice in a pleasant and stimulating learning environment provided by digital games. Additionally, using digital games, conferencing software, and Facebook positively affected student engagement.

The integration of functionalities enables students to share and connect with peers and teachers while giving them plenty of opportunities to participate. Facebook's influence can be explained by users' familiarity with and interest in it, even though students find it less appealing than Twitter. Because of their restricted analytics, wikis and blogs are the platforms with a minor effect on student engagement. The study also assumes that different technologies have an impact on behavioral involvement. The study's findings are just a collection of research using small sample size and are restricted to specific situations during a brief time period.

Considering student engagement or non-participation, [35] examined perspectives, attitudes, and experiences in online activity. Utilizing virtual learning environments, they construct instructional techniques to boost students' participation in online learning activities (VLE). According to that research, there is an interaction between the VLE platform and students, and the VLE platform uses collaborative learning activities like forums and multiple-choice and fill-in-the-blank questions. Additionally, students can manually upload files to the VLE. Since learners have plenty of time to connect with learning materials or through online chats, they may quickly communicate, publish, or email their thoughts and reflections with learning materials from the VLE, which can help students build reflective abilities. According to research, students who utilize VLEs complete their courses at a higher rate than those who do not. A comprehensive teaching and learning technique includes using mediating learning technologies. The findings demonstrate that students' assessment motivation is based on three factors as their motivation to utilize the VLE; their perception of how the tool has influenced their engagement is indicated via their learning styles, and the tool's usefulness to them.

3 Method

3.1 Research sampling

Students who have participated in learning with the learning tool in higher education were the original criteria for choosing samples for analysis. We employed deliberate sampling approaches to meet the aforementioned criteria. Purposeful sampling in qualitative research means that researchers intentionally select people who have experiences with the central phenomenon or key concept being explored in the study [36]. We used this strategy to choose pupils who have previously used the Edunext mediation tool. A qualitative technique was utilised to identify the sort of student involvement that happened in an online learning environment using a mediation tool and the degree of cognition that students engaged in. 22 students in total who have taken one online course utilising the Edunext technology participated in this study. 22 participants were participated in the interviews with 15 females and 7 males with different majors. Eighteen participants were in Business Administration, one in English language, two in Multimedia communication, one in software engineering. 21 out of 22 were 22 years old, and the only one was 21 years old. All of them have experienced 45 hours learning on Edunext.

3.2 Research instruments

This study used semi-structured interviews. The interview questions were open-ended. The interviews were done in Vietnamese utilising the online meeting technology Google Meet. We acquired authorization to record the chat in order to collect all of the data required for the study.

3.3 Mediating tool–Edunext

EduNext is a mediation tool that blends various aspects to promote student connection with one another as well as interaction between students and teachers. Students in the class are accountable for responding to constructive questions posed by the teacher. EduNext also allows students to star vote on each other's replies. Because the questions are a type of social construction, the responses are always generic. Teachers frequently remark on the answers in order for pupils to absorb them in the right path. The answerer's identity is concealed, the amount of stars awarded is determined only by the correctness of the answer.

EduNext also allows students to rate each other's answers by star voting function. Discuss function on Edunext allows teachers to ask questions and students to participate in responses. The questions are a form of social construction, so the answers are always general. Teachers often comment on the answers so that students can absorb them in the correct direction. Grade function is a representation of each other's rating by star voting. The information about the answerer is anonymous, so the number of stars depends on the accuracy of the answer, not on familiarity. The interaction between peers is developed by EduNext through the integration of chat between group member function. Members in the same group can use the group chat feature to discuss with each other. Group members can exchange text or visual information through this chat function.

3.4 Data collection and analysis

Prior to data collection, ethical permission was obtained. We emailed the interview schedule to all participants. In addition, we explained the nature of the research and provided a consent form, assuring students that their personal information would be kept anonymous and used solely for research reasons.

We used the following criteria to choose participants:

(1) Attending FPT University in Can Tho.
(2) Be experienced studying 45 hours or more of Edunext.
(3) Be open to sharing thoughts and ideas.

Between two researchers and one participant, it took 20 to 30 minutes for each interview. The first three minutes were spent getting to know the participants in order to establish a relaxed and comfortable environment for sharing experiences. They were told of the study's objective by the researchers.

Using characteristics of student engagement, we created a semi-structured interviews.

With the participants' consent, we began taking notes and recording audio; each audio file lasted between 20 and 30 minutes. We maintained a safe file after the recording was finished to protect everyone's identities.

Two persons were conducting the interviews on Google Meet and recorded for transcription. The total interviews were approximately 440 minutes, with around 20 minutes per person.

During the interview, we got permission from the participants to record the whole conversation to confirm that the transcription was thorough, which took around 20 minutes each session. Transcription was analyzed by theme analysis [37].

3.5 Reliability and validity

The consistency, stability, and repetition of informants and the capacity of researchers to gather and record information effectively are all aspects of reliability [38]. The data was gathered using the theoretical framework presented in Literature. The theoretical framework and thematic analysis approach were used to produce topics for analytical usage.

In qualitative research, inter-coding agreement occurs when two independent coders evaluate the same data, compare it, and decide if they have the same code and distinct themes. Data triangulation was also used to assess dependability. Another important factor in assuring dependability is triangulation. External assessments and comments are typically seen to ensure dependability; so, the outcomes of data analysis were reviewed and agreed upon with the participants. Furthermore, all researchers shared the transcription and met on a regular basis for coding and analysis. Two separate coders coded 36,36 percent of the total data to ensure the correctness of the coding. The coders agreed on 90 percent of the coding. [39] suggested that the coding be consistent.

This study employs validity techniques. The first approach is to employ theory triangulation to establish validity. The group's two coders collaborate to create a theme that makes sense depending on the theoretical framework being employed. The second step is to do a member check. The researcher validates the participant's replies after the participant has answered the interview questions so that the message given is confirmed.

4 Findings

Thematic analysis was used to assess the data of a total of 22 participants. Data revealed five forms of student engagement in E-learning using the mediation technology EduNext: social engagement, behavioural engagement, collaborative engagement, emotional engagement, and cognitive engagement.

4.1 Social engagement

All 22 students who participated in interviews agreed that EduNext was a tool to build a learning community. Student 3 stated: *"I often participate in group activities*

to answer questions on EduNext." Student 19 mentioned: *"EduNext helps build a learning community by allowing everyone to contribute to the content of the lesson."*

18 out of 22 students felt part of the learning community through the EduNext tool. EduNext is a learning community where students can freely contribute their ideas, absorb ideas, and have cooperation between students. Student 14 said:

> *"Through EduNext, I find it easy to integrate into the learning community because I can contribute ideas and share my personal views on an issue or question. At the same time, I can also learn and observe and absorb the opinions of lecturers and friends around. Besides, I can also grade the presentation or critique the lectures comments from other groups."*
>
> 12 out of 22 students developed a relationship with the EduNext tool. Student 9 said: *"EduNext helps build friendships because everyone has to contact and communicate with each other regularly to answer questions so that we will stick together."*

15 out of 22 students established trust with their classmates when participating in activities on EduNext. Student 6 said: *"I trust the opinions of the leader and other members."*

4.2 Cognitive engagement

22 participants indicated that they had to go through stages to knowledge construction on EduNext from information acquisition, information transformation, and knowledge construction, especially the information transformation phase.

> *"I will look at the documents, see the teacher's slides, and have to think to understand the questions; then I will search online to come up with the answer, I will summarize and send it to my friends to see and record the previous lesson." (student 2)*
>
> *"I search for keywords to understand what the question is trying to emphasize and what to ask and then relate the knowledge I have learned and the teacher's lectures in the class, thereby making judgments and inferences to put the answer on EduNext." (student 11)*
>
> *"I deal with searching for information or according to the knowledge I have learned. I usually look for information on lecture slides or ebooks more than on the internet. First, I read the question and analyzed it. Then I search in the slides first, and then if it's not there, I'll search online. If it's not on the internet, I'll ask my friends around." (student 10)*

Surface level cognition

12 out of 22 participants answered the question by looking at the given materials, and searching for more information on the internet. Student 15 said: *"After reading the question, I looked at the relevant documents and found the answer."*

Deep level cognition

10 out of 22 participants said they were able to integrate ideas and justify decisions.

"I combine my own thinking and information found on the internet to answer the questions." (student 21)

"To answer questions on Edunext, I often find key content from textbooks. Then I will compare the results from the internet." (student 16)

"I usually prepare answers from references first, ask myself questions and search for answers on the internet. Then listen to the teacher's comments and draw conclusions." (student 14)

4.3 Behavioral engagement

20 out of 22 students identified opportunities and challenges when engaging in learning on the EduNext tool.

"I developed my writing skills while studying on the EduNext tool." (student 13)

"I improved my time management skills because I had to adjust the time to answer questions so that I would not be late. I also enhanced my communication skills because I had to discuss with my group members to answer difficult questions regularly." (student 6)

"I often get support from my group members. When I encounter difficult questions, they always explain to me." (student 15)

"My friends and I encourage each other when we are both bored." (student 18)

Some students face the challenges of time constraints and precise material resources.

"The material resources are so diverse that it is difficult for me to access the correct source. It is very hard for me to find the material and answer a question in about 10 minutes." (student 8)

4.4 Collaborative engagement

All 22 students actively participated in learning with friends, especially group discussions in each class.

"Class members will divide each other into groups, before giving answers, members will have a few minutes to discuss and give ideas. Then they write down any good ideas and discuss them. Then they have everyone reread a series of group members' answers together and find the one that best fits." (student 11)

13 out of 22 sought helps from another major if the subject was relevant, and 12 students had connections within their majors. Two respondents stated that

"Sometimes, when I am studying negotiation, I have problems related to information technology. I still go to ask friends in the field of technology or information security." (student 1)

"I have connections with other members of the field of study." (student 20)

4.5 Emotional engagement

16 out of 22 students said that learning online with EduNext helped students motivate themselves to be more active and work harder in their studies.

> *"Learning on EduNext will be more convenient for knowledge acquisition. I learned a lot of new things and listened to everyone's opinions, thereby motivating myself to study more actively to be able to keep up with everyone." (student 17)*

15 out of 22 students realized their self-motivation when participating in activities on EduNext.

> *"Normal subjects that do not use EduNext do not force me to work or text but just listen. But for EduNext, I have to message, find out information and rate other people's posts, so I do all the steps to get points. That makes me try not to be lazy." (student 2)*

16 out of 22 students said that when studying on EduNext, emotions play an important role in learning, most of the constructive questions keep them interested and curious to find answers. Comment on this issue: *"If there is no emotion, it will not create a sense of interest and make students bored quickly, not effective in learning."*

The use of a mediating tool to promote teaching and learning development exemplifies the effectiveness of online learning. This research emphasises the importance of employing a tool as a facilitator in online learning to assist and improve students' participation. The development of students, particularly their abilities, is an essential component of providing online training. Universities then design training programmes appropriate for this setting to provide the optimum learning environment for their students.

The EduNext puts a strong emphasis on social participation. It creates a learning community in which students can develop learning relationships. Collaborative involvement allows students who form learning communities to identify connections. To assist the learning process, the EduNext technology influences how students engage with professors and peers-to-peers inside the same institution. However, the bulk of learners' cognitive engagement on Edunext is merely at the surface level and has not reached the depth of knowledge. This also demonstrates the need of using a mediating tool in conjunction with instructional presence.

In conclusion, our study has presented a more complete picture of students' experiences using mediating tools in e-learning. There is no denying that a mediation tool such as Edunext is extremely important and beneficial to students' learning development. From there, colleges and teachers will be able to better analyse student engagement in learning in order to develop suitable teaching and learning techniques using a mediating tool.

This study supports institutions' claims that a significant portion of learning is supported by mediating technology aids. Teachers and mediator tool creators are aware of how useful the assignments or directives are. Students work together and engage in active learning. But cognition is what educators, designers, and institutions should take into account in this situation. The majority of participants said they solely looked

up material online to respond to the questions. As a result, some people don't fully get the ideas or concepts. In order for instructors to rely less on the gadgets, this raises the question of whether they should spend time giving face-to-face lessons again after utilizing mediating technologies.

5 Discussions

According to the findings, the mediating tool EduNext has the greatest influence on students' social involvement. Students are more socially engaged and actively involved in the course construction process by participating in group discussions and answering questions on Edunext. Because EduNext is a tool based on the social constructivism concept, student participation always entails the creation of a learning community in social interaction. Creating a feeling of belonging, forging connections, and establishing trust are all components of an effective learning community. The findings support the findings of [23], who found that students may acquire and widen their knowledge and viewpoints by engaging in learning communities formed from a range of sources. Then, in the E-learning process, a sense of belonging is essential. Social involvement necessitates the formation of connections and trust [22].

Although cognitive engagement is the most common type of student engagement, most students engage at the surface level, while a small percentage engage at the deep level. Students simply participated in learning to complete tasks, not to really comprehend the underlying subject. Several students using the EduNext platform are unable to grasp questions because their topic knowledge is too vast and their time is restricted, preventing them from analysing issues and providing intelligent replies. The findings of this study are comparable to those of Fredricks et al. (2004), who discovered that when people engage in surface cognition, they merely seek knowledge to provide without additional examination or explanation from friends and teachers. Furthermore, some students are unable to learn profoundly since they are involved in other disciplines, and their professional expertise is still restricted during their education. On the other hand, other students contribute in more detail because they fully utilise their strengths in the EduNext. After completing a task, learners get immersed in cognition; they utilise metacognitive approaches to plan, monitor, and assess their comprehension [27]. It is consistent with [40] to prove the importance of self-factor, teacher factor, peer factor and technological factors to cognitive engagement.

Students enrolled in Edunext e-learning must follow strict attendance and time management guidelines. Students discover that behavioural participation helps them develop academic and transdisciplinary abilities such as writing and time management. The majority of students are aware of the potential and challenges when participating in Edunext learning. Students who are aware of these factors are more likely to obtain unexpected results. The findings are consistent with those of [31]. The findings reveal that agreement with [20] about behavioural engagement is demonstrated by adhering to general rules to achieve high learning performance. The mediation tool Edunext is intended to engage students in performing activities to develop courses properly. Students must engage in class and answer assigned questions to receive credit.

In addition to certain students who are limited in their scope of collaboration in the classroom, many students feel that by participating in learning with EduNext, they will be able to interact with faculty members and establish a professional network by creating a place for exchanging and sharing. Students can seek assistance from peers and professors in the same or different majors. The findings support the findings of [21] that interactions with classmates, other majors, or professors can help students improve their learning through collaborative participation. It is in line with [41] to highlight the significance of understanding different identities which enhance engagement in online communities.

As a result, emotional involvement has a moderate impact on students' experiences. Participating in online learning through a mediating technology elicits a range of feelings, including enthusiasm, curiosity, and worry. Students take part with trepidation since their responses to questions are built by deciding the subject's score that they take. It is in line with [42] that students have generally positive emotional engagement in online learning environments.

They wish to learn a lot of fresh information and perspectives through EduNext inquiries. They fully comprehend the importance and use of EduNext—the mediating tool it provides.

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