

# Role of Multimedia-Aided EFL Classrooms in Promoting Learners' Interaction and Participation in Tertiary-Level Bangladeshi Students

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**Abstract**—With the expansion of technology, multimedia has now reached every periphery of human life. The teaching-learning scenario in Bangladesh is no exception. There is hardly any higher educational institution that is devoid of multimedia. Technology is deemed a powerful tool for aiding EFL classroom instruction, as Joshi (2012) mentions how multimedia classrooms enhance “students’ chances for interacting with diverse texts, which further provide them a firm background in the tasks and contents of mainstream courses.” The intended study will, therefore, investigate technology’s role in promoting EFL (English as a Foreign Language) learners’ classroom interaction and participation in Bangladesh’s public and private universities. This study explores whether EFL students can concentrate and learn better when multimedia is used in the learning process. This study will further investigate EFL learners’ attitudes toward multimedia-based classrooms. A survey questionnaire and focus group discussions (FGDs) will be used as part of a mixed-method design. The thematic analysis technique will be used to look at the qualitative data, while MS Excel will be used to look at the quantitative data. The outcome indicates positive attitudes among students towards multimedia-infused lectures in EFL classrooms in terms of participation, interaction, and understanding of the content.

**Index Terms**—multimedia, e-learning, interaction, participation, EFL

## I. INTRODUCTION

How people learn in the 21st century is almost entirely different from how people learned in the 20th century. Students and teachers are both expected and comfortable to learn and teach with the help of multimedia. Especially in language learning instructions, the use of multimedia has opened a whole new pathway of possibilities. During the pandemic, students became more tech-dependent. However, in Bangladesh, the presence of multimedia at the school and college levels is little to none. Therefore, when students start their undergraduate-level studies, the sudden shift from a traditional classroom environment to a multimedia classroom environment can be overwhelming. By the time they finish their graduation, students are expected to be ready for the job market, which requires a steady grasp of the international language. Therefore, the EFL classrooms and lessons are designed to equip them for what is coming next. Multimedia is used in EFL classrooms to make learning easier and more fun for the students. Lin and Wu (2020) say that students can learn complete and organized information from multimedia sources than they can from learning information that is unrelated and does not fit together without multimedia. To understand how multimedia works, Gilakjani (2012) pointed out that multimedia is “any computer-mediated program or interactive application which combines color, information, pictures, animation, audio, and full-motion video in a single application”. Furthermore, Mayer (2001) says that using text, graphics, images, audio, and video to show information makes for a complex, multisensory learning experience. There is evidence that mixing words and images facilitates comprehension of vast amounts of information.

This material aids students to engage in their studies more than they used to in traditional classrooms. With the availability of multimedia in EFL classrooms, learners are interacting and participating more. Warschauer (1997) wrote that using multimedia in education can create a calm and non-threatening learning environment that can boost students’ motivation and self-esteem and reduce their anxiety in the classroom. So, it is safe to say that students are more eager to attend multimedia classes and take part in them. With the help of multimedia, students can engage with texts that are more real and true to life. This rapid use of multimedia in EFL classrooms can have negative effects as well. The goal of this study is to find out how much EFL students participate and communicate with each other in the classroom, with or without technology. Students need a good teacher with much potential if they are going to learn a new language in a multimedia setting. If the teacher has enough experience, he or she can try out different ways to teach and make the classroom experience better for the students. The purpose of the study is to identify whether and to what extent the use of multimedia promotes students’ interaction and participation in the EFL classroom.

## II. RESEARCH QUESTION

1. Do students in their first year of college find it helpful that EFL classrooms have multimedia?

2. Does the presence of multimedia in the classroom help students better grasp the language?
3. Does multimedia in the EFL classroom motivate students more than in traditional language classrooms?

### III. LITERATURE REVIEW

In order to know about the benefits of multimedia, it is crucial to explore the definition and evolution of multimedia in the education sector. Schwartz and Beichner (1998) say multimedia is "the use of different kinds of media in a presentation". Singh (2003) says that the definition of multimedia is the use of text, graphics, animation, pictures, video, and sound to present information in a logical way. Woodward (2000) similarly says that multimedia is the integration of media like text, sound, graphics, animation, video, and images into a computer system. Therefore, it is safe to say that multimedia uses almost all of our senses, so it can be said that multimedia is a tool that stimulates the senses of the audience in more than one way at the same time. Multimedia classrooms are interactive; teachers can control what the information is and how it is given (Shah & Khan, 2015). Gilakjani (2012) mentioned that using multimedia in the classroom not only makes students interested in the lesson but also helps them understand and remember more. As individual students have different learning styles and paces, multimedia can provide a variety of learning styles at the same time to meet the needs of different students and address individual differences. Even though there are some possible drawbacks to teaching with multimedia, the benefits of teaching and learning have been seen over the years. Multimedia is the best way to create the meaningful learning environment that cognitivism and constructivism call for. Studies conducted by Mantei (2000) and Szabo and Hastings (2000) found that students can perceive and apprehend information better when lectures are given with PowerPoint. Using multimedia in education ensures learners' attention and piques their interest by creating a non-threatening and interactive learning environment.

Mayer (2001) stated in his book titled *Multimedia Learning* that giving students narration for the ears and visuals for the eyes allows them to use dual channels simultaneously, which can benefit students in receiving and remembering information longer than usual as it does not overwhelm one channel and allows them to partake in active cognitive processing by making connections between audio lectures and visual presentations. Therefore, if the information is given through two or more of these channels, it will be reinforced more, and people will remember it better and learn more (Ellis, 2004). Most people forget the complicated plot of a fairytale, but when it is shown in a movie, people rarely forget it. This is because a movie engages the audience's mind, eyes, and ears, while a book only engages the audience's mind. "People only recall 15% of what they hear and 25% of what they see, but they remember 60% of what they interact with," as per Wolfram (1994).

In the field of EFL education, the constructivist theory has shifted the focus of learning English from the teacher to the students. This means that English language learners can take charge of their own learning by developing their communicative skills instead of relying on the teacher in traditional English language classrooms (Jeong, 2018). Yang and Fang (2008, p. 137) said that using multimedia to teach emphasizes the students' role and makes "interaction" between teachers and students more important. Sharma (2013) found that the multimedia method worked better for low achievers than for high achievers. Not only that, but they also found that this method made the class lively and interesting, as well as optimized its organization.

Wu and Lin (2020) did a study with 31 Taiwanese students and found that pictures and videos make it easier for people to learn new words. They also mentioned that multimedia allows students to absorb more information. Similarly, Jeong (2018) found that freshmen in Korean universities found that learning materials with multimedia were interesting, entertaining, and helpful.

Studies have shown that computer-based multimedia can help people learn and remember better than traditional lectures or study materials without multimedia (Fletcher & Tobias, 2005; Kozma, 1991; Mayer, 2001). Lastly, studies conducted by Astleitner and Wiesner (2004) have also suggested that student satisfaction and motivation are higher in courses that use multimedia materials.

### IV. THEORETICAL FRAMEWORK

This research is designed using Mayer's book on *Multimedia Learning*, which focuses on the use of multimedia materials in order to boost the learning process. The cognitive theory of multimedia learning is a set of 12 rules that came out of his extensive and exploratory research. According to his study, three assumptions were made to pinpoint how humans process information.

The first way is the dual-channel assumption. The first channel is the visual-pictorial channel, which looks at visual information like words on a screen. The second channel, the auditory-verbal channel, processes spoken words.

He also shows that people can only remember a certain amount of information at any given time. Mayer (p. 67) says that the average person can hold between five and seven "chunks" of information in their working memory at the same time, but this number is hard to figure out.

The third assumption he made is called the active-processing assumption. It says that people do not learn by passively taking in information but by actively taking part in cognitive processes. He says that students are not "empty vessels" waiting to be filled with information. Instead, he says, they must combine words and pictures into information

that makes sense and can be stored in long-term memory. Mayer advocates a constructivist perspective on learning in which multimedia is not merely information delivery systems but cognitive supports for knowledge building.

Therefore, this research aims to pinpoint how delivering information using dual channels can contribute to learners' learning outcomes.

V. METHODOLOGY

The focus of this study is to identify the effectiveness of multimedia learning at tertiary levels in Bangladesh and whether or not it has a positive impact on student participation and interaction. The study was conducted using a mixed method. Quantitative data was collected using a questionnaire first to gather a general impression of students' perception of multimedia classrooms, followed by a focus group discussion. Students who expressed their interest in participating in the follow-up discussion were asked to participate in the focus group discussion. In total, 50 students participated in this study and are currently in their first year of undergraduate studies, coming from both public and private universities. First-year students were chosen because they do not usually get enough exposure to multimedia learning in their secondary and higher secondary levels in Bangladesh. Therefore, it is easier for them to distinguish the difference and compare their feelings regarding the methods used at their school-college level to those at university when they are exposed to multimedia-based learning in their first year of university. Students from different departments answered the same questions about how they felt about getting lectures that included multimedia in their basic English classes. The students' majors varied by design to maintain authenticity and impartiality.

Following the questionnaire, some students were later asked to participate in the focus group discussion (FGD) to get a deeper insight into the topic. A focus group discussion is "a group of people chosen and gathered by researchers to discuss and remark, from personal experience, on the topic that is the subject of the research" (Powell & Single, 1996, p. 499). The discussion went on for an hour and a half, following five basic questions regarding students' experience with the use of multimedia in the classroom. Responses were further facilitated with some follow-up questions appropriate to the context.

Instruments

This mixed-methods research was conducted for the purpose of studying the learners' level of interaction. Fourteen close-ended and one open-ended question (see Appendix) were provided. A few questions were on a five-point Likert scale, and others included options. This five-point Likert scale represents- 1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree.

VI. DISCUSSION AND FINDINGS

In the first step of gathering information, students filled out a 15-question survey about how they liked to learn in multimedia and lecture-based classes. All participants have at least some sort of multimedia device in their classroom. The majority of the students mentioned that they have overhead projectors, routers, and computers. Because the participants came from both public and private universities, some students claimed to have advanced technological devices. After that, students were asked questions to understand their initial perception of multimedia classrooms, which may or may not aid their learning. It was crucial to set a baseline of how many students have solely lecture-based classes to determine if they consider multimedia classrooms effective. Approximately 51% of students responded as having solely lecture classes. However, while asking the same question later, during the FGD, they stated that these classes are limited to specific courses and not limited to EFL classrooms.

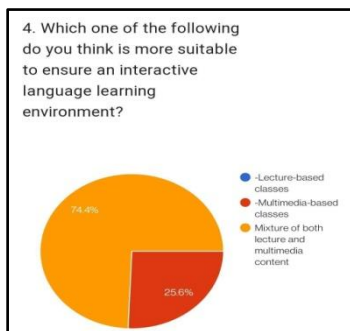


Figure 1. Students Preference Regarding Multimedia-Based Classroom

Nevertheless, it needs to be figured out how much they are used, how they fit into the lecture, and if it helps the students. According to the survey, 74% of people like classes where teachers use multimedia to teach course material, which is made easier by lectures (see Figure 1). Around 71% of students said that they can use multimedia equipment in class; however, more than 50% said that they do not think multimedia is distracting in any way from their learning.

It was important to understand to what extent they were exposed to multimedia-based learning to understand the effect of multimedia on their learning process. More than 85% of students responded that multimedia is somewhat

integrated into their regular EFL classes to some extent. Also, about 84% of students said that multimedia is an important part of how they talk to their peers and teachers in class (see Figures 2 & 3). On the other hand, most students agreed that traditional lecture-based classrooms make it hard for them to talk to each other. Even though they believe that multimedia classrooms allow for more interaction than classes that are solely based on lectures, they ever denied the benefits of traditional classrooms. Around 70% of the students believe a mixture of lectures and multimedia is the best way to learn.

Besides, around 32 out of 50 students answered that they believe multimedia classrooms make their language learning experience more interesting (see Figure 4).

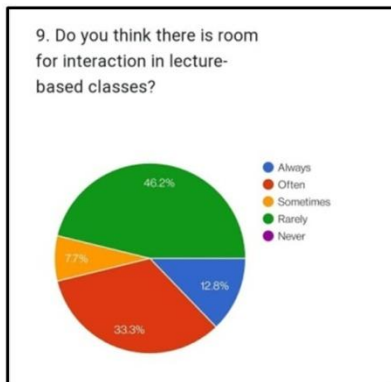


Figure 2. Students' Response Regarding Lecture Based Classroom

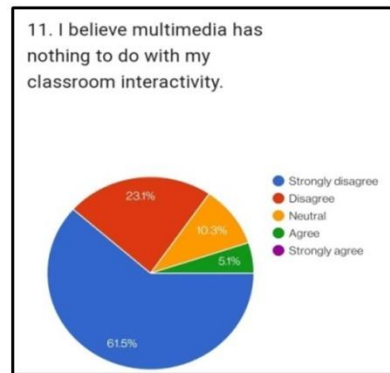


Figure 3. Students' Response Regarding Interaction in Multimedia Classroom

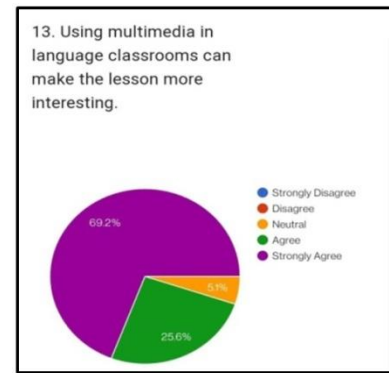


Figure 4. Students' Response Regarding Lessons Taught Using Multimedia

After their response, nine students were called in for a focus group discussion. Most of the students responded in favor of multimedia classrooms when they were asked. Even though students ranged from multiple departments, they all preferred to have multimedia-infused language classrooms as they all took fundamental English courses in their first year of undergraduate. The following questions were asked to facilitate the focus group discussion:

1. How does multimedia help in mastering English for your undergraduate-level study?
2. To what extent is multimedia used in your language classroom?
3. Does it improve your overall learning experience compared to solely lecture-based classes?
4. What are some benefits of multimedia in the language classroom?
5. Do you think multimedia in your language courses affect in-class interaction and participation?

To answer the first question, most participants focused on a key aspect of language learning: losing motivation after a while. All participants had received 12 years of basic education before joining the undergraduate program. As a result, because their majors were engineering, law, or pharmacy, many expressed their skepticism about taking additional language courses. "When I was given a noncredit English course, I almost decided to take readmission as I felt I was wasting my time there. After a week or two, I realized that things I had learned could be taught better. In my school, teachers never used multimedia to deliver or facilitate lectures," stated Ipshta. Another student Labonno who is doing her undergraduate in a renowned public university stated that it was so much easier when my teacher showed us a courtroom picture and discussed necessary vocabulary rather than just handing out a list of vocabulary to the students. Having a visual in front of me helped me remember the words almost immediately.

Two students, Akash and Jerin (pseudonyms), mentioned that their performance improved when they could give presentations using PowerPoint slides. Even though they had nothing written on their slides, they still felt confident having a visual presentation. They also added that the multimedia aid took some attention away from them, which benefits them greatly. This may also be considered from the teacher's perspective. When a teacher is solely responsible for giving a lecture for an eighty-minute class, it is challenging for the teacher and the students, as it only allows them to be receptive and not productive, which can be very monotonous. As stated by Mayer (2001) stated, students are not empty vessels ready to be filled with information. They need to be allowed to use other channels to process the information.

Similarly, Asif, a first-year CSE student, mentioned that "it is not like I hate lecture-based classes, but some courses require audiovisual aid. In my ENG101 course, my faculty showed me diagrams of brainstorming and outlining that helped me remember the components I need to incorporate in my outline".

According to Paivio (1986), basic comprehension and reasoning processes are reflected in mental representation. When information is processed through multiple sensory channels, such as hearing, seeing, and touching, the ability to make sense of what has been seen and heard, or the mental image of the outside world, grows. This proves that Asif better grasped his course content as it involved his multiple sensory channels. The visual aid facilitated by the lecture allowed him to remember the information using multiple channels.

Another student, Farah, pointed out that audiovisual materials can greatly enhance the schema they need in their creative writing lesson. For example, she mentioned a short film their teacher played before they were instructed to write their understanding of that particular video. All students unanimously and unintentionally identified the same concept. She believes that showing the short film made the concept of "empathy" clearer, and it would not have been possible without the help of the video. Similarly, empirical studies have found that sensory curiosity can be induced by changes in light, sound, or other sensory stimuli, for example, through multimedia like videos, music, or audio (Liu et al., 2009). Cognitive curiosity among students can easily be generated by telling a simple short story, whereas triggering sensory curiosity might require the help of multimedia equipment in class.

Students were asked if the inclusion of multimedia affected their in-class interaction with peers and teachers. All students instantly agreed and stated that it facilitated their discussion greatly. In their Fundamental English course, teachers often collected responses using Mentimeter, triggering some interesting discussion among peers and the teacher.

"My teacher used Mentimeter to generate topics for one of our journal tasks. Students came up with topics like dystopian novels, Marlon Brando, or Jeff Dahmer, which are fairly new to me. Upon starting the discussion, I got to know about many people and ideas, as well as share my idea of writing a blog with my peers" said Esha. Based on this answer, they were asked if the room for interaction is less in classes that offer lectures only. Students' responses were remarkable, as they stated that most lecture classes do not require us to participate in a discussion, and if at any point they lose focus due to any external factor, it is so hard to get back on track. Besides, some teachers even find it distracting when they are giving lectures, and students interact with each other, let alone start a discussion. In a multimedia-induced lecture, teachers mostly elicit responses from the students using multisensory channels, allowing them to develop their critical thinking skills.

Ahnaf, a first-year pharmacy student, focused on an exciting point. He said that even if the topic was somewhat less interesting, he did not feel bored as there were a lot of interactive tasks followed by audio-visual inputs in which he could participate even without being actively involved. This proves Mayers' third finding, which states that combining words and pictures into information that makes sense can be stored in long-term memory. As mentioned by Ahnaf, even though he was not actively participating in the lecture, he still got some of the information as it involved more than one medium in delivering the information.

Another student, Rakib, while discussing the regular lecture-based classes, mentioned that it is interesting how just incorporating a single multimedia element, e.g., a short audio track or a video, can very easily and without much effort initiate discussion. These small in-class peer discussions also helped me improve my listening skill. While our teachers focused on the formal aspect of listening, in-class discussions in English initiated with the use of multimedia helped my listening and immediately comprehending the meaning and responding to such a great level.

One challenge that most students identified is that they started to rely too much on multimedia equipment and often forgot the existence of booklets and copies. However, this case is not limited to multimedia-based EFL classrooms only, as in other courses as well; they rely heavily on taking photographs of the instruction written on the board or taking notes on their phones rather than in their copies.

Last but not least, all participants identified that the shift in multimedia classrooms is more than inevitable nowadays, as they were exposed to online learning for a longer during the pandemic. This habit enabled them to learn, understand, interact, and perform better with the help of multimedia devices both in the classroom and at home.

## VII. CONCLUSION

To conclude, it can be said that multimedia has an inevitable effect on student interaction and participation. Students feel enthusiastic about attending classes with lectures interwoven with a multimedia element that allows them to process the information better and faster. As already shown here, moving the focus from a traditional classroom environment to a multimedia-aided one requires a different way of thinking about classroom dynamics and the roles of teachers as well as learners. Successfully incorporating multimedia into language content to make the lesson even more effective requires a certain level of digital literacy from teachers and students. Since this study is limited to only students' perspectives on the effectiveness of multimedia in language classrooms to boost their participation and interaction, further studies can be conducted by collecting teachers' feedback on multimedia classrooms and whether they feel it positively facilitates their lectures. In response to the research questions asked at the start, more than half of the students said they felt more at ease when lectures included multimedia content. As a result of a better understanding of the content, they also perform better in the long run. Besides, students mentioned that multimedia-integrated classroom discussions allowed them to have more fruitful interactions with peers. Incorporating multimedia into lectures gives learners more opportunities to participate and perform, resulting in a faster learning rate. Gilakjani (2012) says, "Multimedia that works well for learning and teaching does not just use different media together. Instead, it combines media in a way that takes advantage of the strengths of each medium and makes the learning and teaching experiences longer".

## APPENDIX

**Survey Questionnaire**

The survey should take no more than 10 minutes of your time. Your participation is voluntary and you may refuse to participate or leave the survey at any time. Any information you provide will be kept strictly confidential and used only for statistical analysis.

Please provide the following information.

**Personal Information**

Email:

Name of your institution:

Class/year/semester:

Gender:

-Male

-Female

Name of your institution:

1. Do you have multimedia in your classroom?

-Yes

-No (If the answer is "no" then please skip question no 2)

2. What are the available technologies in your classroom? (You can choose more than one option)

-Over Head Projector (OHP)

-Projector

-Router

-Electronic Board

-Sound system

-Laptop/Computer

-Other

3. Do you have lecture-based classes that do not include multimedia??

-Yes

-No

4. Which one of the following do you think is more suitable to ensure an interactive language learning environment?

-Lecture-based classes

-Multimedia-based classes

-Mixture of both lecture and multimedia content

5. Are you allowed to use the available multimedia equipment in your classroom?

-yes

-no

6. Do you think access to that equipment can cause distraction in the classroom?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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7. How often do your teachers use multimedia in English courses?

Always	Often	Sometimes	Rarely	Never
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8. Do you enjoy solely lecture-based classes?

Always	Often	Sometimes	Rarely	Never
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9. Do you think there is room for interaction in lecture-based classes?

Always	Often	Sometimes	Rarely	Never
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10. I prefer classes that integrate both multimedia and lecture.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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11. I believe multimedia has nothing to do with my classroom interactivity.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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12. Using technology can improve the classroom experience.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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13. Do you think using multimedia in language classrooms can make the lesson more interesting?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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14. Do you think using visual aids like pictures, videos, diagrams and charts helps you learn better?

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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15. Would you like to add any problems that you may have faced regarding the availability/unavailability of multimedia?

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