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The Effectiveness of Nonverbal Communication in Virtual Learning Environment

Nurauni Najwa Mohamad Daus, Wan Nor Hidayah Wan Afandi[1*]

*Corresponding Author: wnhidayah@uptm.edu.my

Keywords

Nonverbal Communication, Virtual Learning, Students' Understanding, Students' Engagement, Students' Motivation

Abstract

Concerns regarding students' capacity to comprehend course material completely, engage in conversations, and maintain motivation throughout their learning process are raised by the absence of good nonverbal communication in virtual learning environment. As such, understanding the effectiveness of nonverbal gestures displayed by teachers of educators in virtual learning environment. This study is meant to understanding of the impact of effective nonverbal communication on students' understanding, engagement and motivation when classes are conducted via online. Focusing on public university students, this study has gathered responses from Science Marine students of Universiti Malaysia Terengganu. Based on the responses from 385 students, it is found that there is a positive relationship among the effectiveness of nonverbal communication, students' understanding, engagement and motivation. Students understand the lesson better when the educators use nonverbal gestures to facilitate the delivery of lessons. They also feel motivated to study and to participate when teachers display expressive behaviors. The findings shows that teachers are educators must learn and understand the appropriate gestures to display and how to ensure it is delivered through online platforms.

1. Introduction

The change from classrooms to virtual learning environments (VLEs) has changed the face of education by giving teachers and students more accessible and flexible learning options. But even if VLEs are convenient, there are special communication problems with them. According to Gapbodhitaru (2021), nonverbal clues including body language, gestures, and facial expressions are essential for improving comprehension, motivation, and participation in traditional classroom settings. These indications may be limited or absent in virtual environments, which could affect how well students learn and teach. It is often acknowledged that effective contact requires nonverbal communication.

Nonverbal behaviors facilitate the expression of emotions, the reinforcement of spoken messages, and the development of rapport between educators and learners (Mirea, 2023). In a face-to-face context, students depend on teachers' visual clues to understand difficult ideas, assess their level of involvement, and stay motivated. However, because of things like limited camera use, low-quality video, and limited interaction, nonverbal

communication is frequently less successful in virtual environments when communication is mediated through screens. Studying how nonverbal communication impacts students' comprehension of the material, motivation, and engagement in virtual learning settings is crucial in light of these difficulties. Thus, the purpose of this study is to examine the relationship among the effectiveness of nonverbal communication, students' understanding, students' engagement and students' motivation in virtual learning environment

2. Literature Review

Nonverbal communication is even more important in virtual learning environments because there is less opportunity for face-to-face connection. Students' interpretation and retention of knowledge are greatly influenced by body language, facial emotions, and gestures. When these components are missing from online learning environments, student engagement and overall learning efficacy may suffer (Mirea, 2023). Teachers who use expressive hand and facial gestures during online lectures help students better understand difficult subjects (Frontiers in Psychology, 2021). Students who viewed lecturers with strong non-verbal cues outperformed those who only got information via text or voice on evaluations (Gapbodhitaru, 2021). These implies that using nonverbal clues in virtual teaching techniques can boost knowledge retention and the learning process.

Besides, nonverbal communication builds trust and a sense of connection between students and teachers (Mirea, 2023). A more engaging and encouraging learning environment is produced by teachers who use webcams to maintain eye contact, make expressive facial expressions, and make deliberate hand movements. The overall efficacy of virtual learning is improved, and emotions of loneliness are lessened because to this enhanced engagement. Nonverbal clues in virtual learning environments are also beneficial for peer-to-peer communication. Students use hand gestures, head nods, and facial expressions to convey agreement, uncertainty, or feedback during group discussions and cooperative projects (Frontiers in Psychology, 2021). In text-based conversations, the absence of these cues may result in misunderstandings and decreased participation. In conclusion, nonverbal communication in virtual learning is a crucial component that has a big impact on students' motivation, engagement, and understanding. Although nonverbal connection is hampered by the digital nature of virtual classrooms, research indicates that institutions and teachers can use techniques to improve the efficacy of nonverbal communication.

Understanding of content is a critical component of effective learning, and non-verbal communication plays a significant role in reinforcing comprehension. Non-verbal cues, such as facial expressions, gestures, and tone of voice, add layers of meaning that help students grasp complex concepts more effectively (Mirea, 2023). In virtual learning environments, where students may struggle with the lack of in-person interactions, non-verbal communication serves as an essential tool to bridge gaps in understanding. Research indicates that students who are exposed to non-verbal cues during online instruction exhibit higher retention rates and better academic performance (Frontiers in Psychology, 2021). For example, instructors who use gestures to illustrate abstract ideas—such as pointing, signaling emphasis, or mimicking real-world actions—help students visualize concepts more clearly. Additionally, facial expressions can indicate enthusiasm, concern, or clarification, which enhances students' confidence in their comprehension of the material (Gapbodhitaru, 2021).

One study found that students who received instruction with a combination of verbal explanations and hand gestures showed a 20% improvement in comprehension compared to those who received verbal instruction alone (Mirea, 2023). This suggests that the integration of non-verbal cues in virtual learning environments can significantly enhance students' ability to understand and retain complex information. Furthermore, students reported feeling more engaged and connected when instructors maintained expressive body language during lectures (Frontiers in Psychology, 2021). However, virtual learning environments often limit the effectiveness of these non-verbal cues due to technological constraints (Mirea, 2023). Poor video quality, lack of camera usage by students and instructors, and minimal screen visibility all contribute to a reduction in the effectiveness of non-verbal communication. A study by Gapbodhitaru (2021) found that students in high-definition video lectures demonstrated higher comprehension scores than those in low-quality video settings, indicating that visual clarity is essential for effective non- verbal communication.

To address these issues, researchers suggest the use of interactive visual aids, pre-recorded instructional videos with enhanced non-verbal elements, and encouraging students to keep their cameras on to facilitate richer communication (Frontiers in Psychology, 2021). For example, incorporating digital whiteboards, animated gestures, and video demonstrations can help bridge the gap caused by limited face-to-face interaction in virtual classrooms (Mirea, 2023). These strategies help compensate for the reduced ability to convey meaning through traditional non-verbal communication. In conclusion, non-verbal communication is a powerful tool in virtual learning that enhances students' ability to understand and process content effectively. While challenges such as technological limitations and student reluctance to engage in visual interaction exist, research suggests that training educators in non-verbal communication strategies can help overcome these barriers (Frontiers in Psychology, 2021).

Student engagement is a key predictor of academic success, and non-verbal communication significantly influences how students interact with learning materials and instructors (Mirea, 2023). Engaged students are more likely to actively participate in discussions, complete assignments, and retain information. A study on student engagement in online courses found that instructors who frequently used non-verbal cues had students with higher

participation rates compared to those who relied solely on verbal instruction (Frontiers in Psychology, 2021). Non-verbal communication signals attentiveness and responsiveness, making students feel acknowledged and encouraging them to contribute more actively. For instance, instructors who nod in agreement or smile during discussions create an inviting atmosphere that fosters student involvement.

Another important factor is the role of body language in conveying enthusiasm and energy. Research suggests that when instructors display positive body language—such as using open gestures and animated facial expressions—students are more likely to remain focused and engaged in lessons (Mirea, 2023). In contrast, static and monotonous virtual presentations tend to result in lower student interaction and interest levels. Peer interaction also plays a significant role in student engagement in virtual learning environments. Non-verbal cues such as nodding, facial expressions, and hand gestures during online group discussions enhance collaboration and ensure that students feel heard and understood (Gapbodhitaru, 2021). Studies indicate that students are more likely to engage with their peers when they receive visual feedback, such as a smile or a nod, reinforcing positive communication dynamics in virtual settings (Frontiers in Psychology, 2021).

In conclusion, student engagement in virtual learning environments is highly influenced by non-verbal communication. Instructors who utilize expressive body language, encourage visual feedback, and leverage technology to enhance non-verbal cues can significantly improve student interaction and participation.

Motivation is a key factor in student success. When students feel supported and encouraged, they are more likely to stay focused, complete assignments, and actively participate in discussions. Research by Deci and Ryan (1985) suggests that a positive learning environment, including effective non-verbal communication, can enhance intrinsic motivation the internal drive to learn for personal satisfaction rather than external rewards. Non-verbal communication plays a crucial role in creating this positive environment. Instructors who use encouraging gestures, such as nodding, smiling, or maintaining an open posture, can make students feel more confident and valued (Patterson, 2019). When students feel acknowledged, they are more likely to stay motivated and engaged with the course material.

Motivation in virtual learning environments can often decline due to feelings of disconnection, lack of interaction, and passive engagement. However, research has demonstrated that instructors who utilize non-verbal cues effectively can enhance student motivation and promote a more immersive learning experience (Mirea, 2023). One study found that students are more likely to remain motivated when instructors use enthusiastic facial expressions, encouraging gestures, and direct eye contact through video conferencing platforms (Gapbodhitaru, 2021). This creates a sense of presence, making students feel as though they are part of an interactive and supportive learning environment. Additionally, non-verbal cues such as nodding and smiling reinforce positive feedback, which can boost student confidence and motivation to participate in discussions.

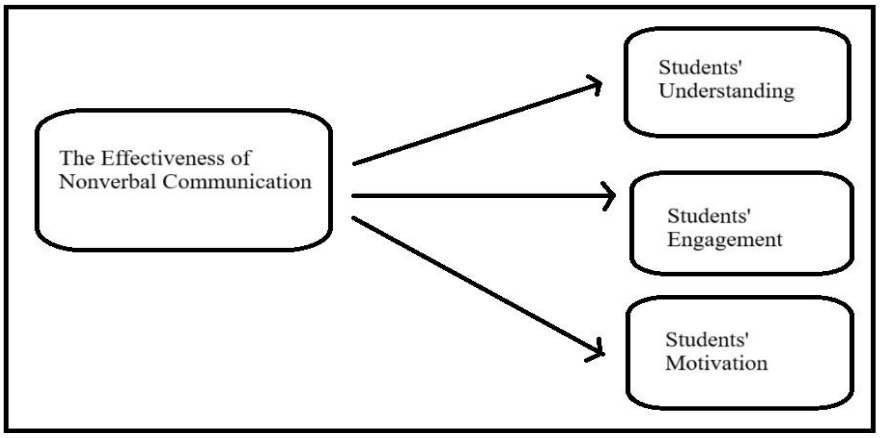

Fig 1: Research Framework

3. Methodology

This research employs a quantitative research method, utilizing a survey questionnaire to collect data. This approach is appropriate as the study aims to measure and analyze the relationships between non-verbal communication cues and student engagement and motivation in virtual learning environments. The questionnaire is structured into four distinct parts (A-E), each designed to gather quantifiable data on specific aspects of the research topic.

Part A focuses on collecting demographic information about the respondents, providing context for

interpreting responses in subsequent sections. While the image you provided mentions gender, age, and educational attainment, you may want to specify which background information is relevant to your non-verbal communication study. Parts B through E utilize a 5-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree) to gauge respondents' opinions and perceptions related to non-verbal cues. Part B explores the perceived effectiveness of non-verbal communication (facial expressions, gestures, body language) in virtual learning environments. Part C examines the impact of nonverbal behaviors on students' understanding while Part D assesses the relationship between non-verbal communication and student engagement in virtual learning. Part E examines the influence of non-verbal cues on student motivation within the virtual learning context.

This study focuses specifically on Science Marine students from Universiti Malaysia Terengganu (UMT), recognizing that their experiences and perceptions within the virtual learning environment may be unique due to the specialized nature of their field of study. The Science Marine Faculty at UMT offers programs in areas such as marine biology, aquaculture, and oceanography. These programs often involve fieldwork components, data analysis, and remote collaboration, all of which may be impacted by the effectiveness of non-verbal communication in virtual learning. Access to participants was facilitated through collaboration with the UMT student affairs office. Permission was sought to distribute the online questionnaire through university- managed email lists and announcements on the university's student portal. Social media groups frequented by UMT students were utilized to announce the study and provide a link to the online questionnaire.

This research employs simple random sampling to select participants from the 11,230 undergraduate students enrolled in bachelor's programs. Simple random sampling ensures that each of these students has an equal and independent chance of being selected, minimizing potential bias and increasing the generalizability of the findings to this specific undergraduate population. The sample size for this study is 385 students. This number is based on recommendations by Israel (2012) for determining appropriate sample sizes in research activities involving large populations.

4. Result and Discussion

The reliability of the instruments employed in this study was examined using Cronbach's Alpha values, which are a measure of the instruments' internal consistency. Three variables make up this study: students' engagement, students' motivation and the effectiveness of nonverbal communication.

Table 1 shows the reliability value for the Effectiveness of Nonverbal Communication (α =.885), Students' Understanding (α =.889), Students' Engagement (α =.894) and Students' Motivation (α =.907).

Table 1 : Reliability Values of Studied Variables

Variables	Items	α
The Effectiveness of Nonverbal Communication	15	885
Students' Understanding	14	889
Students' Engagement	15	894
Students' Motivation	15	907

Table 2 displays the respondents' demographics, including age, gender, and level of education. 47.8% of the total respondents are men (184) and 52.2% are women (201). A total of 178 (46.2%) of the respondents are in the 18–24 age range, followed by 114 (29.5%) in the 25–29 age range and 93 (24.2%) in the 30–35 age range.

Table 2: Respondents' Demographic Profile

Demography Factors		*n*	*%*
Gender	*Male*	*184*	*47.8*
	Female	*201*	*52.2*
Age	*18 – 24 years old*	*178*	*46.2*
	25 – 29 years old	*114*	*29.5*
	30 – 35 years old	*93*	*24.2*

The main objective of the study is to determine the relationship between these two variables, this section will address the differences between the comprehension of learning content and the efficacy of nonverbal

communication in virtual learning settings. This showed a moderate correlation between the comprehension of learning content and the efficacy of nonverbal communication in virtual learning settings, with a significant value of (r =.857, p > 0.01). Since the findings in Table 3 demonstrated that these two factors will have an impact on one another, the hypothesis is accepted.

Table 3: The Relationship between The Effectiveness of Nonverbal Communication and Students' Understanding

Students' Understanding	The Effectiveness of Nonverbal Communication
r	.857**
n	385
p	.000

Since the second objective is to look into the relationship between student engagement and the efficacy of nonverbal communication in virtual learning settings, this part will address the hypothesis between the two. This demonstrated a moderate correlation between student engagement and the efficacy of nonverbal communication in virtual learning environments, with a significant value of (r =.880, p > 0.01). Based on the findings in Table 4, there is a relationship between these two characteristics. The hypothesis is accepted.

Table 4: The Relationship between The Effectiveness of Nonverbal Communication and Students' Engagement

Students' Understanding	The Effectiveness of Nonverbal Communication
r	.880**
n	385
p	.000

The third objective of the study is to examine the hypothesis that connects student motivation and the efficacy of nonverbal communication in virtual learning settings. With a significant value of (r =.865, p > 0.01), there is a moderate correlation between student motivation and the efficacy of nonverbal communication in virtual learning settings. The findings in Table 5, which demonstrated a link between these two parameters, support the hypothesis.

Table 5 : The Relationship between The Effectiveness of Nonverbal Communication and Students' Motivation

Students' Understanding	The Effectiveness of Nonverbal Communication
r	.865**
n	385
p	.000

5. Conclusion

The results of this study demonstrate the significance of nonverbal communication in online education. Pupils who observe their teachers communicating well nonverbally are more likely to retain the material, feel more motivated, and comprehend it better.

The study discovered a moderate relationship between students' comprehension of the learning material and nonverbal communication (r =.857, p < 0.01). Students are better able to understand complex concepts when teachers skilfully employ body language, hand gestures, and facial expressions. Lessons become more interesting and less confusing thanks to these nonverbal clues. Additionally, previous research indicates that nonverbal communication aids in students' assimilation and retention of knowledge. Students pay greater attention and find it simpler to follow the lesson when teachers are enthusiastic and make expressive gestures. This implies that students' academic performance can be enhanced by the use of nonverbal communication in virtual learning.

The study discovered a substantial association between student engagement and nonverbal communication (r =.880, p < 0.01). When teachers emphasize important themes with gestures, facial expressions, and eye contact, students are more likely to participate in virtual classrooms. This confirms earlier findings that nonverbal immediacy increases students' sense of connection to their teachers and enhances the participatory nature of

online learning. Effective use of nonverbal communication by teachers inspires students to participate in conversations and ask questions. According to the results, students were more likely to remain attentive and involved in virtual classrooms if they had greater experiences with nonverbal communication. This implies that in order to foster a more stimulating online learning environment, educators should be conscious of their facial expressions and body language.

The study found a substantial correlation between student motivation and nonverbal communication ($r = .865$, $p < 0.01$). Students are more motivated to learn when teachers demonstrate their passion through gestures, body language, and facial emotions. The Self- Determination Theory, which holds that students become more motivated when they feel involved and connected, is supported by this research. According to the findings, a helpful and engaging learning environment helps motivate students to maintain their concentration, finish their assignments, and engage fully. Students have a good attitude about learning and feel more motivated to achieve when teachers employ nonverbal clues successfully.

These findings have significant ramifications for virtual learning institutions, educators, and legislators. Teachers have a significant influence on how students learn, and this study emphasizes how important it is for them to incorporate nonverbal communication techniques into their lessons. Simple methods like keeping eye contact, making hand gestures, and utilizing facial expressions can all contribute to the development of a more dynamic and captivating virtual learning environment. Training programs ought to be implemented to help teachers acquire these abilities and make sure they can interact with pupils in ways other than verbal explanations. Institutions should also spend more money on improved video conferencing equipment that makes it possible to see instructors' nonverbal clues clearly, which will improve the learning process even more.

These discoveries should also be noted by policymakers, who should think about enacting laws that stress the value of nonverbal communication in online learning. Including instruction in nonverbal communication in teacher certification programs is one way to guarantee that aspiring teachers have the abilities necessary to successfully interact with children. Institutions ought to provide teachers with continual professional development opportunities so they can improve their nonverbal communication skills. Policymakers can help create a more dynamic and productive virtual learning environment that encourages student motivation and engagement by giving priority to these tactics.

Institutions should also take steps to encourage the use of nonverbal communication in online learning and recognize its significance. Encouraging students to turn on their cameras during virtual classrooms can help create a more interactive and engaging atmosphere that will help professors and students better interpret non-verbal cues. To ensure that instructors have the tools to incorporate nonverbal communication into their class plans, institutions should provide support in the form of training and materials. By implementing these changes, virtual learning environments can become more engaging, enhancing communication and fortifying the relationships between educators and learners.

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