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Factors that influence students to turn on their cameras in synchronous classes

Factores que influyen a los estudiantes a encender sus cámaras en clases síncronas

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Abstract


The purpose of the present study was to explore how students use webcams in a synchronous virtual learning environment. This study focuses on self-presentation and the multiple factors influencing students' decisions about turning their cameras either on or off while engaging in online classes. A survey was conducted in order to gather information regarding students' use of webcams and their self-presentation strategies. This approach enables the collection of quantitative information about students' use and preferences of webcams in online learning environments. The results indicated that only 6% of students regularly turned on their cameras during virtual classes. This very low percentage indicates either a strong disinclination or a failure of capability to engage in visual aspects of learning. Some factors have been identified as affecting students' decisions to use webcams. Many students say that their learning space at home is not conducive to using webcams. Only 7% of the students have a specific online learning space, and that might be the reason why they are reluctant to turn on their cameras. An astonishing 85% of these students admitted to sometimes or always wearing casual clothes, like pajamas or sweatpants, while attending classes online—a habit that could have impacts on self-presentation and camera readiness. Generally, the research demonstrates that students find the management of their online presence difficult. It may be due to ignorance of its effect or technical limitations, besides an assumption that self-presentation is inappropriate in the setting of an online classroom.

Keywords: virtual environment, cameras off, synchronous behavior

Resumen

El objetivo de esta investigación era analizar cómo utilizan los estudiantes las webcams dentro de un entorno de aprendizaje digital en tiempo real. El presente estudio se centraría en el autoajuste y en los factores que influyen en la decisión de los estudiantes de tener las webcams encendidas o apagadas durante las sesiones de clase virtuales. Se llevó a cabo una encuesta para conocer la utilización de webcams y las estrategias de autopresentación que los estudiantes aplican. Esta herramienta es útil para que los investigadores puedan recolectar datos cuantitativos sobre comportamientos y preferencias del estudiante en cuanto a la cámara web y contextos de aprendizajes virtuales. Los resultados mostraron que el 6% de los estudiantes encendía siempre sus cámaras durante los encuentros en línea. Un porcentaje tan reducido sugiere una considerable falta de disposición o una incapacidad para involucrarse en el aprendizaje visual. Se han señalado varios factores que influyen en la decisión de los estudiantes de utilizar cámaras web. Muchos estudiantes afirman que su entorno educativo no fomenta el uso de cámaras web. Sólo el 7% de los estudiantes tiene un área específica para el aprendizaje en línea, lo que puede aclarar su falta de disposición a encender las cámaras. 85% de los estudiantes admitió llevar ropa informal, como pijamas o ropa casual, lo que puede afectar a la imagen que tienen de sí mismos y repercutir potencialmente en su disposición a aparecer ante la cámara. Según la investigación, los estudiantes suelen ser incapaces de gestionar adecuadamente sus experiencias en entornos digitales. Esto puede deberse a una falta de conocimiento sobre las implicaciones o incluso a limitaciones técnicas, pero también puede deberse a la percepción de que la autopresentación parece inapropiada en un contexto educativo en línea.

Palabras clave: entornos virtuales, cámaras apagadas, comportamiento síncrono

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INTRODUCTION

The transition towards remote and hybrid educational frameworks in the past few years has elicited a lot of discussion with regard to student involvement and engagement. A very relevant dimension of this conversation is the use of video cameras during synchronous instructional sessions.

Several factors that influence students' decisions to activate their cameras have been outlined through research, including technological, psychological, and social ones. The online learning model has become one of the most common ways to pursue a degree; people who, for different reasons, never finished their studies, as well as those who need to work to maintain their families, are the main causes of why more and more students are using this modality to obtain a degree. However, there is still a large number of students who turn off their cameras in synchronized classes, behavior that could be influenced by many aspects, as pointed out by Jian et al. According to (2021), some students will be more comfortable participating without video, as it allows for participation without the added stress that comes from visual presence. One will note that this anonymity can help to reduce nervousness and aid in increasing participation by certain students. Preparedness in the domain of technology—students' access to reliable devices and stable internet—is a must for full participation in video-based learning environments (Huang & Li, 2022).

It can dramatically impact a student's willingness to turn on their camera due to the fact that a lack of resources will likely lead to feelings of frustration or isolation (Gonzalez et al., 2021). Another major issue—of course—is the digital divide: students from different socio-economic backgrounds may face challenges that hinder their ability to engage with their environment in a way that is fully engaging (Hargis & Sutherland, 2020).

Psychological factors, including self-efficacy and comfort levels, might also play a significant role in using cameras. Students may feel self-conscious about their physical appearance or the setting of their involvement and find it hard to turn on their cameras (Baker et al., 2023). Much research outlines that a supportive online classroom environment can reduce this problem, hence increase student participation (Gonzalez et al., 2021).

It is a question of dynamics in social interaction, more so peer influence and perceived norms that go with classroom engagement. Visible peers who have cameras on provide a sense of belonging and responsibility, which may encourage others to do likewise (Lee & Martin, 2023). While, on the other hand, an environment of disengagement might deter people from switching on their cameras, meaning that it would further need defining clear expectations regarding participation (Perkins et al., 2024). Understanding these factors is important for teachers to enhance student engagement in online learning environments.

Educators can encourage more students to turn on their cameras by mitigating technological constraints, promoting psychological safety, and enhancing a positive social environment during synchronous instruction in order to improve the holistic learning experience. In this digital education era, students' presence in synchronous online classes has been one of the hottest topics within the field of education. It is more than a technical decision to turn cameras on; it is a complex interplay of psychological, social, and contextual factors. With teachers and schools trying to increase presence and build community in virtual classrooms, understanding these influencing factors becomes even more important. Research indicates that many elements come into play when students decide to participate visually. One study by Gunter et al. (2021) suggests that students' perceptions of instructor presence have a strong bearing on their likelihood to turn their cameras on. When instructors exude warmth and responsiveness, students feel more connected and thus more inclined to participate fully. Not to be discounted is the effect of peer dynamics.

Hall et al. (2023) observed, in their study, that when students feel a supportive atmosphere with peers, they are more likely to turn their cameras on. This shows how important it is to create a collaborative, friendly atmosphere in any virtual classroom.

Moreover, the use of cameras is amazingly affected by external factors, such as access to technology and the home environment. Research by Zheng et al. (2022) has shown that students from different socio-economic backgrounds face different challenges in availing technology and dealing with home distractions that may affect their ability or wish to participate visually. These findings underline the necessity of addressing issues of equity if an inclusive learning space is to be created.

In addition, intrinsic motivators, like personal confidence and the need for responsibility, play a huge role in defining students' behaviors. One study conducted by Lee and Kim (2024) found that self-efficacy is an influential factor in the use of cameras; hence, students who feel strongly about their ability within the online learning setting are more likely to engage with others via video. Therefore, a setting that fosters self-assurance and encourages students will be instrumental in improving engagement for these learners.

In other words, factors influencing students' decisions to turn on their cameras during synchronous class sessions are rather complex, embracing psychological, social, and contextual elements. Knowing these influences can help educators better design online learning environments in ways that increase visibility and engagement for better learning experiences among all students.

LITERATURE REVIEW

Online education has picked up in momentum over the recent years, especially with the COVID-19 pandemic that has brought about new insights into student interaction in virtual learning environments.

One of the critical dimensions of this participation is the use of cameras in live classroom settings. Despite many educational institutions encouraging students to turn on their cameras for increased engagement and participation, students generally tend to be quite apprehensive about it. This paper performs a literature review of the diverse factors that influence students' decisions about using cameras in classrooms, which are psychological, social, and contextual in nature, as identified through research between 2018 and 2024.

Psychological Factors

Self-Efficacy

It is defined as an individual's conviction in their ability to execute particular tasks, has been recognized as a significant determinant affecting the utilization of cameras in digital environments.

Bandura (1997) posits that higher self-efficacy leads to higher motivation and engagement. In the context of online learning, Lee and Kim (2024) discovered that students with greater self-efficacy are more likely to turn on their cameras because they feel more competent in engaging with both their peers and instructors; this judgment about themselves is instrumental in determining the level of comfort in online environments.

Anxiety and Self-Presentation

On the other hand, anxiety related to self-presentation can significantly impede camera use. Yoon et al. (2022) conducted a study where many students reported heightened levels of apprehension about appearance and possible judgment by their peers when cameras are on. Such anxiety is amplified in

virtual environments where non-verbal cues are greatly diminished, making one feel exposed. Students will therefore instinctively turn off their cameras to regain comfort instead of contributing.

Societal Influences

Peer Dynamics

The social context in which educational activities take place has a very strong influence on students' willingness to activate their cameras. Dynamics within peers—characterized by interaction and relationships among students—greatly help create an enabling environment. According to Hall et al. (2023), when students perceive their peers as being supportive and encouraging, they show a starkly higher tendency to turn on their cameras. This evidence might suggest that a feeling of belonging and solidarity within the online classroom might enhance participation among students.

Instructor Influence

Another crucial social influence on the use of cameras is instructor behavior

Gunter et al. (2021) note that a warm, enthusiastic, and attentive instructor can make the environment for the student much more friendly. Indeed, their findings indicate that a strong instructor presence is positively linked to students' chances of turning on their cameras. Moreover, Huang and Zhang (2020) discovered that instructor immediacy—which refers to a combination of factors such as maintaining eye contact and using an energetic vocal tone—can help increase student engagement and comfort in switching on their cameras.

Contextual Factors

Technical Access

Access to technology is one important contextual factor which shapes students' use of cameras. Zheng et al. (2022) indicated that learners from different socio-economic backgrounds usually face many challenges, such as unstable internet access and the absence of appropriate devices, which hinder their ability to fully participate in online courses. This inequality is a serious equity problem within the learning environment, as students without sufficient resources are likely to be at a disadvantage and therefore contribute less in terms of camera participation.

Residential Environments

Also important, the home environment plays a major role in the willingness of students to turn on their cameras

O'Donnell and Tompkins (2023) conducted a study showing positive influences of a distraction-free and supportive home environment on the use of cameras. Students in cluttered or distracting environments often feel self-conscious about showing their surroundings, thus making them more likely to turn their cameras off. The psychological comfort obtained from a supportive home learning environment can substantially raise students' willingness to be visually present in online classrooms.

Implications for Educators

Given the countless factors influencing camera usage, educators must implement strategies to foster a more inclusive and engaging online learning environment.

Building a Supportive Community

Fostering a strong sense of community is important. Instructors can foster this by incorporating icebreakers and collaborative activities that encourage interaction and build connections among students. Another way is to set norms for engagement and create opportunities for peer interaction; this may help students feel more connected, which in turn may lead to increased camera usage.

Addressing Anxiety and Fostering Confidence

Knowing the barriers of psychological self-presentation and anxiety of students in creating engagement during video interactions is important. The instructor may provide resources to help students with anxiety by holding workshops on self-presentation skills and strategies in building self-confidence. Also, offering anonymity during the first stages of online classes will help the students in getting used to that before motivating them to turn on their cameras.

Guaranteeing Fairness in Accessibility

Finally, institutional resources should be used to provide equitable access to technology, not only in terms of lending devices or subsidies for internet access but also in terms of creating spaces for online learning at community centers. Removing such contextual challenges will encourage all students to engage in the class.

Gender Differences

The research conducted outlines significant gender differences in self-compassion, self-esteem, and discomfort levels. Men reported higher levels of self-compassion, self-esteem, and body esteem and lower levels of discomfort with webcam use than their female peers. This would suggest that gender may be an extremely important factor when considering how students engage in online learning spaces.

METHODOLOGY

This research used descriptive correlational quantitative design, led to the development of the research question: ¿What are the factors influencing students' use of cameras in synchronous online classes?

Specific keywords were selected in order to increase the specificity of data collection and expand the literature review. Another tool used was a survey through a questionnaire of eighteen questions, closed questions based on the Likert scale, focusing on gender, age, and technological issues carried out on a sample population of 323 students, taken from a population of over one thousand individuals at Milagro State University. The participants were students in the Pedagogy of National and Foreign Languages program. All respondents are enrolled in online career courses.

DISCUSSION AND FINDINGS

The data from the survey shows interesting trends regarding students' willingness to turn on their cameras during synchronous online activities. With a sample size dominated by females (73%) in comparison to males (24%), such findings highlight important aspects of camera engagement within virtual classroom environments.

Frequency of Camera Use

According to the results, a large group of students—38%—indicated that they "rarely" turn on their cameras. Meanwhile, 10% said they "never" do.

On the other hand, a smaller percentage, about 52%, said that they sometimes turn their cameras on.

This suggests an intervening reluctance to engage visually, which could be linked to various psychological and situational factors. The high rate of non-participation could also be indicative of broader trends in online learning, where students may feel more at ease when not burdened with the pressures of being seen.

Effect of Educator Engagement

The second question explored whether students would be more likely to turn on their cameras if instructors incorporated fun into their teaching time. Results were enlightening: 28% of respondents said they were "very likely" to turn on their cameras, while 28.8% said they were "likely." Interestingly, 22.4% of the respondents remained neutral.

This highlights the fact that participatory and interactive pedagogical strategies can have a strong correlation with students' tendency to participate visually. The underlying connection between fun activities and a high rate of camera usage implies that teachers who revisit and update their teaching methods can increase student participation and build better relationships.

Motivational Incentives

The third question endeavored to discover potential rewards that could motivate students to activate their cameras. A high 61% of participants reported that the potential to earn participation points would motivate them to activate their cameras. This points out the importance of tangible incentives in motivating student behavior. Furthermore, 34% conceded that positive reinforcement from instructors could have a great impact, but this means that nurturing instructor-student relationships are very important in creating an atmosphere that encourages engagement. The above findings emphasize the need for educators to adopt motivational techniques that will not only increase participation but also instill a sense of responsibility and community within the online learning environment.

Barriers to Camera Use

The final question; taken from the most important; examined the most common reasons for the unwillingness to turn cameras on.

The most common barrier identified was technical issues (25%), followed by social discomfort (21%), privacy concerns (15%), and learner preferences (12%).

Technical difficulties constitute a notable obstacle, highlighting inequalities in students' access to dependable internet connectivity and technological resources, which can be especially acute for individuals from lower socio-economic backgrounds. Additionally, social unease and concerns regarding privacy intensify the situation, as they reveal underlying psychological impediments that may hinder participation. The implications of these findings indicate that tackling technical obstacles and cultivating a supportive, inclusive atmosphere are essential measures for enhancing camera usage frequencies.

Reasons to Avoid the Use of Cameras

Privacy Concerns: A number of students have expressed their concerns about showing their home environments to others. According to the research by Kauffman (2020), students want to keep their privacy and feel uncomfortable when their personal spaces are shown.

Comfort and Anonymity: Turning up without a visible video might make some of the students feel more at ease, as it puts less pressure on being visually present. A study conducted by Jiang et al. (2021)

suggested that this anonymity may reduce anxiety and even promote participation among other students.

Technical Challenges: Connectivity issues, a lack of devices, or poor internet bandwidth might impede students' opportunities to turn their cameras on. Indeed, a recent study by Castañeda and Rojas (2022) found that such technical limitations affected students' active engagement in online learning in a major way.

Distraction and Multitasking: Students are more likely to become distracted by multitasking when their cameras are off, leading to reduced levels of engagement. A study by Zheng et al. (2023) found that students often take advantage of this situation to focus their attention on other activities rather than on the instructional content being presented.

Instructor Interaction: How educators treat the use of cameras can influence student behavior. For example, a study by Nguyen (2023) found that if educators encourage the use of cameras without creating a safe space, students may fight against turning on their cameras because of the evaluation.

The survey results underscore the importance of understanding the demographic landscape of online learners. Given most respondents were females, educators should take care to be attuned to the unique needs and viewpoints of diverse populations of students.

That 38% of students "rarely" turn on their cameras, added to the 10% who "never" do, puts a large slice of this population in a position where they are uncomfortable or unable to participate visually. It thus places educators in a very challenging position to create a space that is psychologically safe (Hall et al., 2023).

Moreover, the strong correlation found between fun activities initiated by the instructor and increased use of cameras points out the vital role of pedagogies in motivating students. The very positive response to interactive teaching methods suggests that once students feel their classes are fun and interesting, they would be more likely to feel comfortable turning on their cameras. The findings are in line with educational theories underpinning active learning and student engagement and elicit a call for teachers to design more innovative and diverse pedagogical strategies (Gunter et al., 2021; Huang & Zhang, 2020).

Participation points and encouragement by instructors have been noted as the most important incentives toward the activation of cameras. The finding that 61% of the participants preferred participation points reflects a broader pattern in education motivation theory: extrinsic rewards can have significant effects on student participation (Lee & Kim, 2024). However, just providing the incentives may not be sufficient. Those kinds of incentives should be accompanied by a supportive classroom environment that encourages students to interact with each other and build connections.

The obstacles recognized, including technical challenges, social unease, privacy apprehensions, and individual inclinations, further complicate the dynamics of camera utilization.

Technical difficulties brought to light the underlying inequalities in access to technology, hence the need for educational institutions to address such imbalances so as to create an equitable educational environment (Zheng et al., 2022).

Social anxiety and fears about privacy bring up deeper psychological concerns that could be barriers to participation, so educators should focus on building trust and comfort in their online class (Yoon et al., 2022). To foster an environment that allows for more camera use, educators might consider the following:

Building a supportive community: The establishment of norms that denote openness and respect may help alleviate social discomfort. The arrangement of peer interactions and collaborative activities enhances the sense of belonging among the students (O'Donnell & Tompkins, 2023).

Engage in Activities: Incorporating fun and interactive elements can increase student interest and visible signs of participation substantially. It could include gamification, breakout discussions, and interactive polls (Hall et al., 2023).

The technical barriers: The institutions should work toward resource support to ensure that all students have access to reliable technology and the internet. This might include technical support, provision of devices, or even just common physical study spaces (Zheng et al., 2022).

Foster Open Communication: Facilitating avenues for students to articulate their apprehensions regarding the utilization of cameras can enable educators to comprehend the particular obstacles encountered by students. Such discourse may guide the implementation of focused interventions and assistance (Yoon et al., 2022).


CONCLUSIONS

The decision to turn cameras on during live online classes is a complex phenomenon by nature, influenced by numerous factors of psychological, social, and contextual origin. This research shows that while a great number of students report being willing to contribute visually when given engaging activities and adequate incentives, there are still considerable challenges that prevent them from doing so. In general, improvement in the use of cameras during synchronous online classes requires a holistic approach that puts into consideration complex dynamics influencing students' behavior. That way, educators are able to come up with online learning environments that are more effective and inclusive by considering drivers and barriers faced by the students. After all, creating a supportive and participative environment benefits not only individual students but also helps in raising the level of education altogether, which leads to a more vibrant and connected virtual learning community.

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