

Reasons and Impacts of Camera On and Off during Synchronous Online English Teaching and Learning: Insights from Thai EFL Context

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Abstract

Whether or not students should turn on their cameras during synchronous online learning is still a matter of debate. Empirical evidence is scarce, especially on specific subjects. More importantly, little is known about the impact on students' online learning outcomes. As a response, this study examined undergraduate students ($N = 314$) who had recently completed a 12-week academic term of fully synchronous online English classes at a university in Thailand. Framed by a mixed-method design, the research data involved a survey, a short essay, an online English course grade, and self-rated English proficiency. Descriptive statistics, exploratory factor analysis (EFA), t-tests, one-way ANOVA, bivariate correlation, linear regression, and theme-based analysis were used to analyze the data. The findings indicated that 1) EFL students avoided turning on their cameras during synchronous online lessons, 2) students' camera on/off actions were affected by classroom dynamics, classroom exhaustion and participation, physical appearance and background, unrelated physical activity, distracting behaviors, and technical issues, 3) gender and English proficiency had no effects on students' camera on/off actions, and 4) the statistical analysis results denied the detrimental effects of a camera on/off on students' online English learning outcomes.

Keywords: camera on or off, online learning, online teaching, English courses, learning outcomes

Introduction

Whether teachers should instruct students to turn on their video cameras during synchronous online learning or whether teachers should allow students to choose whether to turn their video cameras on/off has been a point of contention among educators lately, but it has not been resolved due to a lack of empirical evidence. Studies on this topic are still quite a few in the context of online English teaching and learning at the university level. Prior to the emergence of massive synchronous online teaching and learning because of the COVID-19 pandemic, the body of literature concerning distance education involving virtual learning was primarily concerned with the use of video conferencing software (e.g., Henning, 2001; Kies et al., etc., 1997), but was not particularly disturbed with the issue of the camera on/off during online learning, particularly in SLA field. In

contrast, before the COVID-19 outbreak and the universities' closure, students used their webcams to attend their online classes; using web-videoconferencing was considered innovative by students in remote education and online learning, as various studies have underlined (e.g., Al-Samarraie, 2019; Giesbers et al., 2013).

Only recently have studies noted that many educators are finding themselves teaching online for the first time and confronted with a new set of challenges (Wangdi & Rai, 2022), resulting in excessive stress and anxiety among instructors unfamiliar with online distance education and the unpredictable change in their teaching pedagogical practices (Hodges et al., 2020; Zara et al., 2022). The shift to emergency online teaching and learning has undoubtedly posed educators with the challenge of providing students with the same opportunities and qualities for online learning as they do for face-to-face learning; however, researchers must provide knowledge and empirical evidence regarding best practices in synchronous online learning, including one of the unresolved questions: whether students should turn on or off their cameras during online English classes and what impact it has on students' English learning outcomes.

The present study, thus, explores students' recent actions and reasonings on camera on/off based on their one academic term (12 weeks) of experience in studying English courses online at a university in Thailand. The following research questions guide this study:

1. How frequently and for what reasons do students turn on their cameras? What are their reasons for not turning on their cameras during online lessons?
2. What factors affect students' decisions to turn on/off their cameras in online English studies?
3. What effects do students' gender and English proficiency have on their past actions and reasons for turning on/off during their online English studies?
4. How do students' past actions and reasons for turning on/off when studying online English correlate with and predict their online English learning outcomes?

Literature Review

Students Engagement and Interaction in Online Learning

There is no distinct definition of student engagement. This said, in the online teaching and learning context, students' engagement can be understood as a collection of active and collaborative learning, students' effort to interact with teachers and their peers, and students' involvement in learning activities (Khlaif et al., 2021; Wong & Chong, 2018). The terms "student engagement" and "interaction" are often used interchangeably in the literature. Researchers regard students' engagement and interaction as two very important aspects of online learning. The existing belief is that when students are engaged or interact more frequently in online sessions, they perform academically better (Bond, 2020; Pratiwi & Waluyo, 2022); it improves students' motivation to learn, increases their satisfaction, and reduces their sense of isolation (Martin & Bolliger, 2018); lower level of students' depression (Li & Lerner, 2011; Apridayani & Waluyo, 2022); increase students' self-efficacy belief (Bowden et al., 2021), and so on. Seeing the benefits of students' engagement or interaction, particularly in online learning, researchers have

attempted to explore different aspects of online learning and how it might impact students' engagement/interaction in the educational field, specifically in the SLA field. The most recent being whether the video cameras on/off would result in poor/better classroom engagement/interaction.

Given the fact that online learning has gained popularity only during the COVID-19 pandemic (Wangdi & Rai, 2022), there is a paucity of research in the areas that address how cameras on/off during online learning may impact students' engagement or interaction. However, a few studies available demonstrate that students' engagement or interaction improves when they turn on their video cameras (Ahmed & Opoku, 2022; Kisworo, 2021; Melgaard et al., 2022). In other words, these few studies agree that cameras off can result in poor in-class engagement and interactions. Through a video camera, teachers and students can see each other, thereby creating a sense of face-to-face interaction despite the online learning setting; thus, turning it off during the class diminishes this sense (Chen, 2021). Students likely disengage from the learning process by switching off their cameras and microphones (Kisworo, 2021). In some instances, students would fabricate alternative justifications for not opening their cameras and concealing themselves behind their screens. Hence, teachers are highly advised to urge students to turn on their cameras during online sessions, as students are generally more engaged when the cameras are turned on (Ahmed & Opoku, 2022). In the latest study on academic procrastination and online learning during the COVID-19 pandemic, Melgaard et al. (2022) disclosed that students tended to turn off their cameras during the synchronous method of delivery, resulting in a lack of participation and engagement. Certainly, students are less likely to conduct "distracting" activities when their webcams are turned on rather than off when in a virtual classroom.

Literature Survey on Cameras On/Off in Online Learning Context

Prior research has established that students avoid using their cameras during synchronous online learning. Cranfield et al. (2021) studied students' experiences at universities in three countries (South Africa, Wales, and Hungary) concerning their choices for virtual learning participation. Their study discovered that the majority of students (77%/559) did not always turn on their video cameras while engaging in an online session dominated by students from Hungary and that all students from the three nations preferred not to turn on their video cameras. Castelli and Sarvary (2021) surveyed undergraduates enrolled in Cornell University's Investigative Biology Laboratory (Ithaca, NY, USA), and discovered that the vast majority of students (90%/249) turned off their video cameras at least some of the time during online synchronous class meetings held via Zoom. Correspondingly, Bedenlier et al. (2021) conducted a study of 3,527 students at a German university and discovered that 764 students never, 927 seldom, 879 occasionally, 698 frequently, and 259 always utilized webcams during online sessions. There were 2570 students if the whole number of students who chose never, seldom, and sometimes to represent camera off practice, compared to the total number of students who selected often and always (957 students) indicating camera on practice. It was not only self-reported by students; teachers also admitted that the majority of their students turned off their cameras and vanished when I asked a question (Chanwaiwit & Inpin, 2021).

Students appear to have a variety of reasons for refusing to turn on their cameras during online learning. Concerning personal appearance, worrying about other people and

their visible physical location in the background, and having a slow internet connection was among the reasons reported by university students in the United States (Castelli & Sarvary, 2021). In Romania, a study by Gherheș et al. (2021) revealed that the primary causes of students not turning on cameras include anxiety, fear of being exposed, humiliation, shyness, the need to maintain privacy in the home/personal space, and the possibility that other people will wander into the background. Students in Norway testified that they were more likely to turn off the camera because of their peers doing so; also, classroom size has a significant effect on the camera being turned off; for instance, when a lecture has 70 participants, it makes it less appealing to have the camera on (Melgaard & Monir, 2021). Tobi et al. (2021) discovered that the primary reasons for students not turning on cameras during online lessons in Malaysia are a poor internet connection, a lack of internet data, social norms, not being comfortable being observed by peers, and not being physically presentable; additionally, teacher instructions and class assessments influence students' decisions to turn on the camera.

Forcing students to turn on their cameras, however, is not a simple answer. Students emphasize in a study by Gonzalez et al. (2022) that such an instruction would have a negative effect on them since it would be viewed as an invasion of privacy that could be distracting and uncomfortable. Therefore, Castelli and Sarvary (2021) suggest an indirect approach by encouraging the usage of the camera while building social norms of having cameras on throughout class, recognizing potential distractions from students' viewpoints, and engaging students in active learning. As a starting point, teachers could circulate a survey that collects information on the difficulties and issues that students may encounter when turning on their cameras during an online class. This issue, however, may necessitate a more in-depth discussion of the online learning code of etiquette and respect for the teacher and classmates in the instance of one chatting with a camera on while the other has a camera turned off.

Besides, turning on the camera during online classes the whole time is not all that positive. There has been a term, "Zoom or Videoconference fatigue," defined as the experience of fatigue during and/or after a videoconference, regardless of the specific VC (videoconference) system used (Döring et al., 2022). It has been validated that 1) the frequency, duration, and brevity of Zoom meetings were associated with increased fatigue, and 2) exhaustion was connected with negative attitudes toward Zoom meetings. Students may have more than one online class in a single day, and in some situations, more than three classes, not to add the rigors of normal and exam sessions. Meanwhile, COVID-19-related issues may result in feelings of isolation, worry, and sadness. All of these factors can lead to students being nonresponsive when attending online synchronous Zoom classes, which has a negative impact on the nonverbal dynamics of student–instructor interactions. Students also say that it is more difficult to retain focus, particularly when multitasking (Peper et al., 2021). Thus, from the results of these studies, the camera on/off topic requires special attention; while camera-off situations can reduce learning engagement, the approach to encouraging students to turn on their cameras, as previously elaborated, requires careful practice, indicating the need to investigate effective practices in a specific subject.

To the best of the authors' knowledge, there are only a few studies that investigate the camera on/off topic in online English teaching and learning. Among the few studies is by Pavlov et al. (2021), who investigated students' and teachers' perceptions of the usage of video cameras in online English classes in Russia. They noticed ($N = 207$) that

70% of students turn on cameras only when the teacher instructs them to and turn them off otherwise. Only 19% of students say they always keep their cameras on. The teacher's request (60%), the need for "real-life" communication (56%), and the notion that they better engage in learning (34%) are the three most common reasons for turning on their cameras. However, the majority of teachers (N = 96) (80 percent) prefer that their students have their cameras turned on during online classes. In contrast to the students' perceptions, 60% of teachers say that these are motivated students who are making good academic progress and prefer to turn on their cameras. 50% of teachers believe that modest or shy students turn off their cameras. These data also contradict students' opinions, who report they switch off their cameras mostly due to study environmental conditions. Importantly, 70% of teachers agree with students' assessments that students grow acclimated to studying with their cameras on after a while. When their cameras are turned on, 65% of teachers believe that their students study better and engage with the learning materials.

Similarly, the U.S. students in Song's study (2021) acknowledged that it was difficult to participate in online discussions during synchronous sessions due to a lack of conversational cues in video conferencing, as many students silenced their microphones or turned off their video cameras. EFL teachers in Costa Rica, Central America, have also observed EFL students in their online classes turning off their cameras for the majority of class time and preferring to do so, particularly when students are aware that their teachers request their class participation or when they do not wish to reveal their background (Farrell, 2021). There is a dearth of evidence in the body of research regarding whether students should turn on or off their cameras during online English classes and the effect on students' English learning outcomes. Along these, nothing is known regarding the role of gender and English proficiency level in this research subject. It is undeniably understudied in Thailand. The current study, hence, seeks to address such research gaps.

Methods

Research Design

This study employed a mixed-method research design that combines quantitative and qualitative data in a single research project (Bergman, 2008), i.e., examining the camera on/off in online English teaching and learning. Specifically, it applied the concurrent mixed-method design, where quantitative and qualitative data are collected and analyzed in parallel, and interpretations are drawn based on quantitative and qualitative results (Creswell et al., 2008). It utilized quantitative and qualitative data to delve into students' perceptions based on their online English experience and examine the relationships among variables of interest as stated in the research questions.

Participants

The participants were 314 undergraduate students (65.9% female and 34% male) from an autonomous university in southern Thailand. There were more female participants than male participants in this study because the number of females enrolled in the selected university was way greater than that of males. The participants majored in

disciplines such as Management, Medicine, Pharmacy, Political Science and Law, Liberal Arts, Public Health, and so on. They ranged in age from 18 to 22, with a mean of 19.49 (SD =.848). They have more than 5 years of school-level English learning experience. All the participants were Thai native speakers who were studying English as a foreign language. Foreign lecturers from many countries, including Indonesia, China, Iran, the Philippines, India, Bhutan, and Malaysia, taught them in English. The lecturers were unable to communicate in Thai and were not permitted to use it in their classroom instruction. The ZOOM programs were utilized in the completely synchronous online English courses. This was the participants' first online study experience in their entire educational journey. The details are provided in Table 1 below.

Table 1
Participants' background information

Gender	Frequency	Percentage
Female	207	65.92
Male	107	34.08
Major		
Management	34	10.83
Medicine	49	15.61
Pharmacy	31	9.87
Political Science and Law	29	9.24
Engineering and Technology	36	11.46
Liberal Arts	33	10.51
Architecture and Design	21	6.69
Allied Health Science	61	19.43
Public Health	20	6.37
Age		
18	24	7.64
19	156	49.68
20	98	31.21
21	29	9.24
22	7	2.23

Instrument and Measure

Survey

A series of surveys was devised to elicit students' perspectives on their recent online English classes. It was divided into two sections. The first section (6 items, Table 2) gathered data on students' perceptions of the camera on, including whether they turned on their cameras during online English classes, their reasons for doing so, their feelings about having their cameras on during online lessons, and the extent to which they participated while their cameras were on. The following section (11 items, Table 3) collected data on their justifications for turning off their cameras during synchronous online learning. Each item began with the phrase "I did not turn on my camera during online English sessions due to..." Both sections included options ranging from "Never"

to "Always," denoted by the numbers "1" to "5". These options permitted researchers to track the frequency of each survey item's activity.

The survey items were generated using the Castelli and Sarvary survey data (2021). We chose some items that were appropriate for the research context, for example, "I did not turn on my camera during online English classes due to concerns about my appearance," while others were designed appropriately based on the findings of previous studies, as explained in the literature review section. After obtaining and cleaning the data, Cronbach's Alpha was used to determine the internal reliability. Cronbach's alpha of .70 was chosen as the minimum acceptable value (Bland & Altman, 1997). The result was .736, showing that the survey items were internally consistent to a reasonable degree. The average value of the intraclass correlation coefficient was .736, showing a moderate degree of reliability (Koo & Li, 2016).

Short Essay

Qualitative data were obtained from students' short essays responding to the following question: "What is your opinion about having your camera ON during online English classes?" The question was translated into both English and Thai. The students could provide explanations in either Thai or English. The essay elicited submissions totaling 2,411 words from the students. Then, they were prepared for thematic analysis, as explained in the result section.

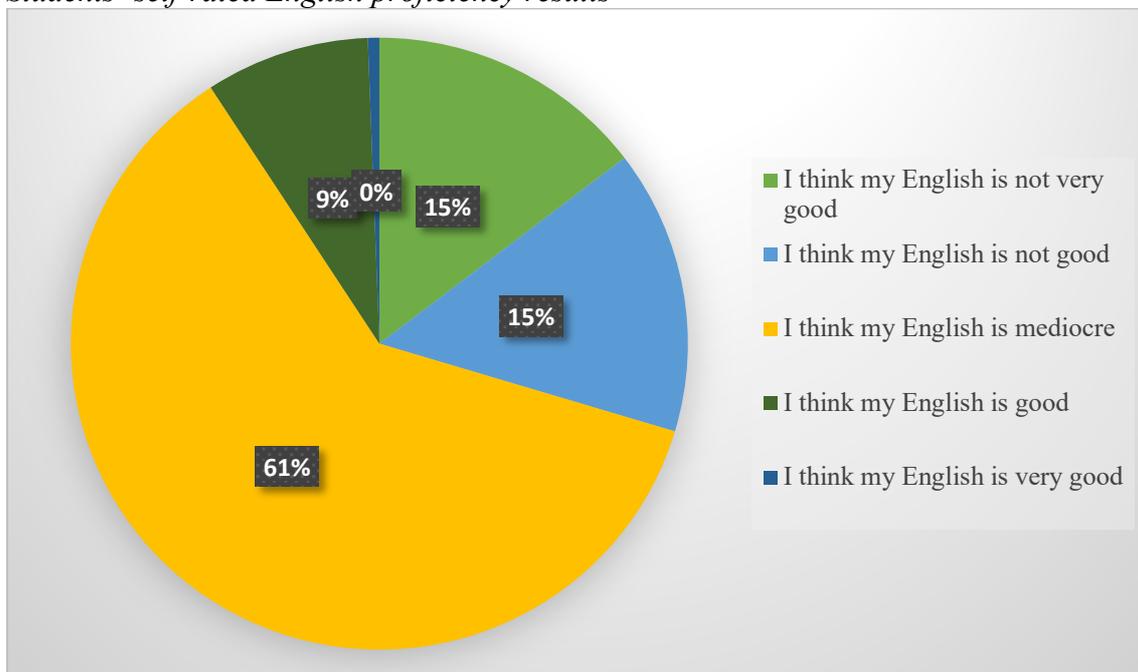
English Course Grade

This study investigated not only students' perceptions and practices regarding camera on/off during their one academic term of online learning in English courses, but also how those perceptions and practices were associated with their English learning outcomes. Students' grades in the English courses in which they participated were used to determine the learning outcome. The range of scores was 58.43 to 95.48, with an average score of 81.90 ($SD = 6.65$). The SD indicated a large disparity among the students.

Self-Rated English Proficiency

Due to the impossibility of administering a large-scale English proficiency exam for all participants due to COVID-19's safety protocols, the study selected to use self-rated English proficiency as a proxy for English competence. Previously, self-rated proficiency was used as a substitute measure of proficiency (e.g., Liu, 2018). Students responded to the question, "How would you rank your English proficiency level?" on a five-point Likert scale ranging from 1 (I think my English is not very good) to 5 (I think my English is very good). As illustrated in Chart 1, the majority of students evaluated their English proficiency as "mediocre" (192). Students who considered their English to be not very good or not very good were merged and categorized as low-proficiency students for data analysis (93). A similar procedure was carried out on students who considered their English to be "good" or "very good" (29).

Figure 1
Students' self-rated English proficiency results



Data Collection

The data collection took place during the academic year 2020–2021. The researchers delivered surveys using Google Forms with QR codes to foreign English lecturers in one week. The lecturers then distributed the surveys to their students. To recruit participants, a purposive sampling method based on three criteria was used (Bernard, 2017). Participants are required to be: 1) undergraduate students, 2) enrolled in at least one term (12 weeks) of completely synchronous online English classes, and 3) willing to participate in the study.

Ethical concerns. Before data collection, researchers got ethics training and legal authorization to conduct the research. Further, researchers assured that participants were aware of the research's objectives and that the data collected was treated as confidential.

Data Analysis

In response to the research questions, various quantitative data analyses were conducted. First, descriptive statistics were explored to determine the frequency and reasons for students' camera use. Then, exploratory factor analyses (EFA) were conducted to reveal the variables influencing students' practices and perceptions of having a camera on or off in online English instruction and learning. Subsequently, independent t-tests and a one-way ANOVA were performed to assess gender and English proficiency differences, respectively. Finally, bivariate correlation and linear regression analyses were conducted to disclose the impact of turning the camera on or off on the English-learning outcomes of students. To complement the quantitative results, qualitative data were evaluated using a thematic approach (Braun & Clarke, 2006).

Results

Quantitative Results

Students' Frequency and Reasons for Turning On/Off Camera

Descriptive statistics were used to explore students' frequency and reasons for turning the camera on during their online learning in English courses. Based on the highest percentage for each survey item (Table 2), the students reported that they only sometimes turned on their cameras during online classes. They always turned on their cameras, not because their teachers asked them to do so, but sometimes because they saw their friends in the class doing so. It was only sometimes that they were more engaged and participated actively in the class when their cameras were on, yet they never felt more tired studying in the class when their cameras were on.

Table 2

Students' frequency and reasons for turning the camera on (%)

No.	Text items	Never	Seldom	Sometimes	Often	Always
1	I turned on my camera during online English classes.	3.82	24.84	39.49	17.20	14.65
2	I turned on my camera because my teacher asked me to do so.	6.69	11.46	26.75	22.61	32.48
3	I turned on my camera because I saw my friends in the class doing so.	14.97	19.43	29.94	24.52	11.15
4	I felt more engaged in the class when my camera was on.	10.83	14.33	34.08	24.52	16.24
5	I felt more tired studying in class when my camera was on.	31.53	24.52	26.75	12.10	5.10
6	I participated more actively in class when my camera was on.	5.41	19.43	36.94	26.75	11.46

As for their reasons for not turning on their cameras during online lessons, the highest percentages for each survey item (Table 3) demonstrated that the students never turned on their cameras during online lessons due to concerns about their appearances, about other people being seen behind them, about the feeling of everyone looking at them the entire time, about their physical location being seen behind them, about distracting their classmates, or about distracting their teachers. Also, it occurred relatively infrequently due to the poor internet connection. These findings appear to be intriguing, and the qualitative data may shed light on our understanding of this subject.

Table 3*Students' reasons for turning off their cameras during the past online English classes (%)*

No.	I did not turn on my camera during online English classes because ...	Never	Seldom	Sometimes	Often	Always
1	I was concerned about my appearance.	49.36	15.61	17.20	14.65	3.18
2	I was concerned about other people being seen behind me.	55.41	15.29	12.42	12.10	4.78
3	my internet connection was weak.	20.38	29.30	25.80	19.75	4.78
4	I felt like everyone was looking at me the whole time.	47.13	19.43	17.52	9.24	6.69
5	I was concerned about my physical location being seen behind me.	50.64	17.20	14.65	12.10	5.41
6	I was concerned about distracting my classmates.	57.96	16.88	15.92	6.37	2.87
7	I was concerned about distracting my teacher.	73.89	11.46	9.55	4.14	0.96
8	I didn't want to be seen not paying attention.	59.87	19.43	13.69	5.10	1.91
9	I didn't want to be seen walking away from my computer.	50.32	23.25	16.24	5.73	4.46
10	I didn't want to be seen doing other things on my computer.	64.97	18.47	11.15	3.18	2.23
11	My webcam was not working.	55.10	21.02	15.61	5.73	2.55

Exploratory Factor Analysis (EFA)

The data were normally distributed, with Skewness and Kurtosis values ranging from -2 to +2, as advised by George and Mallery (2003). The investigation was then expanded with exploratory factor analysis (EFA) to discover the factors impacting students' practices and perceptions of having a camera on and off in online English teaching and learning (Henson & Roberts, 2006). We followed the methodology described by Phakiti (2018), and we used Principal Axis Factoring (PAF) because it is thought to be robust and commonly used (Fabrigar & Wegener, 2012). The number of factors kept was chosen using a Kaiser criterion eigenvalue greater than 1. The KMO and Bartlett's tests were performed to assess whether the components were extractable, with a sample adequacy criterion of .50 (Field, 2018). Because some factors were assumed to be unrelated, orthogonal rotation, i.e., Varimax, was applied. The approved factor loading cut-off point was determined to be .30 (Fabrigar & Wegener, 2012).

Two factors affecting students' frequency and reasons for turning on the camera in online English classes emerged, validated by Bartlett's test of sphericity: $\chi^2(15) = 368.591, p < .001$. The sampling adequacy was .641, higher than the threshold of .50. The two factors accounted for 58% of the variance in students' camera-off actions. Factor 1 involving items 1, 2, 3, and 4 were labelled "classroom dynamics" (*Eigenvalue* = 2.228),

and Factor 2, including items 5 and 6, was labelled "classroom exhaustion and participation" (*Eigenvalue* = 1.244). The text items are presented in Table 2.

Then, EFA was performed on the data about students' reasons for not turning on their cameras during online English courses. Even though the previous results showed that most of the students selected the option "Never" for the majority of the survey items (Table 3), it is important to note that there were still students who chose other options, and the results of EFA helped us comprehend the factors influencing students' reasons for turning off their cameras. The results disclosed three factors, validated by Bartlett's test of sphericity: $\chi^2(55) = 1307.807, p < .001$. The sampling adequacy was .849, higher than the threshold of .50. These three factors could account for 65% of the variance in students' reasons for their camera off actions. Factor 1 involving items 1, 2, 4, and 5 (*Eigenvalue* = 4.496) was labelled "self-appearance and background"; Factor 2 consisting of items 8, 9, and 10 (*Eigenvalue* = 1.502) was labelled "unrelated physical activities"; Factor 3 containing items 3, 6, 7, and 11 (*Eigenvalue* = 1.114) was labelled "distracting behaviors and technical issues". The text items are presented in Table 3.

Variances by gender and English proficiency

Multiple independent t-tests were performed to determine whether male and female students had different frequencies and reasons for turning on and off cameras during online English sessions. The results revealed that there were no significant differences: $t(312) = 4.56, p = .649$ for frequency and reasons for turning on the camera, and $t(312) = -1.26, p = .207$ for their reasons for turning off their cameras. It means that gender did not affect students' frequency and reasons for turning the camera on/off during online English lessons.

A one-way ANOVA was used to evaluate whether students with different levels of English proficiency had different frequencies and reasons for turning on and off cameras during online English sessions. There were no significant differences: $F(311) = 1.825, p = .163$ for frequency and reasons for turning on the camera and $F(311) = 2.08, p = .812$ for their reasons of turning off their cameras. Consequently, the following conducted *post-hoc Tukey* tests revealed no significant variations in proficiency levels across students. These findings indicated that English skills did not affect whether students turned on or off their cameras during the synchronous online English classes.

Effects on Online English Learning Outcomes

The results of *Pearson's* correlations unveiled that the students' past actions in terms of frequency and reasons for turning their cameras on in online English classes had no significant relationship with their online learning outcomes ($r = .038, p = .500$); correspondingly, their reasons for turning off their cameras were unrelated to their online learning outcomes ($r = .092, p = .103$).

As a result, the following linear regression analyses showed non-significant results: students' frequency and reasons for turning on the camera ($F = .456, p = .50$) and their reasons for turning off the camera could not predict their online learning outcomes ($F = 2.681, p = .103$). The regression models were not significant.

These findings suggest that no matter how frequently students turn on their cameras or for what reasons they turn them on or off, it does not affect their online English learning outcomes.

Qualitative Results

Students' responses to the short essay were examined using thematic analysis. It allowed researchers to identify, analyze, and report patterns (themes) in data (Braun & Clarke, 2006). This study specifically employed a deductive approach, meaning that researchers brought to the data a series of concepts, ideas, or topics to code and interpret the data. It is considered a top-down approach where researchers prepare a foundation for analyzing the data, for what meanings are coded, and for how codes are clustered to develop themes (Braun et al., 2015). In this study, researchers brought to the data the results of the quantitative data analyses to code and interpret the students' essay responses. The collected responses were grouped into the five identified factors affecting students' frequency and reasons for turning on/off their cameras in online English studies. The students were coded with S and a continuous number, e.g., S1, S2, S3, etc. The thematic analysis revealed the following results.

Factors Influencing Students' Decisions to Turn On Their Cameras

Factor 1: Classroom dynamics. This part involves situations that occur during online English sessions that motivate students to turn on their cameras. The students explained that they switched on their cameras so that their teachers could monitor them visually and ensure that they were present in class. They recognized that using a webcam during an online class could help to improve the student-teacher relationship and make dialogue more comfortable, as also mentioned in Chen's study (2021). A few students realized that turning on their cameras could help them concentrate on their studies because they were aware that their teachers were watching them. Nonetheless, many admitted to having uneasy and even dull feelings as a result of turning on their cameras. The sample extracts are shown below.

“When turning on the camera, there may be some concern because the conditions are not always ready. Nonetheless, every time I switch on the camera during class, I feel as if it helps me concentrate and focus on my studies. Pay closer attention to the teacher. I am more engaged in class and have a greater connection with teachers and classmates. It is, in my opinion, quite valuable and has an impact on online learning.” (S10)

“I believe there are both benefits and drawbacks. The teacher can see the pupils' faces and emotions while instructing, which is a benefit. The negative is that as a result, you may grow bored or agitated.” (S17)

Factor 2: Classroom exhaustion and participation. The majority of students claimed that they turned on their cameras to make the classroom more friendly and to encourage participatory learning. The students noted a variety of benefits, ranging from seeing their classmates' faces to increasing their learning confidence and attention. They

suggested that by turning on the camera during class, students could concentrate on the material rather than on distractions. They may, however, experience pressures that result in tiredness and a loss of concentration on occasion, particularly during significant events, such as a class quiz or test. While some confessed that they would feel slightly ashamed if they turned on their cameras while most of their students did not, others hoped to inspire their peers by turning on their cameras, believing that this would result in a more productive English learning session. Several studies observed similar results (e.g., Ahmed & Opoku, 2022). The following is a sampling of sample responses.

“By turning on the camera during class, students can concentrate on the material rather than on distractions, as it appears as though someone is watching. As a result, if you do something inappropriate, it will make you appear bad.” (S22)

“When I turn on my camera, I feel thrilled and optimistic about the day's lessons. I'm aware that someone was displeased with it, but I'd like to speak for them. Although camera ON is not beneficial to you right now, I feel it will be beneficial to your English language skills in the near future.” (S31)

Factors Influencing Students' Decisions to Turn Off Their Cameras

Factor 1: Self-appearance and background. Turning on the camera during synchronous learning is not something that everyone is comfortable with. Students were nervous and concerned. When their cameras were on, unsuccessful reactions or responses would feel more stressful. They had a sensation that teachers would address them by name when they saw their faces on camera. Students who shared rooms indicated a need to respect their roommates due to the possibility that they would be visible in their camera backdrops. While some of them felt pity for their professors speaking alone with a camera on while all the pupils' cameras were turned off, they were powerless to regulate their environment, even at home. Additionally, there was concern about pupils who enjoyed taking screenshots of their classmates being amusing during the online class while their cameras were turned on. While some students perceived going on camera as a boost to their confidence, others reported a loss of confidence and became distracted from learning as a result of their constant concern about their appearances, as seen in the excerpt below.

“Turning on the camera is believed to have a number of benefits and drawbacks, but the positive aspect is that the teacher saw our faces for the first time. I am aware that we do indeed sit and study. However, the disadvantage is that we lose concentration. Certain types of friends will like photographing our faces and using them as amusing images. Certain individuals object to it. Another drawback is that, as with our work, we must use caution when drinking water, eating, sitting, and writing. It is as though someone is keeping an eye on you.” (S5)

“I believe that occasionally turning on the camera diminishes my confidence in my academics and diverts my attention away from them since I am constantly concerned about my appearance because so many people are focused on me.” (S16)

Factor 2: Unrelated physical activities. This factor, the students believed, was influenced by their "unfavorable" learning environment, whether at home or in the student dormitory. They needed to adjust their studies in the middle because their roommates or siblings were also studying online from the same apartment room. Nonetheless, this factor received scant attention from the students in their essays, but Melgaard et al. (2022) mentioned that students would tend to turn off their cameras during the synchronous method of delivery and likely engage in "distracting" activities when their webcams are turned on rather than off when in a virtual classroom. The following are some representative responses.

“Turning on the camera makes students feel uneasy and inconvenient because learning environments such as online study with family members or objects in the school environment may be untidy or inconvenient to share with classmates and the teacher.” (S23)

“My room is where I study and hang out with friends and senior roommates. Oftentimes, we do not learn the same things and thus cause people to be disturbed.” (S9).

Factor 3: Distracting behaviors and technical issues. For this factor, students expressed worry regarding technical aspects that may be beneficial for teachers to learn. One of the conditions that teachers frequently neglected was that students might take more than one class in a single day. In this case, their electronic gadgets, such as smartphones, laptops, or PCs, may overheat and frequently drain their batteries. At times, students had to use multiple devices to comply with teachers' requests that their cameras be turned on. Negative signals were uncontrollable. They also noted that not all pupils had access to new technological gadgets; others were forced to study with older devices that could malfunction or break at any time if excessively utilized. Turning off the webcam was one way to avoid internet connection failures and overheating devices. Similar concerns have been recorded among Malaysian students (Tobi et al., 2021). The following excerpts represent the responses.

“Turning on the camera is a personal preference, as some people have laptops, phones, and iPads, while others simply have phones. As a result, I am unable to activate the camera while performing other tasks on the phone. Opening the camera should be a voluntary activity on the part of each individual. It should not be required.” (S40)

“When I switch on the camera, the battery immediately drains. And the machine will be hot, and you will be in no mood to switch it on, as it will be identical to turning off the camera.” (S6)

“That, I believe, is why I disagree with turning on a camera because I access the internet via my cell phone. This will result in a slowdown of the internet. There may be times when your phone gets hot and shuts off, leaving you without internet access to study.” (S14)

Discussion and Pedagogical Implications

This study aimed to shed light on the debate over whether students should turn on or off their cameras during online English lessons and the impact this has on students' English learning outcomes. It engaged undergraduate students who had just completed one academic semester of fully synchronous online English classes (12 weeks). The inquiry focused on students' recent online learning experiences and the outcomes of their English online learning. Both quantitative and qualitative results have been presented earlier. This study encapsulates two points worth discussing, along with their possible educational implications.

Frequency, Reasons, and Factors of Turning on/off Camera during Online English Classes

This study confirms prior findings from non-English disciplines (e.g., Bedenlier et al., 2021; Castelli and Sarvary, 2021; Cranfield et al., 2021) and in an EFL context (Pavlov et al., 2021) from various countries that students avoid turning on their cameras during synchronous online lessons. It adds to our understanding that EFL students at the study location in Thailand behaved similarly to undergraduate students from other universities across the globe. They typically turned on their cameras in response to teacher requests, which seems plausible given that they reported no significant variations in their level of learning engagement and class participation with or without the camera, as revealed by the survey results. Students wrote extensively in their essays about the benefits of having a camera on for classroom interaction and the conduciveness of the learning process, yet their responses contradicted what they reported in the survey; this indicates that students' decisions to turn on their cameras are situation-dependent. The situations may involve not only teachers' instructions but also 1) class timing, e.g., most students are hesitant to switch on their cameras in early morning courses because they may have just woken up, not taken a shower, etc., 2) technical issues, such as internet connectivity, the state of used electronic devices, etc., and 3) the conditions of the study place, such as a large number of people or noise at home or in their dormitory, and so forth. Such knowledge should be openly embraced by EFL teachers during online instruction, as it can prevent possible circumstances labeled as an invasion of privacy, which can be distracting and uncomfortable for students (Gonzalez et al., 2022; Waluyo et al., 2022) if force is ever used.

However, this study partially confirms earlier findings regarding students' reasons for turning off their cameras (e.g., Castelli & Sarvary, 2021; Gherheş et al., 2021; Tobi et al., 2021), as only a minority of students identified those reasons in the survey. The majority of students never switched off their cameras during online classes due to concerns about their appearances, other people being seen behind them, the feeling of being watched constantly, and their physical position being visible behind them, disturbing their classmates and teachers. Also, it occurred occasionally due to a weak internet connection. Nonetheless, these factors were frequently addressed in students' essays. Therefore, this study further investigated the factors affecting students' frequency and reasons for turning on and off their cameras during online courses. Simply put, if EFL teachers intend to enhance students' frequency of camera use, they should construct course instructions and learning activities in such a way that they improve classroom

dynamics and address exhaustion and participation. Simultaneously, EFL teachers should be aware of the factors that contribute to students' decisions to switch off their cameras, which may include their physical appearance and background, unrelated physical activity, distracting behaviors, and technical issues.

One of the lessons learned from the study's findings is that students did weigh the benefits and drawbacks of having a camera on or off, even during online learning; to some readers, the findings presented here may appear to contradict one another, as the students recognized the possibility of the aforementioned situations and reasons occurring to them at certain times, not to mention the existence of uncontrollable conditions, such as the strength of internet connection and situations in their place. Hence, this study encourages teachers to not only look from their side and raise the suspicion that students are not following the class because their cameras are turned off, but also to consider the situations that students may be experiencing at the time of the study, as discussed previously. We support the implementation of the strategies proposed by Castelli and Sarvary (2021) that 1) do not require but explicitly encourage students to turn on their cameras, 2) identify potential distractions and provide a brief learning break; and, most importantly, 3) engage students in active learning, which can inspire students to turn on their cameras or, in the absence of a camera, keep students engaged actively. Forcing students to activate their cameras is not an effective strategy although it may achieve the desired goal (Gonzalez et al., 2022).

Another lesson is that students' gender and English proficiency levels have no bearing on how they behave with or without a camera during live online English learning. There is no prior study in this area that we are aware of. This research indicates that EFL teachers do not need to consider these two variables when developing learning instructions for an online English course.

Impact of Camera on/off on Online English Learning Outcomes

While preceding studies identified detrimental effects of having a camera off on student learning (e.g., Ahmed & Opoku, 2022; Chen, 2021; Kisworo, 2021), the current study's statistical analysis results did not disclose significant relationships between having a camera on or off and learning outcomes and having a camera on or off could not predict the learning outcomes either. This finding has a clear pedagogical implication: regardless of whether students turn their cameras on or off during online classes, neither condition has a significant effect on students' online English learning outcomes as measured by course grades. The students did discuss the detrimental effects, such as less effective communication and a reduced learning engagement rate, in their essays as presented in the result section, yet the statistical analysis outcomes denied the effects.

Conclusion

The findings of the present study conclude that students' camera on/off actions during a synchronous online lesson while learning the English language was affected by classroom dynamics, classroom exhaustion and participation, physical appearance and background, unrelated physical activity, distracting behaviors, and technical issues. The student's gender and self-reported English proficiency did not affect the students' actions

to turn the camera on/off. This study's findings also refuted the negative effects of turning on/off a camera on students' online English learning outcomes, as measured by course grades.

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