seminar.net
MEDIA, TECHNOLOGY & LIFELONG LEARNING
www.seminar.net

ISSN: 1504-4831 Vol 19, No 2 (2023) https://doi.org/10.7577/seminar.5494

Black screens: From problem to something useful?

Inge Hermanrud

Department of Organisation, Leadership and Management, Inland School of Business and Social Sciences

inge.hermanrud@inn.no

Gunhild Wedum

Department of Organisation, Leadership and Management, Inland School of Business and Social Sciences

gunhild.wedum@inn.no

Trine Løvold Syversen

Department of Organisation, Leadership and Management, Inland School of Business and Social Sciences

trine.lovold.syversen@inn.no

Sigrid Myklebø

Department of Social Work and Guidance, Inland Norway University of Applied Sciences

sigrid.myklebo@inn.no

Monica Johanessen Lervik

Department of Organisation, Leadership and Management, Inland School of Business and Social Sciences

monica.lervik@inn.no

Jens Petter Madsbu

Department of Organisation, Leadership and Management, Inland School of Business and Social Sciences

jens.madsbu@inn.no

Åse Storhaug Hole
Inland School of Business and Social Sciences
ase.storhaug@inn.no

Abstract

In this article, we ask the question: Why do students choose to turn their cameras off during online teaching? We discuss this issue from the perspective of adaptive structuration theory and media richness theory. We use qualitative data from 169 free text answers from two surveys conducted during the pandemic: in May/June 2020 and May/June 2021. In our analysis, we have developed three categories – "the social context", "window mirror" and the "noisy classroom" – to better understand why students turn off their cameras. Based on these categories, we describe problems that turning off the camera is a response to. These problems are: too many cues, attributes of the home that might promote negative feelings, disclosure of home and personal activities, and online self-image. Our findings are in line with other research that contends that turning off the camera helps to reduce problems, such as an invasion of privacy that could be distracting and uncomfortable, and "digital fatigue". We contribute to the research field by describing that some students turn off their camera for another reason: to maintain their self-image. However, although turning off cameras solves problems, the resulting "black screens" create new problems, in the form of less engagement for collaborative learning activities and an increased feeling of isolation among students.

Keywords: black screens, Zoom, online education, adaptive structuration theory

Introduction

The “black screen” and “camera off” phenomenon refers to the issue of teachers encountering a black screen in Zoom videoconferencing rooms when students do not activate their cameras (Christoforou, 2021). The recent rapid transition of education to online learning platforms due to Covid-19 has provided us with an opportunity to examine the equally rapid adaption of Zoom for learning. This paper focuses on the students’ adaption – namely, their choice to activate their camera or not. According to the literature, students frequently refrain from turning on their video cameras as they are not obligated to do so due to GDPR regulations (Meletiou-Mavrotheris et al., 2022). This aligns with our findings. A survey from Inland Norway University of Applied Sciences shows that almost half of the students opted to keep their cameras off during online teaching throughout the Covid-19 pandemic, both in spring 2020 (47%) and in spring 2021 (44%). The proportion of students who stated that they would sometimes turn the camera off in online teaching increased, from 25 per cent in spring 2020 to 47 per cent in spring 2021. Correspondingly, the proportion of students who stated that they always had the camera on decreased, from 28 to 9 per cent in the same period. We see that the students changed their online behaviour during the pandemic, and that a significant proportion developed a more flexible approach to how they used the camera in different teaching situations – or, in other words: whether they chose to display their faces to their teachers and fellow students, or not.

In this article, using a qualitative analysis of text answers from two surveys, we discuss various reasons for this result from a human-technology interaction perspective. Our research question is straightforward: Why do students choose to turn their cameras off during online teaching? We find that the use of Zoom in teaching created a social situation that many students experienced as being too intimate and exposing with their cameras turned on. Our perspective highlights how we adapt our technology use in this new social situation. This helps us to theorise on how students influence and shape online education through their own use of the technology at hand. With this paper, we contribute to the understanding of the profound interplay between the social dynamics and the technology within online education. This research therefore contributes more to the impact of the use of the technology on the social setting for learning than the impact of the technology itself (Orlikowski, 2000).

Theory

The current literature can be criticised for trying to develop clear recommendations for online learning without addressing its complexity, in terms of technology use and the social context. Experience tells us that technology can bring teachers and students together, but it can also create increased distance (Åkesson et al., 2022). However, our perspective is that it is not the technology itself that creates closeness or distance, but its use (Orlikowski, 2000).

The phenomenon of “black screens” or “camera turned off” concerns students’ decisions to turn their camera on or off. Although the students could not choose another platform for learning during Covid-19, they could modify their use of it to meet their own needs. There is an emerging stream of literature today that argues that having the camera turned off has many advantages for the students. For example, in a recent study, students emphasise that an instruction to turn on the camera would have a negative effect on them as it would be viewed as an invasion of privacy that could be distracting and uncomfortable (Gonzalez et al., 2022). Another example is the negative

effects of Zoom fatigue, which is defined as the experience of fatigue during and/or after a videoconference. It has been proven that the frequency, duration and brevity of Zoom sessions lead to increased fatigue and exhaustion (Waluy & Wangdi, 2023).

Two theoretical frameworks that address these modification or appropriation processes are media richness theory (Daft et al., 1987) and adaptive structuration theory (DeSanctis & Poole, 1994). Media richness theory stresses the role of social cues and communication needs. Social cues are facial expressions, how we move our bodies, tone of voice and any other ways in which we communicate, which influence the functioning of social relationships. Without access to social cues, students can be vulnerable to feelings of isolation (Meyerson et al., 1996)

Media richness theory explores how different types of media are suitable for different communication purposes. The theory claims that richness is posited to have the greatest impact on the user's perception of the usefulness of a medium. Studies have found that a medium that allows the sending and receiving of rich information with multiple cues is more likely to be perceived as useful (Ishii et al, 2019). Videoconference systems such as Zoom and Teams are regarded as "rich" media. The theory argues that media that are "rich" are best when communicating issues with high complexity, whilst "lean" media are best for communicating straightforward and clear messages. The central hypothesis of the theory is that communication effectiveness depends on the match between task requirements and medium capacity. The theory becomes relevant when examining the phenomenon of "black screens" as it:

> "expounds the nature of social structures within advanced information technologies and the key interaction processes that figure in their use" (DeSanctis & Poole, 1994, p. 121).

Communication that transmits rich cues is seen as important for creating and maintaining social and emotional relations. Social presence theory therefore predicts that richer media that enables multiple cues and immediate feedback will lead to more emotional communication and more engagement with the other party (Kiesler & Sproull, 1992). In line with this, adaptive structuration theory suggests that the relationship between technology, social structures and human agency is mutually influential. A learning platform such as Zoom is shaped by these social structures and the actions of the teacher and the students. At the same time, the actions of the teacher and the students influence, reify or change social structures and behaviour. Individuals and groups interpret the social situation and use technology in ways that align with their needs, social structures and norms. But they also have the capacity to modify and redefine those structures through their interactions with technology. Seen from the perspective of adaptive structuration theory, students' decisions to turn their cameras off can impact other students, the different roles in the "online classroom", networking, and group formation and dynamics among the students. Seen together, the theories presented aim to emphasise the students' active appropriation of online learning.

Methods

We conducted two surveys one year apart (May/June 2020 and May/June 2021). The surveys were carried out among full-time and part-time students on bachelor's and master's courses, half-year studies and year-long studies at a business school in Norway. The selection of respondents was limited to studies where physical meetings were the norm, in order to be able to study

experiences with the conversion from physical to digital forms of teaching. The number of respondents in Study 1 was 249 students (which is 20% of the total number of 1,244 students invited to participate in the study), and in Study 2, 235 students responded (19% of the total 1,251 students invited to participate in the study). The surveys were semi-structured with a combination of closed and open-ended questions, which gave us both quantitative and qualitative information. In the first study, 106 students answered the open-ended question: “Why do you choose to have your camera turned off?” Answers ranged in length from one sentence to five sentences. In the second study, 63 students answered the broader question: “Do you have any comments related to having the camera turned off in the lesson?” We asked this question to learn more about additional aspects of the phenomenon of “black screens”. The answers provided ranged in length from one sentence to eleven sentences. Most students in both studies answered the questions with between one and three sentences.

In the analysis, we used the usual steps in thematic analysis. First, we familiarised ourselves with the data material. Second, we created the first codes. Third, we developed categories based on the codes. Finally, we conducted a critical review of the categories. In the analysis, we have tried to assign one label to each piece of data, but a few students brought up several issues and provided insights into several categories, therefore we have more incidents that respondents. The analysis was furthermore inspired by grounded theory techniques, where incidents are not grouped according to pre-defined categories, but rather salient categories of meaning and relationships between categories are derived from the data itself through a process of constant comparison within and across emergent categories and theory (Charmaz, 2014).

The authors of this article are teachers in higher education, which means that we all have experiences of online teaching and thus prior knowledge concerning our research field. Our prior knowledge and experiences of teaching online can be both an advantage and a disadvantage. We consider prior knowledge to mostly be an advantage, because the students’ reflections were recognisable from our earlier conversations and chats with them during teaching lessons. A possible disadvantage can be bias in expectations and prejudice. Credibility of the data refers to the accuracy of understanding, interpretation and representation of research results (Ritchie et al., 2013). We consider our teaching experiences and prior knowledge to have strengthened our ability to understand and interpret the free texts included in our analyses.

Findings study 1

Why do you choose to have your camera turned off? This was one of the open questions in the survey. Table 1 summarises the responses to that question in Study 1. The explanations range from technical problems to privacy concerns and self- image issues.

Table 1:

Open coding	Content	Number of incidents in the material	Example
	Unpleasant to be observed	24	"I don't like to expose myself"
	Privacy	20	"I'm at work and don't want the camera to be on in case someone enters my office"
	Norms	15	"Everybody else turns their camera off"
	Needless	12	"There is no point in having the camera on"
	Online appearance	12	"I am tired of keeping up appearances online"
	Technical reasons	7	"I don't have a camera that works"
	Fear of abuse	6	"Somebody might record me"
	Role of the lecturer	5	"Our lecturer asks us to turn the camera off"
	Self-image	5	"I don't like to look at myself""
	Distractions	4	"There are too many of us for everyone to have the camera on during lectures. It's better to concentrate on the teaching/teacher, and avoid being distracted"

Overview of our open code

From 106 individual responses, we labelled 110 incidents, for which we developed three categories in the axial coding – “the social context”, Zoom as a “window mirror” and Zoom as a “noisy classroom” – to better understand why students turn their cameras off.

The social context of Zoom lectures

Findings from the data show that the students experience becoming invisible in the crowd, as well as becoming passive recipients of academic content because they are not activated, and there are no expectations that the camera would be switched on. When the camera is switched off, the students experience being more easily distracted by personal matters, which hampers their concentration on the teaching process. Our perspective highlights how we humans adapt our technology use in a new social situation. The codes that have provided insights into the social context are “norms”, “needless”, “technical reasons” and “role of the lecturer”.

The number of participants in attendance plays a role in determining whether students choose to activate their cameras.

> “If there are large lectures with 200 people in the conversation, I don’t have the camera on. This is because the larger lectures are mostly run by the lecturer without the students’ input. In smaller lectures, the students participate more actively in the teaching.” (Full-time student)

The definition of what is considered a small or large group of students in a lecture varies:

> “My use of the camera only depends on the number of people attending the class. Less than 30 means on, more than 30 means off.” (Full-time student)

In the data material, the students state that they turn the camera off when there are more than 30 students present, and they turn the camera on when there are fewer than 30 students present. Here we clearly see a change in the behaviour of the students. Previous student evaluations at Inland Norway University of Applied Sciences have indicated that the videoconference system was used for monologues from lecturers, which meant that the students experienced becoming passive and inactive (Gillies, 2008). This also confirms the students’ statements in the data material that they experience becoming passive participants and then it becomes easier to hide away “in the crowd” of students online. It is easier for reticent students to be “invisible” and disappear into the crowd in a videoconference than it is in a classroom on campus (Gillies, 2008).

Zoom the “noisy classroom”

This category includes the code “distractions”, “privacy” and “unpleasant to be observed”. One of the reasons why students turn their cameras off is the visual noise. Visual noise is the random visual stimuli of seeing the other students. Students can become distracted at a physical lecture, but it is even easier online. It is hard to concentrate when there are lots of visual distractions, either online or at home.

> “Easily distracted, […] learns more from physical lecture”. (Full- time student)

Students are not only distracted by others but can also distract themselves.

> “There are several things that can be distracting on Zoom. For example, my mobile, doing other things at the same time, etc.” (Full-time student)

Various dimensions related to “protecting” oneself are mentioned by several respondents. Some do not want to reveal their messy room or accidentally expose family members. Others justify turning off their camera by saying that they want to protect themselves from misuse of the data, or that they do not want others to see what they are doing in addition to following the lecture. It may be that they are doing other tasks at the same time, such as eating or drinking. It is easy to forget that you have your camera switched on, and the other students and teachers could be given an insight into a situation that the students do not want to share.

> “It is a very unnatural situation, and you are visible all the time. You sit at home and choose to be comfortable – perhaps have your children around you, you possibly want to eat at the same time, and do not have to think about how you look. One should not be asked, or even encouraged, to turn on the camera, especially not when participation in the lesson is voluntary.” (Full-time student)

Noise is created both by the activities of others in their homes and by the students’ own environments. In other words, in the online Zoom classroom, the boundaries between shared space and private space are unclear. There are many potential distractions, and it is hard to conceal the state of being distracted when the camera is on. To cope, students turn their camera off to reduce their noise.

Zoom as a “window mirror”

We have labelled this category “window mirror” because Zoom can be considered as a window and a mirror at the same time. When the camera is on, the students can look at each other (window), while also seeing themselves (mirror) as the other students see them. The codes that have provided insights into this category in the axial coding are, “fear of being abused”, “online appearance” and “self -image”. Zoom seems to have a deepfelt impact on some students. Zoom is perceived as a “window mirror”, which influences the students’ self-image. Here is an excerpt that illustrates Zoom as a mirror:

> “I don’t like to look at myself, that’s why I don’t use my camera.” (Full-time student)

Another illustration that illustrates Zoom as a mirror:

> “I get easily distracted by myself. My attention is sometimes more on the live video of myself and others (students) than on what is being presented.” (Full-time student)

The situation becomes more problematic when there are more participants who have their camera turned on, thereby enabling the students to observe and be observed through the “window”:

> “There are too many of us for everyone to have their camera on during lectures, […] better to concentrate and avoid being distracted by having the camera off.” (Part-time student)

Our data suggest that the mirrored self on Zoom can be experienced as a misidentification – a delusional belief that the student’s reflection in the mirror is not the image that they would like to present to others. This effect can be stronger among students who lack self-confidence or who do not like to see themselves. By having the camera turned on, a window is created where the students become very exposed to each other. The way they look, how they are dressed, and how

they live are revealed, and the attention moves from focusing on what is presented in the lesson to comparing themselves with others.

Findings study 2

In the second study, our question was formulated differently, asking for comments regarding having cameras turned off during lectures. Table 2 presents the incidents 71 based on 69 comments given by the respondents.

Table 2:

Open coding	Content	Number of incidents in the material	Example
	Prefer camera on	8	"Cameras should have been on more"
	Privacy	7	"I have seen other students who had forgotten that the camera was on and were doing things that others were not intended to see. You get a little anxious about doing the "same blister", and it feels safer to have it off"
	Not an issue	7	"On or off, I do not care"
	Norms	7	"There is a culture for turning the camera off, but in small groups we turn it on"
	Respect the lecturer	7	"I turn the camera on to show respect to the lecturer"
	Suggest other ways to use the technology	7	"Display the students for the lecturer only, not the other students"
	Self-image	6	"Distracting because you see yourself."
	Role of lecturer	5	"The lecturer ask us to turn it off"

Open coding	Content	Number of incidents in the material	Example
	Online appearance	5	"It is demanding to have a camera on, it makes you more tired"
	Attributes of the home	5	"I feel uncomfortable showing others how I live"
	Technical reasons	4	"The sound is sometimes better when the camera is turned off, you save bandwidth"
	Multitasking	3	"Many lectures can be listened to as a podcast while doing other things"
	Critical mass	1	"The fewer people who have their camera on, the more exposed you

Comments regarding cameras being turned off during lectures

In this study, the social context category comprises the codes "prefer camera on", "on or off, I don't care" "norms", "respect the lecturer", role of lecturer", technical reasons" and "critical mass". Several students state that they would like more cameras to be turned on. This could be due to the differences in how the question was worded in Studies 1 and 2, but we interpret it in line with the findings of Åkesson et al. (2022) – namely, as a consequence of the lack of social contact over time. On the other hand, several respondents stated that they do not care. For them, the lecture would remain the same regardless of whether the cameras were on or off. Similar to the first study, we find that the students maintain the same norms regarding when to have their camera on or off. The norm is that the camera is turned off when participating in large groups, and on when they work in smaller groups. If the camera is not turned on during a conversation with a few people, the other students might be offended. A new finding in Study 2 is that some (5) respondents mention that they turn their camera on out of respect for their lecturer. This may be due to the fact that the lecturers have reported negative experiences of talking to "black screens", and this is a topic that has been discussed with students during lectures. One student put it in this way:

> "I understand that not everyone necessarily has the opportunity to have a camera on. Having said that, most people do have the opportunity. This is something that annoys me, because it makes a HUGE difference for me to talk to someone I can see instead of a "black screen". I am convinced that the lecturers feel the same. It must be tough to teach to 70 little black boxes […] it's also harder to get answers out of the students. I believe that the teaching would have been much better if everyone turned their camera on. How to make it happen is a good question, but I think you have to be smart in the way you approach the topic and make the students

> themselves “want” to do it. I think early in the semester you should set aside time to discuss this with the students. It can be up to each individual lecturer how much time, but I believe that if the students get their own thoughts out and talk about this in their own words, it will help more people to have their cameras on.” (Full-time student)

The students feel a need to respect their lecturers by turning the camera on. One student described is as follows:

> “I’ve been a bit surprised by how many people have turned off the camera – I almost think it’s a bit rude towards the lecturer, as the lecturer loses all dynamics with the students in that way (and thus often the inspiration). A look, a smile, a question from a student means an incredible amount – both for the lecturer and for the whole dynamic during the lectures. It’s perfectly fine for people to alternate between having their camera on and off throughout the day, but the total number of people with cameras on should always be up to half of the student population.” (Part-time student)

The students also suggest that the role of the lecturer influences the degree to which the students have their camera turned on or off. If the lecturer lectures less land prioritise a more collaborative pedagogy, cameras are more likely to be turned on. Sometimes the lecturers ask students to turn their cameras on or off. The few students who mention it like it when they are asked to turn their camera off, but they do not like being forced to turn the camera on.

The next category, “noisy classroom”, reveals that the students still think that their appearance will distract others and therefore prefer to keep their camera off. In addition, we have highlighted “attributes of the home” and “multitasking” here as “sub-explanations” of the “black screens” phenomenon. The findings within this category suggest that students adapt their participation in relation to how presentable their home is and the temptation to perform other activities that can be done when the camera is off, such as only listening to the lecture while working out or doing other things, and thereby avoiding disturbing other students.

A few comments concerning Zoom as a “window mirror” feature in both studies. The students are distracted because they see themselves. One student put it this way:

> “It feels unnatural to see yourself all the time with the camera on, in addition to the fact that if you need to move around the house, it can be disturbing to fellow students, so I mostly have the camera off.” (Full-time student)

Discussion

The main categories developed in this research are “the social context”, Zoom the “noisy classroom” and “window mirror”. In the following, we discuss how “window mirror” and the “noisy classroom” are handled in this context. From our data, we have identified four “black screen” practices that students use to overcome the challenges with “window mirror” and the “noisy classroom” (see table 3), to regain control over their own learning environment (Lowe & Lin, 2015).

The first is the practice of turning off the camera to make Zoom "leaner". Although media richness theory regards Zoom as the second richest media, due to its ability to transmit social cues (DeSanctis & Poole, 1994; Ishii et al., 2019), the students report that Zoom transmits more than being present in a physical classroom and face-to-face interactions, and more than they desire. To gain control, students choose to turn their cameras off. The second practice is to apply filters or to the turn the camera off to avoid showing the student's home environment. When using Zoom with the camera on, the home becomes a part of the classroom that other students can see. To force someone to reveal their home can be viewed as an invasion of privacy that could be both distracting and uncomfortable (Gonzalez et al., 2022). The third practice stems from the problem that an activated camera may reveal the students' individual and personal activities, which they might not want to share. To control this, students keep the camera turned off, but put it on when they are prepared to "take centre stage". The fourth practice concerns online self-image and confidence. Seeing oneself in a live video can be distracting for the student. To control self-image, students turn the camera off. Some students state that, whilst other students may choose to have their cameras on, they prefer not to do so themselves because it can be distracting to constantly see themselves on the screen. These practices that we have developed on the basis of the data are summarised in Table 3.

Table 3:

Problem	**Core categories informing the problem behind the practice**	**Information received**	**Information given**	**Rules**	**"Black screen" practice**	**Insight**
Too many cues, verbal and nonverbal cues	The "noisy classroom", sub-category "distraction" through personal appearance	Potentially too much, too intimate, too close and too intense	Their own appearance, features, clothing and hair, where they are sitting, and more	Restrict own appearance to a minimum	Use a picture of them or keep the camera off	Zoom is a media that is too rich. Turning the camera off makes it leaner
Attributes of the home might promote negative feelings	The "noisy classroom", sub-category "attributes of the home"	Other students' homes	Student's own home or other contexts in which they participate	Avoid showing their own physical surround-ings	Use filters or keep the camera off	Camera is off to avoid sharing what is felt to be private

Problem	Core categories informing the problem behind the practice	Information received	Information given	Rules	"Black screen" practice	Insight
Disclosure of personal activities	The "noisy classroom", sub-category "multitasking	What other students are doing	Can suddenly forget that the camera is on	Keep the camera off	Keep the camera off, just turn it on when they are prepared to "be on stage"	Camera is off to hide personal activities, and camera is used only when ready to commun-icate
Online self-image	"Window mirror", sub-categories "online appearance" and "self-image"	A live video of their own appearance	Disturbing to see themself	Others can have their camera on, but not me	Keep the camera off, to avoid seeing themself	Turning the camera off is about avoiding seeing oneself

Adaption of Zoom in context

Table 3 shows that students adapt their technology use to their own needs. As adaptive structuration theory (DeSanctis & Poole, 1994) suggests, we find that the use of Zoom, social structures and human agency are mutually influential. We have uncovered a social context that is characterised by great uncertainty among students. To regain control, students make themselves anonymous in class. They also safeguard their own self-image. Zoom as a "window mirror" highlights how, by turning their camera off, students are able to restore their own self-image. Turning the camera off means that the student does not have to look at themself. However, turning the camera off can also promote multitasking.

The use of Zoom is shaped by this context and the subsequent actions of the students regarding turning their camera on or off. The students interpret the social situation and use technology in ways that align with their own needs, and one of these needs is to control what they show of themselves and what they themselves see. Seen from the perspective of adaptive structuration theory, emerging norms for turning the camera off enable more students to do the same, even though they might not have the same need as the "earliest adopters" of the "black screen" practice. However, when social context cues are reduced, social self-consciousness might also be reduced. Behaviour then becomes more individual, and people display less socially desirable

behaviour in the learning environment. General communication theory underlines that a lack of cues causes people to become less concerned with others (Kiesler & Sproull, 1992). There was a similar finding in a recent Swedish study on emergency online remote teaching (Hernwall et al., 2022). The students in both this and our own study experienced being anonymous, and they therefore took less responsibility in the learning situation. With the camera turned off, it is not only disturbance that is reduced but also the transmission of social cues, which create a social context with less engagement. The implication is that more is required of the teacher in online learning.

Conclusion

In this article, we have asked the question: Why do students choose to turn their camera off during online teaching? We find several reasons, such as technical issues, privacy issues and a feeling of discomfort having the camera on. We were also eager to better understand why the proportion of students who stated that they always had the camera on decreased from 28 to 9 per cent in the space of just one year. Drawing on adaptive structuration theory, we propose that the reason behind this is that keeping the camera off has become the prevailing norm among the students. And when fewer students have their camera on, those few persons who still have their camera on feel increased discomfort. As a result, even more students choose to turn the camera off.

Adaptive structuration theory (DeSanctis & Poole, 1994) rests on the assumption that technology is socially constructed. From this perspective, the phenomenon of “black screens” can be seen as an appropriation of the camera use as a “workaround”. A workaround is a way to overcome or avoid a difficulty or problem. The problem or difficulty here is the individual student’s need to control the social context with many participants.

Our findings are in line with other research that contends that turning off the camera helps to reduce problems such as the invasion of privacy that could be a source of distraction and discomfort (Gonzalez et al., 2022) and “Zoom fatigue” (Waluy & Wangdi, 2023). We add to this list by finding that students turn their cameras off in order to maintain their own self-image. For this reason, it is correct to say that “black screens” have solved problems and have become useful for the students. However, the same “black screens” create new problems, in the form of less engagement for collaborative learning activities and an increased feeling of isolation among some of the students.

We can identify some practical implications for teaching. Having cameras turned off is not only a problem – it also reduces anxiety, disturbance, and can promote that the attention is directed more towards the lecture. Therefore, lecturers should sometimes encourage students to turn their cameras off, such as when full attention is needed. Students also need to learn to make judgements about when to have their camera on or off, by reflecting upon how their use of the camera might have an impact on others. We suggest that lecturers should set aside time to discuss this among the students, as suggested by some of the students in our study. Another practical implication of this study is to encourage students to use the tools that already exist in Zoom, such as applying filters or using a picture or, as one student in our study suggested, only displaying the students to the lecturer, if that helps to increase the student`s online engagement. However, the goal must be to develop a context in which students feel safe to turn their camera on when it is

useful to do so. In line with adaptive structuration theory, we argue that individual lectures can make a difference in this respect. Furthermore, it is important to encourage cooperation between lecturers teaching in the same programme, to ensure a common practice and handling of "black screens".

References

Daft, R. L., Lengel, R. H., & Trevino, L. K. (1987). Message equivocality, media selection, and manager performance: Implications for information systems. *MIS quarterly*, 355-366. http://dx.doi.org/10.2307/248682

DeSanctis, G., & Poole, M. S. (1994). Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organization science*, 5(2), 121-147. http://dx.doi.org/10.1287/orsc.5.2.121

Charmaz, K. (2014). Constructing grounded theory. 2nd ed. Thousand Oaks, CA: Sage.

Christoforou, M. (2021). Language teaching through the 'Black screen': Implications of an emergency remote teaching context in higher education. In *EDULEARN21 Proceedings* (pp. 2603-2610). IATED. http://dx.doi.org/10.21125/edulearn.2021.0566

Gillies, R. M. (2008). The effects of cooperative learning on junior high school students' behaviours, discourse and learning during a science-based learning activity. *School Psychology International*, 29(3), 328-347. http://dx.doi.org/10.1177/0143034308093673

Gonzalez, R., Sørum, H., & Raaen, K. (2022). Emergency digital teaching during the COVID-19 lockdown: Students' perspectives. *Education Sciences*, 12(3), 152. http://dx.doi.org/10.3390/educsci12030152

Hernwall, P., Käck, A., & Stymne, J. (2022). Norms, appropriation, and social affordances in studying in emergency remote teaching: A meta-analysis of student experiences. *Högre utbildning,* 12(3), 47-60. http://dx.doi.org/10.23865/hu.v12.3830

Ishii, K., Lyons, M. M., & Carr, S. A. (2019). Revisiting media richness theory for today and future. *Human Behavior and Emerging Technologies*, 1(2), 124-131. http://dx.doi.org/10.1002/hbe2.138

Kiesler, S., & Sproull, L. (1992). Group decision making and communication technology. *Organizational behavior and human decision processes*, 52(1), 96-123. http://dx.doi.org/10.1016/0749-5978(92)90047-b

Lowes, S., & Lin, P. (2015). Learning to learn online: Using locus of control to help students become successful online learners. *Journal of Online Learning Research*, 1(1), 17-48 https://eric.ed.gov/?id=EJ1148622

Meletiou-Mavrotheris, M., Eteokleous, N., & Stylianou-Georgiou, A. (2022). Emergency remote learning in higher education in Cyprus during COVID-19 lockdown: A Zoom-out view of

challenges and opportunities for quality online learning. *Education Sciences*, 12(7), 477. http://dx.doi.org/10.3390/educsci12070477

Meyerson, D., Weick, K. & Kramer, R. (1996). Swift trust and temporary groups. In Kramer R. M. (Ed.), Trust in organizations: *Frontiers of theory and research* (pp. 166–196). Sage. http://dx.doi.org/10.4135/9781452243610.n9

Orlikowski, W. J. (2000). *Managing use not technology: A view from the trenches*. *Mastering Information Management*. Prentice-Hall.

Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative research practice: A guide for social science students and researchers*. Sage.

Waluyo, B., & Wangdi, T. (2023). Reasons and impacts of camera on and off during synchronous online English teaching and learning: Insights from Thai EFL Context. *Computer Assisted Language Learning*, 24(1), 179-198.

Åkesson, E., Just, E., & Barajas, K. E. (2022). Closer and further away – Emergency-remote teacher education, orientations and student-bodies. *Högre utbildning*, 12(1). http://dx.doi.org/10.23865/hu.v12.3573