



RAPID SWITCH FROM FACE-TO-FACE WORKSHOPS TO ONLINE WORKSHOPS

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ABSTRACT

During 2020, the COVID-19 pandemic required many higher education institutes, including engineering education, to quickly switch all face-to-face lessons and meetings to remote meetings and teaching sessions. This situation forced us all to rapidly create new ways to interact, work and study remotely.

We had planned to organize five face-to-face multiprofessional ideation workshops in spring 2020 to create unbiased and innovative ideas related to smart clothing. COVID-19 forced us to replace the planned face-to-face workshops with five online workshops. We chose one video meeting platform for that purpose.

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Overall, online workshops proved to be an effective way to gather diverse ideas. The work went smoothly, although the video meeting platform was new to some participants. Online workshops are an easy way to bring together people regardless of geographical distances. Even though the organized workshops were for research purposes, we think similar workshops are very suitable for online teaching as well. We believe online workshops will be here to stay after COVID-19, as they are a great option when hybrid teaching and working take place.

1 INTRODUCTION

During 2020, the COVID-19 situation placed many higher education institutions, including engineering education, in a situation where all face-to-face lessons and meetings had to be switched to their online counterparts almost immediately. The change from on-campus working and teaching to online equivalents had to be done literally in one night at Tampere University.

Efficient working and learning incorporate bodily, physical, and social aspects [1] in addition to subject matter. These aspects are harder to establish in online working and learning than in face-to-face sessions. When rapidly changing all working and teaching to online, one big question was how to engage, activate and ensure interaction in online work, especially in a case where the participants do not know each other beforehand.

Many new ways to conduct remote and online teaching as well as research have been established during COVID-19, including, for example, broad utilization of different technical tools for online meetings, teaching sessions, and synchronous, as well as asynchronous, communication. Many of these tools have proven very suitable to multiple purposes. However, teachers need proper equipment and skills to use the technical tools for efficient online teaching [2] that facilitates students' intensive online learning. These equipment and skills can be very different than the ones used in teaching before COVID-19. Hence, teachers need time and training to adopt the new tools in an efficient way. Furthermore, the technical tools are developing continuously, hence teacher training is a continuous phenomenon [2]. The most important part of the teacher training with these tools is not know-how for their own use, but rather how to utilize the digital tools to enhance students' learning [2].

The COVID-19 pandemic provided a great opportunity to try different online teaching methods and to see their effects on students' learning, teachers' workload and costs of teaching. The COVID-19 situation has been a strong accelerator of teaching's digitalization [1]. A lot of discussion is going on about post-COVID-19 teaching, and especially about hybrid teaching in which the benefits of face-to-face and online teaching are combined. We believe that hybrid teaching is going to dramatically increase its popularity in higher education institutions after COVID-19. The online workshop is one distance teaching and working method. It suits the idea of hybrid teaching in the future very well.

2 HYBRID TEACHING AND WORKING

The hybrid teaching method utilizes technical tools to broaden the ways of teaching, learning, and working [3]. The hybrid method, whether it is connected to teaching or working in general, takes advantage of face-to-face, remote, and online working. Our definitions for those can be seen in *Table 1*.

Table 1. Definitions for face-to-face, remote, and online working and teaching

	Meeting in a physical room	Fully implemented with digital tools	Specific time slot
Face-to-face	Yes	No	Yes
Remote	No	Yes	No
Online	No	Yes	Yes

In a higher education institution setting, hybrid teaching means that a course has face-to-face sessions on campus, online sessions via an online platform, and/or remote study not depending on time, place, or pace. Additionally, in the hybrid method, the face-to-face sessions often contain parts that utilize technical tools, and the online sessions have more intense guidance for students, compared to traditional face-to-face and online lessons [3]. This encourages students to more intense active learning [3]. Hybrid teaching requires the students to take more responsibility for their learning. The hybrid model moves from the traditional teacher-centred classroom to an experience where the teacher is a learning facilitator [4].

Hybrid teaching has been shown to improve students' results in achieving learning outcomes [4]. As in all teaching, the goal in hybrid teaching is to help students learn the subject matter. The partial independence of geographical location saves teachers' and students' time. Furthermore, it enables, for example, video meetings and discussions with professionals all over the globe.

3 WORKSHOP AS A LEARNING AND WORKING METHOD

A workshop is an intentionally planned, facilitated, and scheduled session [5]. As such, it removes the participants from their normal daily context [5], which boosts their creativity. A workshop can be established either face-to-face or online [5]. In a workshop, a group of people is working on a task, such as studying and learning, solving problems, creating and developing ideas, and obtaining knowledge [5]. Today workshops can involve almost any number of participants due to the efficient online video conferencing tools. However, if the workshop involves a huge number of participants, it can be argued whether it is a workshop or a presentation, because not all the participants can interact efficiently towards a common goal. In a workshop the number of participants should be kept small to ensure all an equal possibility to participate in the task at hand [5].

Workshops require firm engagement among participants, facilitators' true enthusiasm for interaction, and active and open communication during the workshop to succeed [6]. Workshops are often used for educational purposes in professional development programs [6], even though they also suit normal teaching purposes in higher education. The method has been found very effective in boosting communication between different groups in courses requiring tasks to be done in small groups [7]. Involving all students in the workshops facilitates interteam discussion [7]. Without workshops, project teams in a course would work in isolation from other teams [7], and important ideas and knowledge would not have been shared. Workshops have been found to aid students in achieving learning outcomes [7].

4 RAPID SWITCH FROM FACE-TO-FACE TO ONLINE WORKSHOPS

Our initial plan, before COVID-19, was to organize face-to-face workshops to create new ideas for our research questions related to smart clothing. The duration of the workshops was planned to be two to three hours. Each workshop was designed for a group of five to seven participants, in addition to the five to six researchers who were supposed to take part to the workshops. We had planned to use Post-it notes for the idea creation process. The participants would have written their ideas on Post-it notes and attached them to posters on walls. Each poster would have had its own title in coordination with our research questions. However, due to the COVID-19 pandemic, we had to change our plan on very short notice. We moved the workshops online.

The number of participants in a single online workshop varied from five to fifteen, and five to six researchers participated in the workshops. We used a video meeting platform (VMP) for our online workshops. The online platform enables a larger participant group, as the physical environment or geographical distance creates no limitations. This is a clear benefit of online implementation. In addition, scheduling of online workshops is easier because there is no need for room reservations, and the participants do not have to reserve time for travelling to the workshop location.

The online workshops lasted two to three hours. We realized the idea creation process in VMP by sharing a screen with a ready-made whiteboard including titles, and each participant had their own section. The planned idea creation phase in face-to-face workshops and the realized idea creation phase in the online workshops are clarified in *Fig. 1*. This phase worked well in online workshops, for example, the written text is easy to read, and more text can be written on a small area, compared to face-to-face workshops.



Fig. 1. The idea creation phase in face-to-face workshops (left) and online workshops (right).

The online workshops required more thorough instructions to the participants than the face-to-face workshops would have needed. Even though the participants would have used the VMP before, not all were familiar with all the tools in VMP. To ensure smooth working in the idea creation phase, the participants were all given a chance to try typing on the shared screen and to use the stamp feature from the VMP's annotate bar. In addition, everyone was instructed on the use of VMP chat. Some of the participants used a browser version of the VMP, which meant that they did not have the annotate feature. Those participants were instructed to use the chat for writing their ideas. Two of the researchers transferred the messages from the chat to the screen when needed. One of the researchers was the host of the video meeting, and the rest of the researchers had cohost rights.

The initial idea was to record the face-to-face workshops with a video camera. This idea was directly moved to the online world by recording the online workshops in the VMP. Not all the participants kept their cameras on in the online workshops, hence not everyone was able to see everyone else's face. This is a clear disadvantage of online workshops compared to face-to-face ones. Even though the participants in online workshops would have the cameras on, screen sharing can hinder seeing the participants' images, depending on the computer equipment they are using. We noticed that the communication and the feeling of presence benefit from seeing each other's faces on-screen. However, the feeling of presence would probably be even better in face-to-face workshops, especially in cases where the participants do not know each other beforehand.

A coffee break was included in the original plan for the workshops. Coffee breaks are very good for getting acquainted with others; they have a very important role in many kinds of meetings and teaching sessions, even though their importance is seldom discussed. Some of the online workshops had a break around the middle. However, the break did not create informal chatting among workshop participants; instead, all were taking the break by themselves. Informal chatting with participants creates a feeling of community spirit and creates a friendly atmosphere among participants. This is unfortunately much harder to establish in online work.

The general flow of the workshops is presented in Fig. 2. Regardless of whether face-to-face or online implementation, the basic idea in the workshops was the

same. Every workshop opened with a short welcoming speech, followed by introducing the research group and all the participants. All were informed that the entire workshop would be recorded and screenshots taken. The participants were encouraged to have their cameras on, but they were not obligated. Researchers had their cameras on during the workshops. Next one of the researchers gave a brief presentation about the subject matter, and after that, the participants were instructed in the use of the VMP.

The workshop ideation phase of every research question began with a ten-minute silent session, in which the participants could write their ideas with the VMP's annotation tool on the shared screen. After silently working, participants were asked to discuss freely the ideas they had created. Two or three researchers elicited discussion, and simultaneously one to three researchers grouped the written ideas in different themes. The purpose of this grouping was to promote ideation and increase discussion. Each of the questions was processed in a similar manner, as seen in *Fig. 2*. The aim was to form as many ideas as possible to answer the research questions without any limitation. The discussion in the online workshops was very active and rich. However, some participants were very silent. The researchers had to pay special attention to them so that their ideas would also be written on the screen and discussed. Based on our previous experience, communication among participants who are not familiar with each other is much easier in face-to-face than online meetings. To succeed in bringing all participants into lively discussion in online workshops requires more effort from the facilitators than in the case of face-to-face workshops.

After the ideation phase, every participant was asked to mark their favourite idea, the most innovative idea, and the idea that is very good but has many challenges. This was done in the VMP with the annotation tool's stamps. This was a new feature in our workshop implementation plan; we did not have this planned for the face-to-face workshops. The VMP we used made this possible, and this phase worked very well in online implementations.

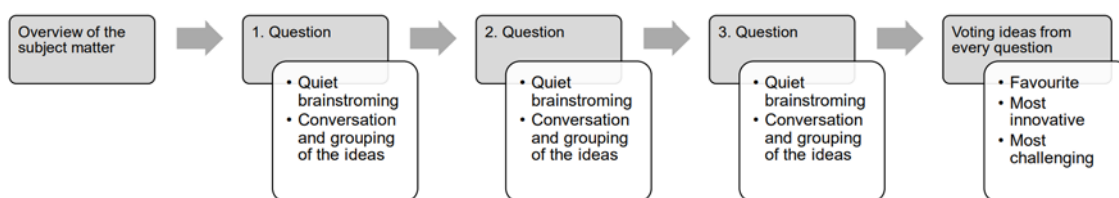


Fig. 2. The flow of the online workshops

Even though nowadays technical tools are mainly working well, some participants faced technical problems during the workshops. These kinds of challenges do not appear in face-to-face implementations. A technical facilitator and problem solver is needed in online workshops. Thus, one organizer needs to pay special attention to these issues.

5 SUMMARY AND ACKNOWLEDGMENTS

Overall, online workshops proved to be an effective way to gather and create diverse ideas, and the work went smoothly in all groups, although the VMP was new to some of the participants. Our thoughts on the benefits and disadvantages of face-to-face and online workshops are presented in *Table 2*, in which we have bolded the most important issues, in our opinion.

Table 2. Comparing face-to-face and online workshops

	Face-to-face	Online
Benefits	<p>Better feel of presence</p> <p>Easier to activate all participants to take an equal part in task at hand</p> <p>Easier unofficial communication</p> <p>Participants don't necessarily need computers</p> <p>Low probability of technical problems</p>	<p>Independence of geographical place</p> <p>Easier scheduling</p> <p>Easy recording with video meeting platform</p> <p>Huge number of participants possible</p> <p>Helps in achieving sustainable development goals</p> <p>Clear text, possibility to use various fonts and colors</p> <p>Lack of travelling saves time and money</p>
Disadvantages	<p>Dependency of geographical place</p> <p>More difficult scheduling</p> <p>Time and money spent on travelling</p> <p>Recording needs special equipment in the room</p> <p>Number of participants is limited according to the room</p>	<p>Poorer feel of presence</p> <p>Challenges in activating all participants to take an equal part in task at hand</p> <p>Lack of unofficial communication</p> <p>Participants need computers</p> <p>Probability of technical problems</p> <p>Know-how of the VMP needed</p> <p>More instruction for participants needed</p>

As seen in *Table 2*, both workshop implementation ways have their pros and cons. However, the biggest advantage to online workshops we noticed is the independence from being in the same physical place as other participants. Online workshops are an easy way to bring together people without restrictions on geographical distance. This is truly a great thing; people from all over the globe can participate in the same workshop. In the international field of higher education, where

students are in different countries, this enables them to work and study together. We believe that in the future, teaching cooperation will be easier among different institutes of higher education.

Furthermore, the lack of travelling and easier access to education aid in achieving the United Nation's sustainable development goals, such as climate action, sustainable cities and communities, responsible consumption and production, and quality education. Hence, hybrid teaching and working methods, where online workshops are one possibility, have far-reaching effects on life in many sectors.

The feel of presence is much harder to establish in online workshops than in face-to-face workshops. That is the biggest challenge in online workshops, in our opinion. Online workshop organizers have to work hard to intensely activate the participants, and in this way to create a better sense of presence.

Our experience of online workshops is definitely positive. They suited our purposes very well. Even though they have disadvantages, in many cases the benefits surpass the disadvantages. Online workshops prove to be a teaching method that adapts very well to a future utilizing hybrid teaching in higher education institutes.

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