



Experience of online education. Research report.

Version 1.3

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Warsaw 2023

Experience of Online Education

Executive summary

I. The purpose of the research

As university lecturers across Europe discovered in 2020, shifting from in-person to online teaching requires very different learning models and frameworks. Many of them felt unequipped to respond effectively to the new teaching conditions. In addition, the pandemic created new challenges around technologies, lecturer and student accessibility, and the need for practice-based subjects such as art and design. The research problem was to understand the educational expectations and experiences of students, lecturers, and technical staff in art and design. We looked at how this has been impacted by the shift to online/blended learning during 2020/21 and what it means for the future of university level art & design education.

II. Research methods

Because of the number of respondents: art and design lecturers, technical staff, and undergraduate students at the art and design faculties at five universities (i.e. BSU, UAL, IADT, SWPS, and CHNU), we used a survey as a quantitative research method. Next, we used a Focus Group Interview (a qualitative research method) to deepen the research problems.

III. The findings

- The pandemic has shown that online education is possible and effective, but:
 - Teaching methods should not simply be transferred from in-person education to online education. Need to develop ways of conducting classes and cooperation between students and teachers and between students in online education.
 - Both teachers and students should know how to use digital tools and online platforms.
 - Art and design education need specific digital tools to use during classes.
- We identified good practice during online learning and teaching course: 1:1 tutorials, hybridised teaching (some online, some in-person), lectures with elements of discussion, work in smaller groups, giving space to learn and develop (allow to ask questions and explore issues), creative warm-up (e.g. simple task to stimulate with the possibility of connecting and interaction), constant feedback from lectures and students (e.g. written critical feedback to presentation of students), using various format during classes (lecture, individual or group task and discussion), using VR during class.
- The most critical problems and difficulties were motivation to work, student engagement, teamwork, feedback and commenting on each other's projects, class discussion, building and establishing social relationships, well-being, finding work-life balance, and creativity during online education.
- The comfort of studying/working at home and the accessibility of classes (e.g. for disabled people, introverted people) and materials (e.g. lectures recorded) were advantages of online education.
- In-person education and hybrid education were the most effective.

- We should use the tools and opportunities offered by modern technology in order to make education as accessible as possible.
- Art and design education are about materiality, contact with the physical model/ piece of art, and presentation of projects.
 - Lack or limited access to workshops/studios, materials, technology, and opportunities for experimenting were described as serious difficulties during online education.
- Research shows also that immersive technologies can be a valuable tool in the future of online education in the field of art & design.
 - VR and AR provide immersive and interactive experiences to e.g. better visualise and test designs and interact with art in new ways. (“We are able to see objects with many different perspectives through VR and also I can change the class environment to be more effective”, Research report, p.19).

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Chapter 1. Research methodology

I. Explanation of research process

As university lecturers across Europe discovered during 2020, shifting from in-person to online teaching requires very different learning models and frameworks, and many felt unequipped to respond effectively to the new teaching conditions. This was partially addressed by the work of institutional learning technologists and professional development teams through workshops and training guides but much of this was, understandably, response-led and focused on immediate solutions rather than foundational or developmental. In addition, the pandemic created new challenges around technologies, lecturer and student accessibility, and the needs of practice-based subjects such as art and design.

II. The research problem

The research problem was to understand the pedagogical expectations and experiences of students, lecturers, and technical staff in art and design, and how this has been impacted by the shift to online/blended learning during 2020/21

To achieve the goal we distinguished several research areas:

1. Experience of online education
 - a) Good practices
 - b) Bad/poor practices
 - c) Assessment of knowledge and skills
 - d) Advantages of online education
 - e) Disadvantages of online education
 - f) Teamwork in online education
 - g) Motivation to work/learn
2. Creativity & online education
 - a) Seeking for materials and tools
 - b) Seeking for solutions
 - c) Lack or limited access to workshop
3. Technology in online education
 - a) Using of technology (kind of technology)
 - b) Missing functionalities of used technology
 - c) Immersive technology in online education.

III. Research sample

We sought responses from art and design lecturers, technical staff, and undergraduate students at the five art and design partners (i.e. BSU, UAL, IADT, SWPS, and CHNU). The diversity of partner institutions in terms of size, location, character, facilities, and subject-focus allowed for a broader set of responses.

We decided to use total population sampling. This is a type of purposive sampling where the whole population of interest is studied: students and staff from 5 universities.

IV. Research methods

We used a survey as a quantitative research method because of the number of respondents. To deepen research problems we used Focus Group Interview (a qualitative research method).

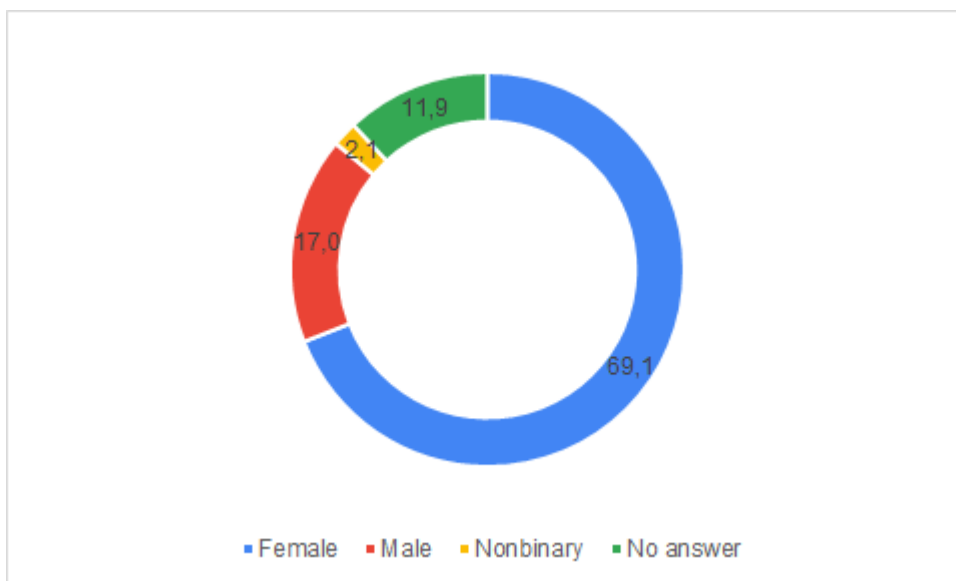
V. Data analysis

The report will identify statistically significant patterns in the questionnaire response, and thematic analysis will be used to analyse the qualitative responses to the questionnaires and the information gathered from the focus-group. Triangulation will be used to compare findings between staff and students, and between partner institutions.

Chapter 2. Research report: SURVEY

2.1. Characteristics of research and data analysis – students

Research was conducted between December 2021 and January 2022. We used online surveys as a research method. 388 students took part in this survey. 268 women, 66 men, 8 nonbinary people participated in it, 46 participants did not indicate their sex.

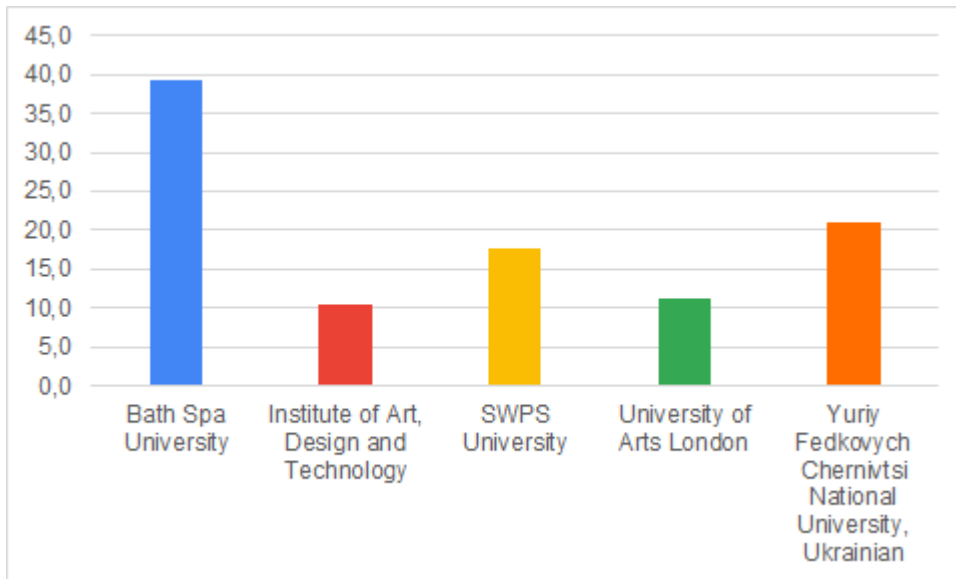


Pic. 1. Sex.

The average age of students was 23, the oldest participant was 68 years old and the youngest was 17 years old. Most of the respondents were 20 years old.

The participants were of many different nationalities. They came from 5 continents: Europe, North and South America, Asia and Africa.

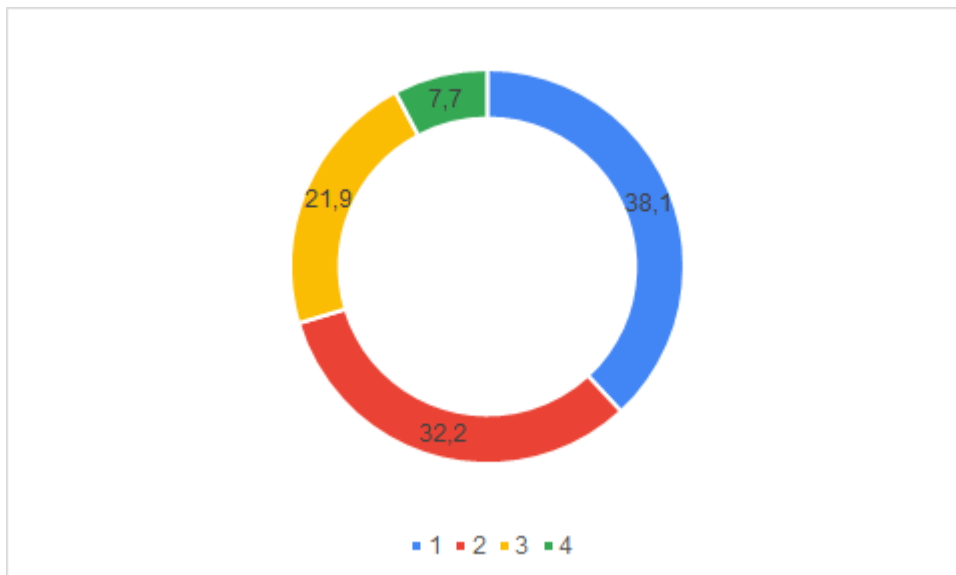
Research was conducted in 5 universities from Europe. This graph shows the students who participated in the survey.



Pic 2. Number of respondents according to universities.

Many participants were from the 1st (almost 40%) and the 2nd (1/3 respondents) year of study. Only 7% of the participants were from the 4th year of study.

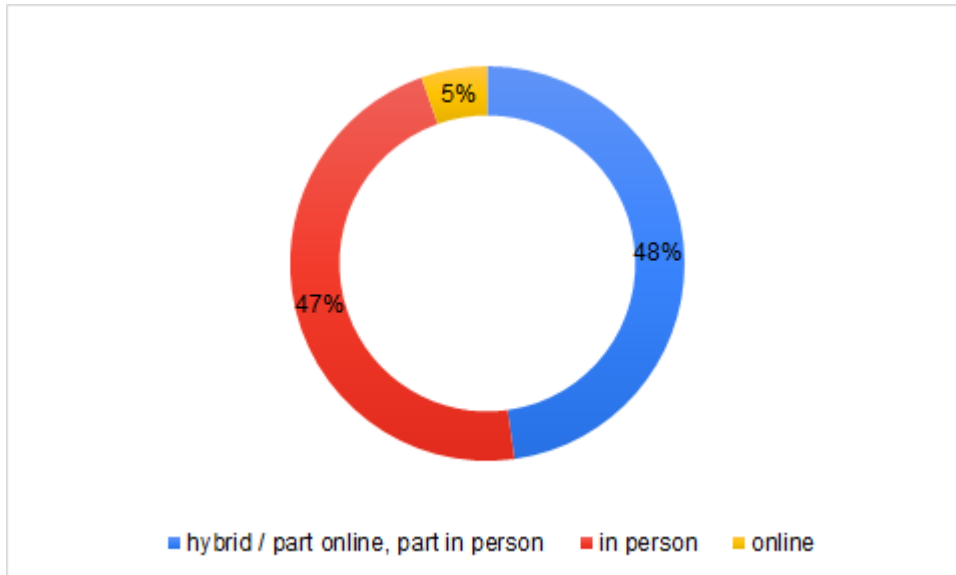
Note: English degrees do not usually include a fourth year of study.



Pic 3. Year of study.

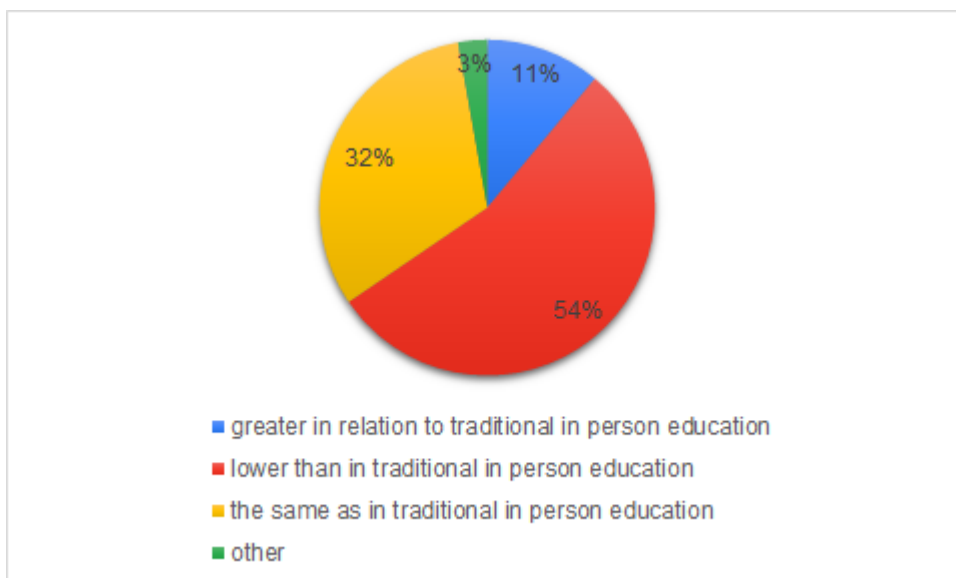
Almost 90% of respondents indicated a Bachelor degree as their level of study. Students represented many fields of study like Design, Art, Fine art, Computer science and many specialities.

The most important issue is how students evaluate their experience of online learning. Most students thought that hybrid education (48%) and in person education (47%) are the most effective. Only 5% of respondents thought about online education that way.



Pic. 4. The most effective education taking into account 1.5 years of experience

Over 50% of respondents indicated that their expectations for online education from the perspective of their own experience of the past 1.5 years are lower than in traditional 'in person' education. But almost 1/3 of respondents had the same expectation for online education as in traditional in person education.

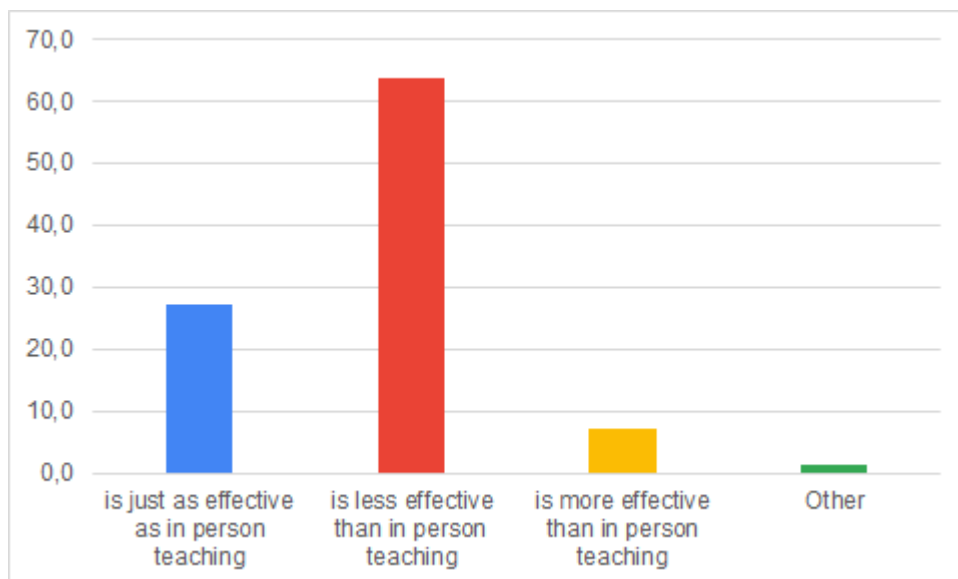


Pic. 5. The expectations for online education from the perspective of your own experience of the past 1.5 years

Other answers:

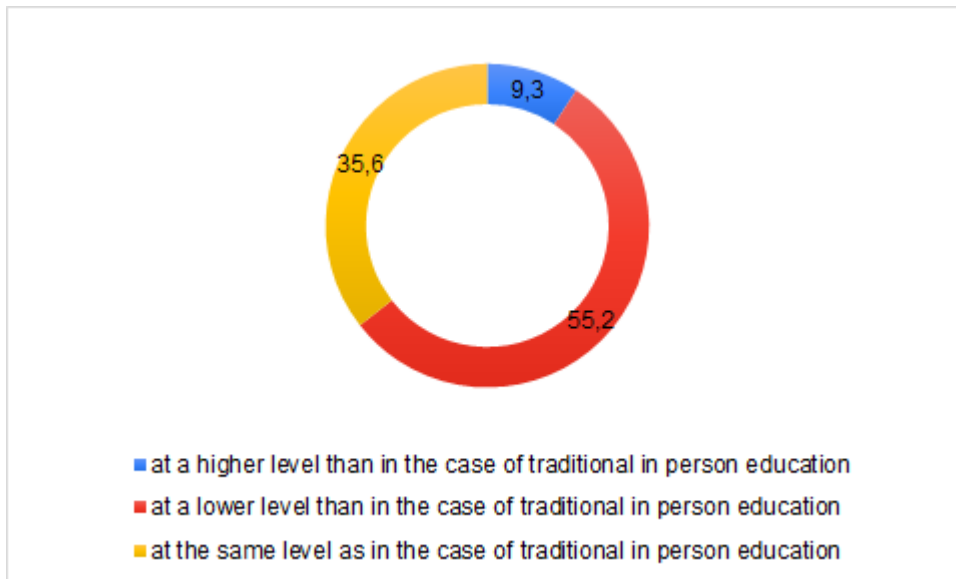
- For lectures or in individual projects, where more emphasis is placed on individual work, distance learning definitely prevails, but in the activities requiring group work, in person education is better
- It depends on course
- The hybrid is the best
- I do not have expectations for online education

Over 60% of respondents thought that online education is less effective than in person teaching. One of 4 respondents indicated that online education is just as effective as in person teaching.



Pic. 6. The level of effectiveness of online learning from the perspective of the experience of the past 1.5 years.

More than half of the students answered that their motivation to learn was at a lower level than in the case of traditional in person education. But 1/3 of students thought that their motivation is at the same level as in person education.



Pic. 7. Rate of motivation to learn online.

Consistency of students' responses can be seen when assessing their online education experience and their level of motivation to learn. For most students, in person education is the most effective, and they too have noticed the biggest drop in motivation. On the other hand, those who believed that hybrid education was the most effective did not notice a decrease in motivation (their motivation remained at the same level as in the case of in person teaching). Likewise for expectations for online education and its effectiveness. Students who had lower expectations of online learning believed that online learning was less effective than in person education. Moreover respondents with lower expectations for online education had lower motivation to learn. Also, respondents who believed that online education was less effective had lower motivation to learn.

Respondents indicated **advantages and disadvantages** of online education. The most important positive characteristic of online education is comfort of studying from home ($\frac{3}{4}$ respondents). The second most important advantage of online education differs depending on the university:

- virtual learning environment, e.g. access to materials, written assignments, everything in one place, easy contact at BSU, UAL, IADT
- time efficiency at SWPS University
- possibility of performing other activities at the same time at ChNU.

Table 1. Advantages of online learning.

Advantages of online education	Number of respondents	Percentage
comfort of studying from home / or anywhere else (no need to commute)	305	29,1%
possibility of performing other activities at the same time	160	15,3%
virtual learning environment, e.g. access to materials, written assignments, everything in one place, easy contact	143	13,6%
time efficiency	142	13,5%
flexible form of participation in classes	105	10,0%
flexible time management	104	9,9%
expanding digital competences	48	4,6%
wider and more open access to knowledge (family members, friends could take part in the classes)	18	1,7%
other	24	2,3%
Total	1049	100,0%

It should be emphasised that 13 respondents felt that online learning had no advantages.

- I did not see an advantage
- I don't like online learning and don't see any advantages on it
- None of these are positive, online learning was terrible. These are simply the least terrible parts
- I am surrounded by distractions and have no work/life balance. No "advantages" outweigh this fact
- It sucked

1 respondent thought that: "One of these, myself and most of my classmates, do not live in conditions in which online learning is advantageous in person, other than avoiding Covid19".

In addition, students identified several health-related advantages of online education:

- Accessibility for mental health sufferers and chronic illness sufferers
- Benefits of access to people with disabilities

Other important aspects of online learning for students:

- It's amazing having recorded sessions and being able to rewatch the more heavy content.
- Possibility of performing at different classes at the same time.

6 students indicated that they do not have to travel to and from college (financial efficiency, fuel economy and time efficiency) as important advantages of online education.

Hybrid learning was the most effective way of learning for 15% of students who indicated the comfort of working from home as the main advantage of online learning. The same advantage was indicated by 12% of respondents who considered in person education as the most effective.

The table presented the disadvantages of online education. It is worth noting that in all universities no direct contact with other students and with the lecturers was indicated as the most important disadvantage of online education.

Table 2. Disadvantages of online education

Disadvantages of online education	Number of respondents	Percentage
no direct contact with other students and with the lecturers	243	22,6%
difficulties with concentration	184	17,1%
lack of motivation to work/study	173	16,1%
no or limited access to specialized workshops, studios and materials	129	12%
"zoom fatigue" resulting from excessive use of the computer and online contacts	108	10%
difficulties with teamwork	81	7,5%
troubles finding the work-life balance	61	5,7%
limited feedback from lecturers and other students	59	5,5%
poor time management / no control over time	28	2,6%
other	9	0,8%
total	1066	100,0%

Among the remaining answers, 2 students thought that online education has only disadvantages:

- all of the above
- I can only select 3 but just know that it is all of the above.

3 students answered: “No disadvantage for me”.

In the remaining responses, the students indicated:

- Not all teachers are ready to work remotely / The lecturers not being prepared for online teaching and not knowing how to use google classrooms etc.
- Tasks scattered on various platforms.
- No access to what's been paid for.

Moreover, students pointed out that online education “Affects on my mental health and my overall attitude towards the course”.

The greatest difficulties experienced by the respondents with online teamwork projects can be presented in the following categories, illustrated by selected quotes from the survey.

Every 7th respondent (15%) did not answer this question.

Table 3. Challenges have you experienced with online teamwork projects

<p>technological/technical problems</p>	<ul style="list-style-type: none"> ● Bad connection. ● Communication can be tricky on voice calls with lag happening and buffering. ● Relying on a bad internet connection means information is often delayed/missed entirely. I feel less able to participate. ● (...) Some have one computer that needs to be shared with more people who also have online classes. ● Lack of proper coordination on the part of the teacher because entering a zoom room for a moment gives little, as after leaving everyone stops participating.
<p>using camera and microphone</p>	<ul style="list-style-type: none"> ● Anxiety with turning on the camera and microphone, and not everyone participating.

	<ul style="list-style-type: none"> • (...) other participants without a webcam and muted like ghosts (...) • People don't participate because they can get away with turning up but making excuses like their camera or mic not working. People are more lazy.
engagement difficulties	<ul style="list-style-type: none"> • Bad connections and crossing over when talking is irritating. Not as natural as in person where conversation flows more readily. • (...) non-engaging, sitting at the same desk (no social/walking around) for hours making me sluggish. Some lectures were so long that there's less time for practical work unless you work with class running in the background. (missing details) • Because you can't be seen on a zoom call, people usually don't participate in things like breakout groups or team working activities.
difficulties with cooperation/ difficulties with teamwork	<ul style="list-style-type: none"> • Lack of live contact weakens cooperation. • Lack of communication, unequal division of tasks, problems with the effective solution of the task due to technical issues. • Lack of interpersonal contacts causing withdrawal, uncertainty as to the group's reaction to our work / ideas, misunderstanding between each other resulting from the lack of non-verbal communication, failure to adhere to the assigned tasks. • Cannot interact directly so results in some team members being less involved. • Communication, people are more likely to do less work as if they're not going to see you in person, there's less guilt about not contributing.

	<ul style="list-style-type: none"> ● I find it a bit boring doing teamwork online. It can be difficult not knowing the people. ● It is stilted and awkward. There is not a connection between people. Creative, critical and intellectual discourse cannot happen in these settings because it is too impersonal. ● Prototyping – no possibility of inspiration between students, no commenting on each other's projects, no possibility of asking "hey, what do you think about that?" ● Colleagues sometimes don't say anything when we get divided into breakout rooms. ● I have experience trying to do teamwork in which many times the teacher would divide breakout rooms with too many students, and most of them wouldn't speak anything - having their cameras and microphones off. It happened as well that one or two students had the microphone off in an environment that was really noisy and no one could understand anything. ● Hard to reach out to people when it comes to contacting them to start a project. ● Not all the teachers give online consultations. ● Lack of motivation of the other students.
Physical aspects of work	<ul style="list-style-type: none"> ● It is difficult to show the physical work. ● No access to physical work space/studio/material.

<p>Health condition & lifestyle</p>	<ul style="list-style-type: none"> ● Sometimes I had to go ahead and try to involve others. Thanks to this, I had to overcome my own barriers. ● Difficulties with self-discipline. ● Discomfort. ● Getting annoyed at the tinny sound. not enough consideration of my needs as an autistic person. ● The awkwardness of being on call with people you haven't spoken to before. ● Classes are usually too long and there are too many classes in a row, which prevents students from a healthy lifestyle (no time to prepare meals, no movement for long periods of time, no fresh air, sitting alone in a room for that long makes me crazy. ● No support/ completely overburdened with extra tasks or responsibilities/ lack of clearly defined working space.
<p>social contact/ social life problems</p>	<ul style="list-style-type: none"> ● Difficult to get in touch with other students. ● (...) No chance to build a relationship. ● Hard to keep in contact, and hard to create a project and work virtually. ● I didn't know anyone on my course until second year because nobody wanted to talk online last year. ● Loneliness. ● No student community, no names to faces, just a non profile pics and texts rather than expressions.
<p>Work and life at the same place</p>	<ul style="list-style-type: none"> ● Everyone's work/life balance at home is very different from each other's and it makes it harder to

	<p>connect or catch someone online than in person.</p> <ul style="list-style-type: none"> ● It's much harder to get motivated. I also find it difficult to take a break, as my desk is in the same room as my TV so I'm confined to the same walls for work and relaxing. ● (...) Some students don't have the right space or technology to have online classes – some live with a lot of people.
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An important question was to identify **an exemplary online learning course**.
The elements of such courses can be divided into several categories:

Organisation of classes

- Using applications like wooclap or platforms such as Miro, Canva, Menti, Jambord, Google documents, Padlet.
- Collaborative work on shared documents;
- Using break-out rooms to create small working teams
- The lectures and talks recorded so I could rewatch and listen;
- Everything you needed were all in one place, all sheets for briefings were online
- Interactive classes
- Additional material: books, videos, links
- Breaks in lectures, an interesting way of storytelling, intermittent breaks for interesting / funny facts, jokes, memes related to the topic, sending access to platforms with an extension of the topic discussed in the class.;
- Hybridised teaching (some online, some in person) offered more flexible work life balance.
- The use of surveys to make the class more engaging. Cameras on, an exercise to warm up (creativity), lecture with elements of discussion is a great idea. An interactive board on which some work could later take place would also be a great solution.

Course content

- The introduction to hybrid models. More theoretical based modules I found most benefited online.

Implementation of classes

- 1:1 tutorials; Friday morning weekly round up with Tutors;
- Work in teams:
 - Each of our modules was split into groups of 4 people and given a 1.5 hour slot. This allows for more personal understanding and feedback of individual projects from tutors. Overall giving you more 1-2-1 feedback than if you were in person;
 - (...) group work in separate smaller groups where the lecturer can consult individual groups, same time for breaks but you can do more during a break online - make food, go outside for 15 mins etc.;
 - Smaller groups of people who were familiar with each other already, taught with interactive activities, everyone having to turn their cameras on and participate, people were a lot more willing to join in, knowing everyone already and small groups made this great.;
- Space to learn and develop:
 - The best experience of an online lecturer I had so far in my course was actually given by someone from Academic Support on reflective practices. She made sure we were all engaged, frequently asking us questions that we could type or discuss what we thought, she made sure we were invited to open our microphones and cameras if we wanted to in order to ask something or make comments.
 - Allowing students to question and explore as well as giving them their own space to learn and develop;
 - Calling on each person in the group until they get more confident to talk by themselves;
 - Creative warm-up, i.e. a simple task to stimulate with the possibility of commenting and interaction, a task to be performed in a group or individually, break again, a creative warm-up to wake up, a continuation of the task or a new task, summary, sharing the effects, a moment for commenting;
 - Given a presentation and task that is then easy to do at home/in the studio, given allotted time to complete then come back and discuss. Similar to Re-Draw workshop or Materiality workshop;

However, the students also mentioned the elements of teaching that should be present in teaching in general, regardless of its form, e.g.:

- Constant feedback from students and lecturers;
- Clarity of the assignment;
- Team meetings/ project briefings;
- Visiting artists lectures;
- The clear layout of class schedules, and what topics will be covered in each class;
- We had sessions where we would talk about each other's work, which I found helpful;
- There were tasks for each topic which ensured the reinforcement of the previously learned information.

Some students postulated:

- All of our classes were better in person;
- Leaving practical teaching for on-campus classes.

Over 50% of students did not use any **additional digital tools** during online education. It was also emphasised once again that "None, because the most important lack was the physical presence in the classes, this cannot be replaced with any functionality of digital tools".

Table 4. The most popular digital tools used by students.

- Adobe
- AudioNote
- Blackboard Collaborate
- Cecalt
- Collaborate
- Codecademy
- DataCamp
- Discord
- Forest App
- Gleen
- Google Apps, Google docs
- iMovie,
- Instagram
- Kahoot
- Library online
- Miro
- MS Office
- Microsoft teams
- Moodle
- Notion
- OBS
- Padlet
- Procreate
- Siso
- Sketchup
- Slack
- Viber
- Vimeo
- Visme
- Wooclap

Students indicated some **missing functionalities of digital tools** like:

- **Only virtual:**
 - Lack of tactility, materiality
 - Access to workshops and materials, technician; all the experience; Touch, realism (When presenting work, physical elements can really bring projects to

life, make them eye catching and memorable, this was something we couldn't have online; 2D work is not the same on a screen as it is in person, there may be a difference in colour or texture appearance and it can be difficult to understand the size of the work).

- Being able to look at other people's studio spaces for inspiration.
- There's nobody to compare yourself to, we only get to see our classmates finished work because showing something below that standard is scary to do online. I always learnt the most from watching the people around me.
-

- **Cooperation & feedback**

- To be more present.
- It is difficult to ask about something in private.
- Opportunities to approach the lecturer and talk about the problem.
- Not enough feedback from the group and from the teacher.
- A way to easily share art and receive feedback without putting yourself in the spotlight.

- **Functionalities of tools:**

- Coordinated calendar
- Appropriate work space.
- Hard for everyone to share, no easy way to save records of the chat, no way to send files in chat, can't pop out chat/video to easily see both.

- **Virtual Reality:**

- VR, it's really great to have VR for online studies. We are able to see objects with many different perspectives through VR and also I can change the class environment to be more effective.
- This might be a slightly unrelated answer but I always think using VR could be good for students. I think it is more engaging than being in online meeting rooms. You can get VR sets that are wireless.

Almost 50% of students did not answer this question or did not know which functionalities of the digital tools are missing. Several students indicated that everything was satisfactory. In addition, several students indicated that some teachers did not know how to use digital tools.

Importantly, the following statements were repeated once again:

- **Nothing can replace access to workshops, tools and materials.** Just like live classes cannot be compared to online classes, when everyone is sitting separately after all and there is almost no sense of community, being together, being in touch, the exchange of views is completely different, shared brainstorming does not exist, more difficult to get creative for students and lecturers, because the online formula is very restrictive. The only plus is that there are the benefits associated with time, but time efficiency and convenience are not conducive to studying design or creating at all.

- None, because **the most important lack was the physical presence in the classroom**, this cannot be replaced with any functionality of digital tools.
- In the case of lectures there is no major problem, but when there is a **discussion nobody feels like participating actively in** it and usually it's the same one person talking, but it is not a matter of tools, but what we do.
- **Working in physical workshops and experimentation is key in** an art course and we weren't able to do it.

The lack or limited access to specialist workshops was indicated as one of the most important disadvantages of online education during research. For over 1/3 of the students (35%) it had a negative effect, because they could not develop the projects correctly. 31% of students thought that it affected their project both positively and negatively. It did not make a difference for 15% of students. Only 22 students (per 388) noticed the positive affection of lack or limited access to the workshops. It stimulated their creativity during the designing process.

Table 5. Affection of lack or limited access to specialist workshop

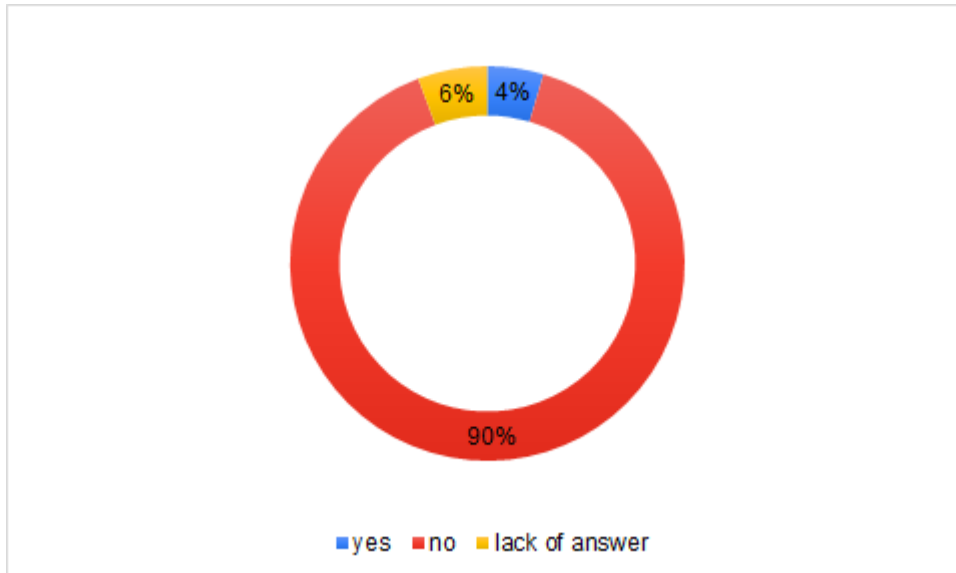
Affection of lack or limited access to specialist workshop	Number of respondents	Percentage
negatively: I could not develop the projects correctly	136	35,1
both positively and negatively	121	31,2
it did not make a difference	60	15,5
no answer	48	12,4
positively: it stimulated my creativity	22	5,7
negatively: I could not develop and finish projects properly which lowered my motivation	1	0,3
total	388	100,0

Students who found in person education the most effective way of teaching assessed the lack of or limited access to the workshops negatively: they could not develop the projects correctly. In turn, the students who considered the hybrid to be the most effective model noticed that lack or limited access to workshops influenced both positively and negatively on their learning.

Also, students who had lower expectations about online learning after 1.5 years of experience noticed a negative impact of lack or limited access to workshops. In contrast,

students who had the same expectations found that the impact of the limited availability of the workshops was both positive and negative. Students for whom online learning is less effective than in person education assessed negatively lack or limited access to workshops.

The last question was whether students have ever used **immersive technologies in online education**. Only 18 students (per 388) used these technologies.



Pic. 8. Frequencies of using immersive technologies in online teaching.

10 respondents using immersive technologies considered in person education the most effective method of teaching. In turn, for 6 hybrid education is the most effective way of learning. 11 respondents using immersive technology find online learning less effective than traditional learning, 4 as effective and 3 as more effective.

It is interesting to know what experience with using immersive technologies they had. They had both positive and negative experiences.

Once again, the advantage of in person teaching (even with the use of immersive technologies) over online teaching was emphasised: "I enjoy it less than in person teaching".

Positive:

- It's a new way and a good way to learn. Easy to review and the sound is more clear than in person. I really like this method. And when I join the 1 to 1 tutorials it's easy to see more people's design work clearly on the screen and I have got more inspiration from that.
- (...) It would have been nice to be taught about creating virtual exhibitions, or rather virtual spaces for exhibitions.
- Creativity, excitement, willingness to create.
- Surprisingly fun and engaging.
- Extremely astonished with the technologies.

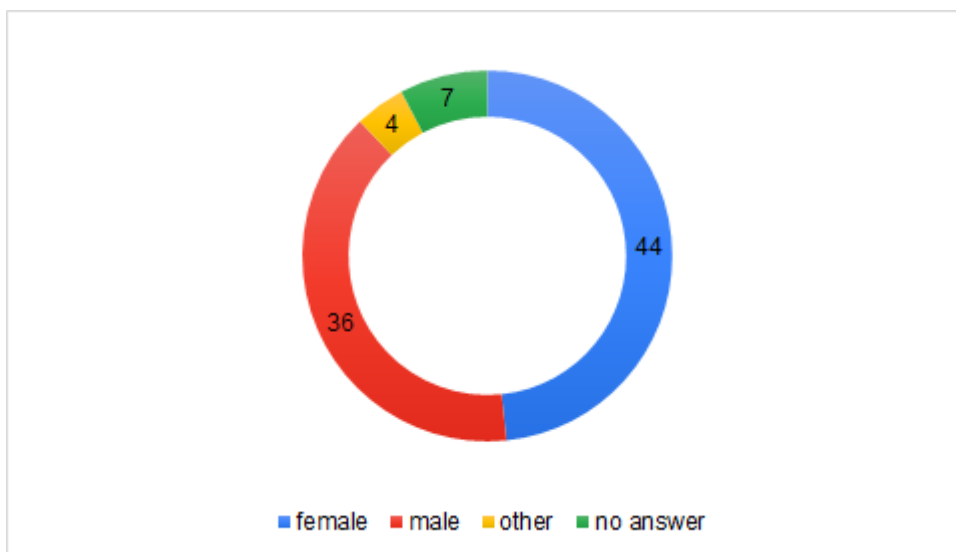
- Great.
- I thought it was quite good.
- It was quite the learning experience but I got the hang of it and now it is quite relaxing.

Negative or rather negative:

- Not great, stressful;
- Not ideal;
- Can't focus at all no matter how hard I try;
- Boring, shallow;
- May be more efficient.

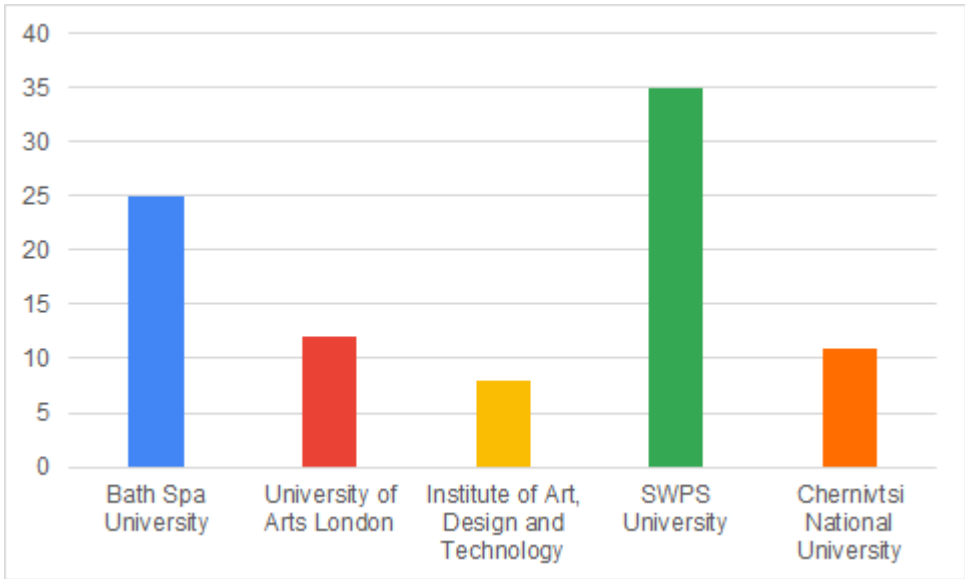
2.2. Characteristics of research and data analysis – teachers

Research was conducted between December 2021 and January 2022. We used online surveys as a research method. 91 teachers took part in this survey. 44 women, 36 men, 4 respondents answered “all possible sexes” or other, 7 respondents did not indicate their sex.



Pic. 9. Sex of respondents.

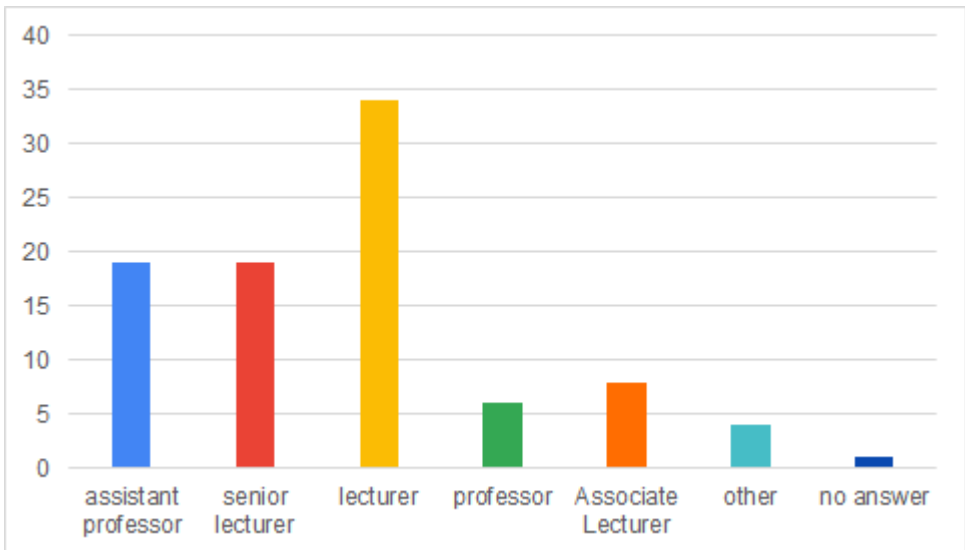
Research was conducted in 5 universities across Europe. This graph shows the numbers of teachers who participated in the survey.



Pic. 10. Number of respondents according to universities.

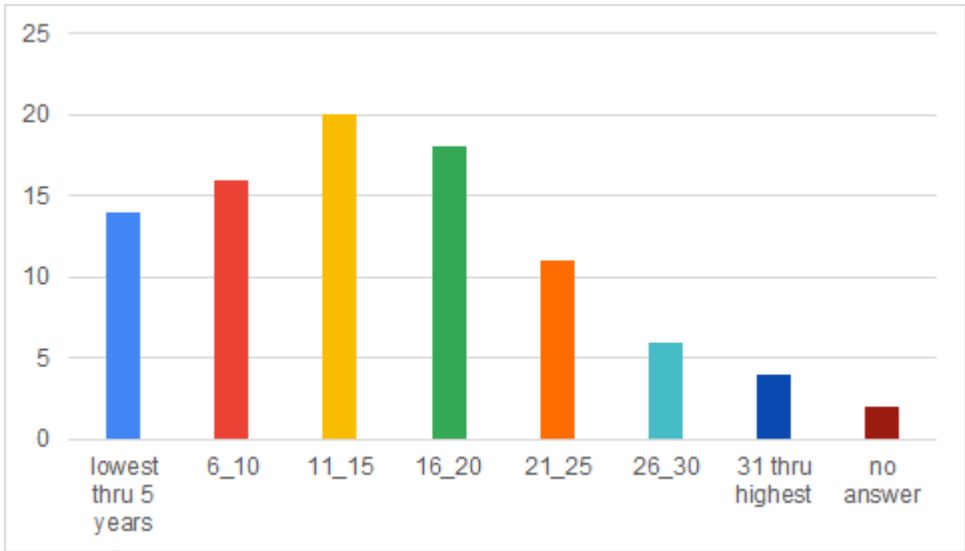
Respondents teach at various faculties such as: Design, Fine Art, School of Art, Department of Architecture and Town Planning, Technology and Psychology.

Most of the lecturers described their position as lecturer or senior lecturer (52 people in total). 1 respondent did not answer. 4 respondents indicated other answers such as: coordinator, technician, manager, producer.



Pic 11. Academic position

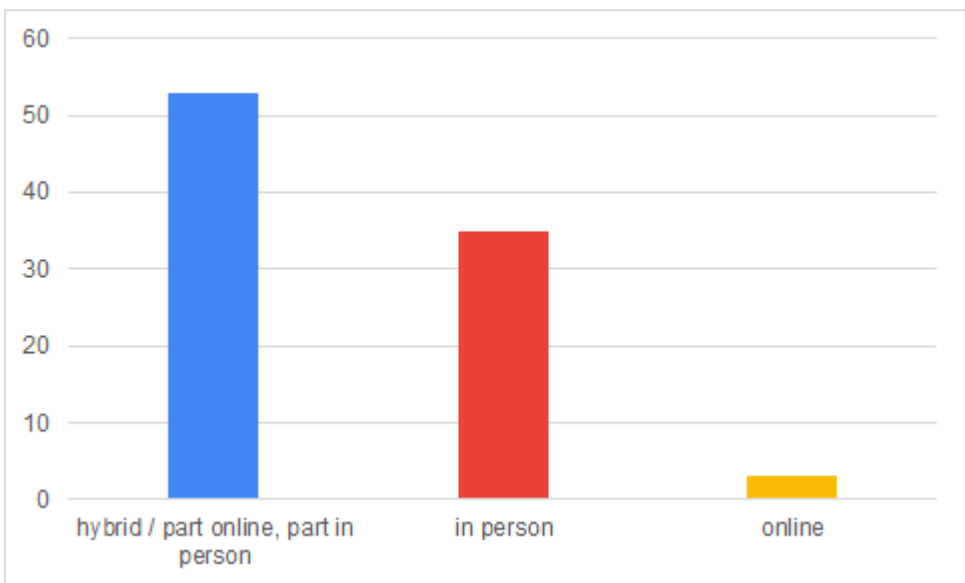
The average teaching experience is over 15 years. Most of the respondents have 20 years of teaching experience. The shortest teaching experience is 1 year, the longest 45 years.



Pic.12. Teaching experience.

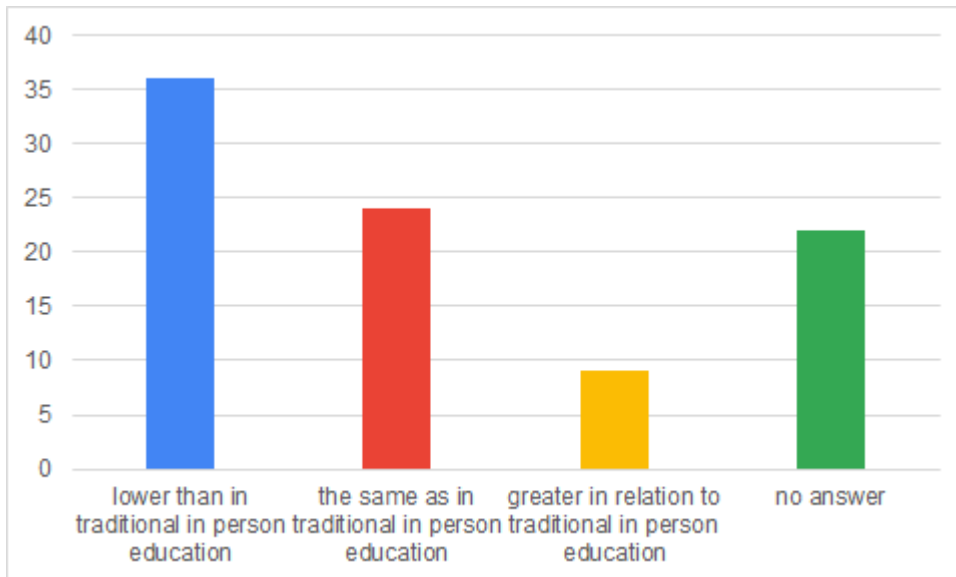
The respondents were asked to provide the specialties they teach. Some lecturers gave specific names, e.g. Art, Ceramics, Domestic Design, Fashion Design, Communication Design, Industrial Design, Fine Art, Biodesign, Filmmaking, Graphic Arts, Textile Design, Interior and Spatial Design. Others indicated only the year and level of studies, e.g. 2nd Yr BA.

More than half of the respondents considered the hybrid model of teaching to be the most effective after 1.5 years of the COVID pandemic (most among SWPS – 25 respondents). For 35 respondents, the in person model is the most effective (the largest number of respondents from BSU – 14 respondents), and only 3 people indicated online teaching as the most effective (from BSU, UAL and ChNU).



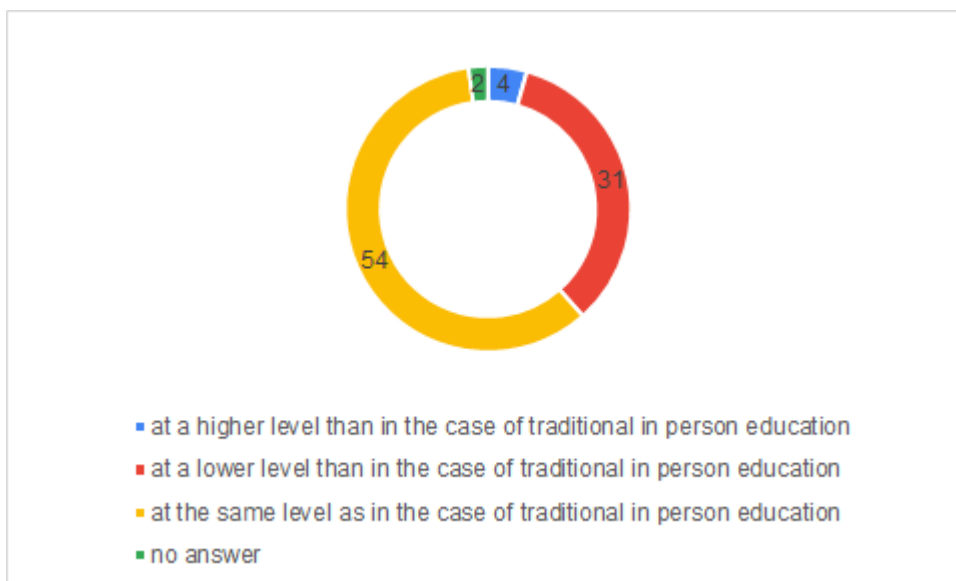
Pic. 12. The most effective form of education.

From the perspective of 1.5 years, teachers most often have lower expectations for online education than in person education (36 respondents). Only 9 teachers have greater expectations for online education in relation to in person education.



Pic. 13. The expectations for online education from the perspective of your own experience of the past 1.5 years.

More than half of the respondents believed that their motivation was at the same level as in the case of traditional in person education. However, for 1/3 of the respondents the motivation to work was at a lower level than in the case of traditional in person education.



Pic. 14. Rate of motivation to teach online.

The higher level of motivation was marked by lecturers whose teaching experience is between 1 and 20 years, who lectured at the University of Arts London (3 respondents) and SWPS University (1 respondent).

Respondents indicated advantages and disadvantages of online education. The most important positive characteristics of online education was comfort of working from home / or anywhere else (no need to commute) (BSU, SWPS, CHNU) and virtual learning environment, e.g. access to materials, written assignments, everything in one place, easy contact (SWPS and UAL). Most respondents from ChNU and IADT chose expanding digital competences as one of the most important advantages of online learning. Flexibility of contact with students / form of conducting classes was chosen as one of the most important advantages of online learning at IADT.

Nobody indicated “wider and more open access to knowledge (family members, friends could take part in the classes)” as an important advantage of online teaching.

Table 6. Advantages of online teaching.

Advantages of online teaching	Number of respondents	Percentage
comfort of working from home / or anywhere else (no need to commute)	65	26,9%
virtual learning environment, e.g. access to materials, written assignments, everything in one place, easy contact	44	18,2%
expanding digital competences	29	12,0%
flexibility of contact with students / form of conducting classes	34	14,0%
time efficiency	31	12,8%
flexible time management	14	5,8%
possibility of performing other activities at the same time	10	4,1%
other	15	6,2%
Total	242	100,0%

Moreover respondents indicated additional advantages that we can present in such categories:

Technical and organisational

- Names and surnames visible next to the "heads", which made it easier to remember the students.
- Context journals online worked well.
- Using my own computer.

- Quick one to one information chats where effective with time/speed and ease.
- Not committing to travel to meetings that are then cancelled by the other party / parties.

Social relations:

- Possibility of contact with the student despite quarantine.

Health and well-being:

- Some students feel more comfortable participating in an online space than in person.
- Introverted students benefited from the time and space created in online sessions. Their participation and contribution to sessions noticeably increased. Some students appeared to benefit from the agency that online sessions afforded them in relation to their own time management.
- Safety.
- Opportunity to flatten hierarchy of mode of delivery.
- Less distracting than in-studio teaching.

Online work as a significant form of designers' work

- Consistent with the realities of the designer's work, at present designers use the online form a lot and students should learn to find themselves also in this form of work; there was a good attendance in my classes and I had the impression that it was influenced by the fact that students could connect to the university, but also e.g. from their family home, even from another country, from anywhere.

It is worth noting that only 1 person did not see that there are any other advantages within our subject area.

The respondents also pointed to the disadvantages of online learning. Most (27%) respondents selected “no direct contact with students” and 19% of respondents highlighted “zoom fatigue” resulting from excessive use of the computer and online contacts (most responses from UAL). Nobody selected poor time management / no control over time.

Table 7. Disadvantages of online teaching

Disadvantages of online teaching	Number of respondents	Percentage
no direct contact with students	70	27,6%
“zoom fatigue” resulting from excessive use of the computer and online contacts	49	19,3%
noticeable lack of concentration among students	39	15,4%
difficulties with conducting teamwork projects	25	9,8%

no or limited access to specialised workshops, studios and materials	25	9,8%
troubles finding the work-life balance	21	8,3%
lack of motivation to work	13	5,1%
other	12	4,7%
Total	254	100,0%

In addition, 12 respondents identified a few more disadvantages of online learning, which we can present in such categories:

Technical and organisational

- Almost all the applications are not accessible by design – moodle, teams, padlet, miro and others.
- Discipline needs space for making and exhibiting.
- Time required to make online learning. materials such as video lectures, labs that can be done remotely.
- No contact with the physical model.

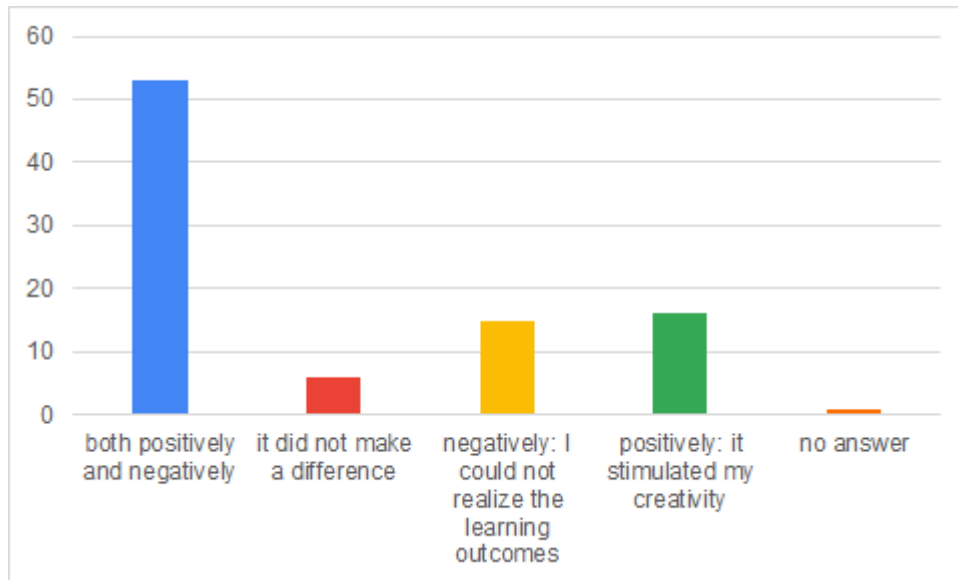
Cooperation with students

- Students are hesitant to share work in progress before they have it to a finished level. This makes it difficult to pinpoint any errors or inefficiencies in their process.
- You don't have any insight to what the student is experiencing or doing at the same time. They may simply be watching whilst doing other activities. Often it feels like students feel it is simply enough to receive information rather than to actively participate. A model students seem to have adopted after working this way for over a year.
- For some students the screen was another barrier for their learning, their perceived accountability and engagement in sessions shifted and they could not maintain focus. Other students experienced impact in relation to their digital needs, access and provision; some students just did not have access to good internet connections, sessions sometimes having to be attempted on phones where screens are too small. Dealing with materials, objects, sculptures, sound in physical spaces were hugely problematic and many resorted to safe work and restricted their methods and ideas.
- No way of ascertaining if students are genuinely "present" – online teaching makes it very easy for students to fake attendance.
- Social elements are severely compromised, difficult to identify students (faces to names etc).

Meaning of our work

- Students refusing to use cameras and microphones – so removal of interaction – feeling like you were talking to yourself.
- Lack of feedback from the lecture listeners means that you lose the sense of purposefulness of your own actions.
- Polarised approaches to OL teaching – some students want only this, others demand in person teaching.

For most teachers (53 people) online education affected the content of their classes both positively and negatively. For every 6 people, this influence was positive - it stimulated their creativity. For 15 respondents, the impact was negative: they could not realise the learning outcomes. Only 6 respondents did not notice a difference.



Pic. 15. The impact of online education on the content of classes

The respondents who considered hybrid education as the most effective model of teaching indicated both positively and negatively (32 respondents) and positively (13 respondents) impact on the content of classes.

Both positive and negative effects were noticed by the respondents whose level of motivation to work remained at the same level as in the case of in person education. The same level of motivation was also indicated by the largest number of respondents who noticed the positive impact of online education on the subject matter of classes. The negative impact of online education on the subject matter of classes was dominant in the group of teachers who assessed their level of motivation as lower.

Most respondents with lower expectations of learning online from their own experience of the past 1.5 year pointed to both positively and negatively (19 respondents) and negatively (13 respondents) impact on the content of their classes. But test subjects who had higher expectations saw a positive effect.

Respondents described challenges they have experienced while designing/planning and conducting online teamwork projects. Below are the main challenges broken down into categories:

Technical/Technological

- Poor Internet access (mine or students); no control over this aspect; some students fail to turn on the cameras; lack of knowledge of tools (platform dedicated to classes,

difficulties with joining) / Different access from different students - Mics don't work, cameras don't work, can't share work, can't log on etc

- As of today there is a problem with the provision of technical equipment.
- Encourage students to show their faces so that we can get to know each other.
- The need to show miniaturised works, difficulty with understanding and pointing to a small model.
- The most difficult thing is that when I divide students into groups and ask them to work together during class, I cannot control what is happening in all groups at the same time, as I do when I stand between 4 tables where 4 groups work.
- Team members often don't talk to each other. Even in online breakout groups, people keep video and microphones off. Collaboration is very difficult.

Cooperation and engagement:

- Group dynamics: the same people talk, the same people are silent.
- Without eye contact and with generally a camera off approach from students in a group situation it can feel like talking out into space, harder to involve everyone and more difficult to gauge engagement.
- Students are disengaged, they leave the workshops, they don't engage, they 'ghost'. Some are too shy to speak/turn the camera on.
- Students feeling isolated and so not interacting with people online.
- Online teamwork can be even more challenging than traditional collaboration. It requires greater concentration and discipline from participants in the process. In most cases, however, teamwork proceeded without major obstacles. The basic challenges are the synchronisation of students' calendars and often the lack of responsibility for joint projects.
- Students were often unable to organise themselves in groups outside of class, they were not able to work in groups online. Their work outside of the classroom was a problem. This was surprising to me because I thought this generation was much more "online" than mine ('82).
- Maintaining interest and contact with students.
- No contact with a living person, i.e. no non-verbal feedback from the group.
- Getting participants to engage with accompanying materials/docs. Community- much harder to team and community build if participants don't already know each other.
- I am not sure if running breakout groups constitutes "online teamwork projects", but the main problem with breakout groups is that about a third of the students leave the room when sent in to them, and choose not to participate.
- Inconsistent attendance and engagement; poor communication between students who had never met in person; decreased confidence; reduced enthusiasm and interest in exploring new ideas.
- Less possibility of supporting groups, giving feedback, the problem of "disappearing students" – a few active people and ghosts who in fact do not take part in group work / it's easier to see the dynamics of the group in person in the room.
- The translation of a discipline built around analogue processes. The over editing of work by students and a general lack of either productiveness or evidence of process.
- Large online sessions work surprisingly well. The ability to record sessions, live transcripts and have information to hand has been incredibly useful for staff and students. The international access it has allowed has opened up the possibilities of inviting global guests that we wouldn't have otherwise been able to have. Some

online sessions have enabled larger audiences. Chat functions work brilliantly and provide a great record and archive of discussion – useful to go back on. Mute functions have been useful at times.

Preparation of classes:

- As the focus is particularly lecturer based there was a bigger prep workload.
- Adaptation of the technological and design workshop to home conditions.
- Financial problems (not all the students have tablets, desktop computers).
- Material and technical provision.
- Triple lengthening of the lecturer's working time, first of all, preparation of feedback for students, instead of written feedback, in the form of comments to the tasks.

An important question was to identify an **exemplary online learning course**.

A few lecturers gave only the names of the subjects, e.g. Professional Mastery; Control – Physical Computing and Prototyping Intro; Creative Industry Challenge or Games Studio; Drawing Lab on BA Illustration (Camberwell); Life drawing, MA Fine Art, Parametric Design 1; Fundamentals in FA1 (in last case: the online feedbacks were generally better than in person as students had pre-thought how to capture and present their three dimensional work and were more forthcoming using the chat option).

According to teachers the exemplary online learning course can involve:

- **Using various formats during classes e.g. lecture as introduction to class, individual or in groups work and discussion:**
 - I usually start with a presentation and homework discussion. Then I have a short lecture or introduction to an assignment. Then the students work individually or in groups on this task, and when I look into their rooms. At the end, we meet together to present the effects and share what we have learned. Usually, homework is about completing or correcting a task.
 - Connecting elements of work in the forum interrupted by work in groups (e.g. according to the snowball rule – first in pairs, then in 4, then in a larger team), elements of the lecture (max. 20-25 minutes), individual exercises. Enabling the option of editing common files in real time, creating joint presentations (requiring e.g. searching for some projects or taking pictures of objects around them by students), – it all depends on the length of the classes / I had 4 hour blocks, but also classic 1.5 hours.
 - Work in subgroups / rooms on a common board / project, enabling discussion in subgroups and in the forum
- **Classes based on collaborative/group project:**
 - A collaborative drawing project exploring correspondence art and the role of the small drawing in the generation and development of ideas.
 - Weekly group tutorials in which students presented work onscreen and all peers are expected to write critical feedback in a shared Google Doc. Students upload work to shared folders on Google Drive (either prior to or during session). All participants could annotate/markup visuals on screen using the Whiteboard function.

- **Classes based only on conversation or discussion online:**
 - Pre-recorded lecture (or any other material) + (exclusively) online conversation.
 - In my opinion, the online version is best for classes based on specific digital tools. The classes I conducted were largely individual or group consultations. The final effects did not differ from the effects obtained in the stationary version.

- **1:1 tutorials:**
 - Classes that do not require discussion of technological processes. Online works best for 1-on-1 consultations.

- **Organising workshop or studio at student's home:**
 - The students' workshops were preceded by films and lectures I made, showing plant staining. I presented dyeing technologies and the history of natural colours. After this introduction, the students performed at home staining with natural dyes that can be used in home pots: hibiscus, turmeric, black carrot, annatto, tea, blueberries, elderberry. They learned the use of dyes that changed colour: soda, citric acid, vinegar, iron.

- **Guest speakers during classes:**
 - A programme of seminars where guest speakers present their views of being curators today, including how they see online engagement.
 - Online design workshops with external collaborators/practitioners – located anywhere.

- **Using VR during classes:**
 - I taught a Virtual Reality option for cross disciplinary design students. As part of the course they taught each other how to use the program while others watched. We also discussed theoretical and contextual fears and inspirations for VR in specialisms and beyond/across.
 - Yes! Immersion would be great. Model classes are those in which students can create a project together – each of them has its own tasks and mutually support each other in their implementation.

- **Hybrid classes:**
 - Classes start in person, then working group sessions are held online, along with the supervision of the work progress. The last classes are also held in person.

Moreover, there were repeated responses indicating that the best form of teaching art and design is traditional in person teaching: "In light of our specialty exemplary courses could be only in person courses, and at this stage the artistic speciality requires personal presence and working example of the teacher", or "The students would have to have the same materials that the studio has at its disposal".

Additionally, several lecturers did not describe such activities because “I believe that currently I do not have it and need to self-improve” and “I do not have such an example. running online requires a smaller group to achieve a similar effect. It is not possible to give feedback so that the whole group can benefit from it.”

51 out of 91 teachers use one or several **additional digital tools** during online education.

Table 8. The most popular digital tools used by teachers.

- Blackboard Cooperation
- Canvas
- Engage VR
- Frame VR
- GitHub
- Google Apps
- Google Meet
- Gravity Sketch
- Jamboard
- Loom
- Mentimeter
- Microsoft Teams
- Milanote
- Miro
- Mozilla Hubs
- Mural
- Oculus Quest 2
- OBS
- Padlet
- Panopto
- RetroTool
- Slack
- Slido
- TeamViewer
- Unity Hubs
- Worldwall
- Zoom

Missing functionalities according to teachers:

- **Functionalities of tools:**
 - Better coordination across breakout groups; recording controls.
 - Breakout rooms, wipe boards, sharing video more easily with better sound (there's so much discrepancy between student's devices and wifi speeds/types).
 - Broadband reliability, some not intuitive enough – clunky.

- Close up filming of the work in progress during the group session setting.
 - Chat that would allow for quick communication with a group / person.
 - Difficulty of screen sharing for use of visual and moving-image references.
 - Intuitive, simple, predefined but also easily configurable layout (space) for group work.
 - Live interactive screen sharing ie. two people working on the same screen at the same time, I know it's possible but with the tools I've been using it's very much demonstrating my shared screen then have the student share their screen to watch them do what has just been demonstrated. Working in a digital space feels like there's a lot more steps between doing things than the immediacy of in-person work and it feels clunky and slow at times. Working in a digital space requires more time to cover the same amount of content.
 - Synchronous sharing of audio (eg: multiple people speaking as in a physical room). More natural discussion tools. Whiteboards that also provide chronological/timeline templates. Miro is a good pin up board style option but difficult to navigate a timeline of events and offer quick feedback.
 - Quick virtual capture of the student computer image to help solve the problem in the 3D modelling environment.
 - Tools that would correspond to the specificity of the specialty 023 Fine, Decorative and Applied Art, Restoration.
 - Workflows of formative and summative assessment, like time-based feedback and logs of activity, and the ability to flexibly export and share emerging practices beyond the initial application.
 - I dream of a three-dimensional equivalent of the screen. A device that allows one person to quickly model something like clay and the other person can touch it "via the Internet" not only see it.
 - Ease of communication between students and tools for rapid prototyping. Collaboration was slow and missed the spark of working together in person. It was difficult to check in on quieter students and many students felt nervous about being on a web camera.
 - Art, Design and Performance specific platforms.
- **Only virtual:**
 - Debate and discussion, effective analysis of 3D work, lack of touch and tactile regarding fabrications that are key aspects of the subject area.
 - I don't think any functionality could be developed to allow me to handle and manipulate the objects that the students are making?
 - Lack of touch/ materiality and inability to see the work – the screen flattens objects and surfaces. Difficult to see detailed and nuanced approaches to making.
 - The major issues existed in and around the exploration of 3d, physical forms and experiences of physical materials.
 - It's cumbersome and difficult to do any direct teaching, tuition or instruction in practical subjects such as drawing and animation.
 - Emotionality.
 - **Hybrid teaching:**
 - Lack of workable structures and technological solutions for hybrid teaching

with both on campus and online students. General lack of technological solutions for hybrid teaching.

- How to bridge teaching in person and online simultaneously.

One of the last questions was whether students have ever used **immersive technologies in online education**. Only 12 teachers (per 91) used these technologies in education.



Pic.16. Frequencies of using immersive technologies in online teaching.

8 teachers using immersive technology considered hybrid education to be the most effective. Meanwhile, 4 respondents consider in person education the most effective method of teaching.

5 teachers using immersive technology had higher expectations for online teaching compared to the traditional method, 3 of the respondents had lower expectations and at the same level.

In turn, 7 respondents using these technologies had the same motivation to teach, 2 respondents believed that they had higher and lower motivation to teach. 2 respondents using these technologies noticed the negative impact of online learning on the content of classes. 5 of the respondents decided that online learning had a negative and positive impact on the content of the classes.

It is interesting to know what experience with using immersive technologies they had.

Teachers focused on tools they used:

- I have had several experiences with AR using headsets, Google boxes, etc. I've also worked with binaural audio.
- I have taught many VR courses - both theoretical and practical - both about VR and using VR.

- A mix of XR solutions.
- I have used EngageVR a virtual lecture room and met students there/made presentations.
- Worked with students and alumni in WebXR on laptops/PCs and some fully immersed in VR – they all appreciated the new approach and different mode of interaction as many did not want to use Zoom.
- Using AR to visualise projects.
- In 'exhibition' settings.

Besides they described the characteristics of these technologies and how and when they used them:

- Exploratory, interesting and engaging on a personal level. The applications for teaching are less clear.
- I use it for collaborative and self reflection, and currently looking at how to use it to innovate tutorial models.
- Communication with students, colleagues, staff, and professionals external to BSU.
- It only covered basics of AR and was difficult to demonstrate potential or find cross platform options that require minimal hardware setup initially. Opted for A-Frame in the end. Similar issues of how to troubleshoot individual setup needs as you have in-person though. Made more complex by only being able to access what a student screen shares.

For 2 teachers, their experience with immersive technologies is not sufficient:

- I'm still waiting to see a VR 'killer app' for teaching. VR does very nice online exhibition spaces but not much else.
- When we did the demos of the 3d web platforms I found it difficult to think of applications of the technology in my teaching practice. It felt more like finding the purpose for these technologies was a new problem to solve rather than a solution to a problem.

The last question is about using new digital tools in education. Only 7 teachers will not use new digital tools in the future or will not use VR (“(...) I always look for new, useful digital tools. I have no immediate plans to use XR technologies”).

3 respondents do not know or they do not know the purpose of using them yet (“Maybe! I'm open to it, but I haven't a clear idea of how or to what purpose I would use them”).

But 81 teachers want to use them:

- Always open to new tools. Will continue to use Teams for some meetings.
- I continue to use video calls for tutorials. Our students work digitally throughout the course so we do use online collaboration tools including GitHub, Unity, Glitch etc. We use Discord channels for communication and shared Trello boards for project management. Our students develop immersive experiences in modules including VR and AR games/applications.
- No additional tools to the ones I now use. Of course. Quarantine has shown that by using new technologies properly it is possible to improve the level of education.

- Initial digital teaching worked well online and provided specialist input without travel to Bath which we aim to keep. Specialist Masterclasses and talks worked well online and we would also hope to keep.
- Possibly for students' individual work.
- Recording of material to be kept for accessibility. Use of Miro or some way to offer synchronous non-verbal feedback during classes for those who are less inclined to speak up. Digital emulators such as TinkerCAD are also very good and I will keep using this as a first introduction before physical hardware is touched. It aids in the breaking down of each building block required in physical computing.
- Yes, Panopto is pretty good for making lectures viewable offline for flipped classrooms. Slack is good for building a student community and supporting students outside class time.

Teachers would like to either combine digital tools with online learning ("When good hybrid tools and tools for sharing moving image content become available as part of the university provision"), or teach online using VR ("I want to teach a class fully in VR "), or assume that it will not apply to practical sessions ("No for practice sessions ").

Among them, 1 teacher said that he will use digital tools, "(...) but out of necessity enforced by lack of teaching space than choice possible".

Chapter 3. Research report Focus Group Interview

Focus group interviews were conducted between April and June 2022 in 5 universities. Students were interlocutors.

Table 9. Respondents according to university and specialties.

University	Number of respondents	Specialities	Year of study
SWPS University	9	Communication Design (4 respondents) Domestic Design (1) Industrial design (1) 1st year (3)	3rd year (4) 2 year (2) 1 year (3)
Chernivtsi National University	8	Artistic woodwork (3) Artistic metalwork (2) Artistic painting (3)	4th year (2) 3rd year (2) 2nd year (1) 1st year (3)
Bath Spa University	3	Graphic Communication Fine Art Games Development	1st year (2) 2nd year (1)
University of Arts London	5	Curating and Collections Illustration B.A. Hons Illustration B.A. Hons Illustration B.A Fine Art	MA, 2nd year (1) BA, 2nd year (1) BA, 3rd year (3)
Institute of Art, Design and Technology	3	Animation Creative Music Production	2nd year (2) 3rd year (1)

The analysis of the collected data was conducted according to the following categories:

1. Advantages of online learning;
2. Disadvantages of online learning;
3. Online learning challenges (including learning motivation, access to workshops, group work);
4. Future of online education.

The description of the collected data was illustrated with selected quotes of the respondents.

1. Advantages of online education

Among the most important advantages of online education, the ALSA students mentioned:

- Possibility to combine studying with work

- It's often recorded so you can see it whenever it's good for you.
- Expanding digital competences
- No need to commute, saving time and money.
- The comfort of studying from home e.g. distance learning allows students to work in their comfort zone without getting distracted by anything else.
- Opportunity to participate in classes (e.g. person with disabilities)

"I sometimes struggle with in-person. It makes me just feel anxious and stuff. So online has really helped me become further and like to learn more as I can then view it in my own time or view it from the comfort of my own home."

—(BSU)

"It also helps me that I have these deadlines at Classroom and if I do not give up something, it is not given and it is red, and it kind of affects that a person wants to check it off very much. And when you are late, it is also a greater motivation. (...) It's a bit more structured simply when it comes to online."

—(SWPS)

"During the consultation, half of us sat with lecturers, and half of us connected online to talk about the project. And it wasn't a problem that someone was going home by train."

—(SWPS)

"Online classes forced us a bit to learn how to present our works in a more official, let's say, way, to prepare good presentations and talk about it. I think that's a plus."

—(SWPS)

"For me it was interesting that you get to work in random groups (...) you can try to work with people that you wouldn't normally get a chance to work with."

—(SWPS)

"About lectures being recorded, I could just access them later on, if for example on that specific day of the lecture I was feeling like I can't really leave the house, I could just choose not to, so I didn't miss out on anything."

—(UAL)

"I even went back to them this summer to keep refreshing, things that I'd forgotten, things that I hadn't used. I went back over all my notes and all my digital notes and the videos. And I was able to get back on top of things."

—(IADT)

"And I could type up my notes as I'm watching or I could handwrite my notes, whatever way I wanted. Like I've been back over a lot of Jack's classes, just to make sure that I was refreshed before I came in to the, I wasn't kind of lagging and asking a hundred questions that have been answered before. Yeh, it was brilliant"

—(IADT)

"I find it easier to actually speak or ask questions as I would in person, because in person I would be more overwhelmed or shy, but online, I don't have to be trying to read the room as much because I can't see it."

—(UAL)

“Since online learning, I think it has been easier to access different lectures and I got very excited at one point that I can be at so many different lectures, so there were times when I was in two lectures at once.”

—(UAL)

“It kind of gives you an insight into professional-like behaviour and environment if they're online and how you work in the future. And whereas if I guess, online learning had never happened, I would never have used slack and I had never downloaded teams before.”

—(UAL)

“(…) I was in and out of hospital the first year, just on and off. And then the summer, I spent a good chunk of time in there. But it just meant that even on those days, it didn't matter. The lecturers didn't care. I was present, I was asking questions. Even if I have to mute myself, it didn't matter. I was still there. Yes. Which is the whole beauty of what I was, like, doing animation. Even when my legs and stuff aren't doing so great, I can still do my job”

—(IADT)

“(…) And there's one girl in our class is deaf in one ear. So she was like, this is brilliant. I can hear it. I can put headphones on it, turn it off. Because in class she would actually have to sit with her good ear. She'd sit right beside where the lecturer was, to hear. She didn't have to do that at home. She was like, this is brilliant. I can hear everything. Everything is great”

—(IADT)

“By studying remotely, I do not have to expend energy on these things. In fact, I flourished in ways I hadn't anticipated. For example, online lectures eliminated most of the usual social cues, rules and body language that I find hard to decipher. Remote studying gave me space to participate without having to focus on the hundreds of other social communication factors such as making eye contact, knowing when it is my turn to speak (I could raise my virtual hand), sitting in a socially acceptable way (Autism can affect posture and proprioception) and engaging in soothing self-stimulatory behaviours without fear of being judged. I surprised myself at how active I was in discussions. Usually, I would be cowering at the back of the room”

—(BSU)

2. Disadvantages of online education

Among the most important disadvantages of online education, the ALSA students mentioned:

- **Isolation**

“(…) I didn't feel part of the university community anymore. I felt isolated from it.”

—(BSU)

“It was quite isolating, I guess. I think a big part of creative processes for some people is kind of having a community to work within and to support you through things. And sometimes last year it felt quite lonely, and I was the only one struggling with certain projects, even though that wouldn't have been the case.”

—(UAL)

“But again, if it was something like hybrid leaning, perfect.(...) like it was, it was great to get back in though and to actually be around other people and to listen to what they, what they do and don't like about class I just see somebody freaking out in a corner and I go 'oh, I'm not alone' or I see someone really getting on with stuff and you're kind of 'okay, I've missed something' and then being able to go and ask.”

—(IADT)

“(...) one of the girls, spoke for the first time ever in front of the class, two weeks ago, and then she wasn't giving a presentation I mean, she asked a question, and that is like, it has taken her two years to get over that because it was online, and she's not even the only one, she used to use me as a puppet, I'd be asking questions for four people, like really because they were so nervous about...(...) they're really coming out of their shells, more than they could the last few years because we're here together, four days a week. But, it was like pulling teeth. Like people are really struggling because I think our year, because of what we do a lot of people are introverted or on the spectrum and it makes it like a hundred times harder”

—(IADT)

- **Difficulties in establishing relationships, cooperation**

- Lack of socialisation with the teacher and groupmates, lack of verbal contact.
- Lack of live communication with the teacher and groupmates, lack of discussions, advice, and emotions.
- No involvement. They just watch a recording later.
- No pre-meet with the colleagues. Online is more formal in a way.

“It's very difficult to connect with your fellow students when you're online learning. It's very much like you're all faces on a screen and you're all there to listen to the lecturer. That's about it. There's very little collaboration, there's very little friendship and camaraderie going on there.”

—(BSU)

“Also, there's a danger that people don't turn up. They think “I can watch the recording later”. So they don't get involved in the whole thing, they don't get involved in the discussion. They just watch a recording later.”

—(BSU)

“I do not know if online education has a negative impact on our projects, but it certainly affects the pleasure of studying. Because it is also very important in studying that sometimes it is just fun to work. And it seems to me that contacts, eye contact, such rituals: breaks, etc. are very helpful.”

—(SWPS)

“When I listen to stories from the previous years of people who have classes with the same lecturer that we had online with, and now they have in person classes, I regret so much how they go about it that sometimes I even joke that I would not pass, just to be able to experience it. It is somewhat sad that these relations have not been established.”

—(SWPS)

- **Time management**

“Time management is the main disadvantage, sometimes it is difficult to find a certain amount of time for a specific task. At home there are many distracting factors. When you have in person classes, you know that you have to attend those classes, you have a set schedule and you are set on working consistently, whereas remotely those factors are neglected and are overshadowed by other outward problems and issues.”

—(ChNU)

- **Performing tasks and evaluating them**

- Not always access to tools available in the workshop/ studio that need to be used to physically execute work.
- Difficulty with technical and material supplies, no access to the tools and machines available in the workshops.
- Lack of objectivity in the evaluation of works, as it is harder to perceive the executed works online.
- Lack of live consultations with teachers.
- Inability to practically perform artistic woodwork, metalwork.

“One of the biggest disadvantages for me was definitely when I had to do concept art, and it was trying to connect with the lecturer and having the lecturers show me what they meant, because over a screen they can't draw something down on a piece of paper and then show me. They need to draw it and then take a picture, post it. I would then need to load it; there was this whole process to go through and it created that disconnect between the lecturer trying to show me how to achieve something and me actually doing it.”

—(BSU)

“My thing is that if it happens online, I have some reluctance to give out, ask questions, etc., where it was live, I think I would be more courageous, so I just don't know what it is causes, but somehow I have a fear of turning on this microphone and I'm a bit paralyzed by the fact that suddenly there is silence, that everyone can hear only me (...)”

—(SWPS)

“If you didn't know how to do something, there was no such physical contact that the lecturer simply came up and showed – no, here you have to bend it, pin it this way (...)”

—(SWPS)

“I also had situations when I had group projects and the Internet was failing. And there was nothing I could do. And it was a bit stupid that everyone was doing something and I couldn't, but then I felt so helpless because I didn't have the Internet and I couldn't do it.”

—(SWPS)

“I guess a con that is very niche is that the technology can fail you, which is such a massive part of online learning and the stress that can come from that is just unbelievable. If you don't have the right equipment and you don't have accessibility into a university. (...) It's very stressful and it means some students over others might thrive in that environment, whereas others would struggle.”

—(UAL)

“(...) But that was the only thing that worried me in first year was, the stuff that I'm doing here, at home and am I teaching myself the wrong things you know? If I had someone over

my shoulder, would they be telling me, you know, you're drawing from the elbows, or the shoulder or, that was something I really craved"

—(IADT)

3. Challenges of online education

The biggest challenges in studying design/art online were related to:

- **Access to workshops, studios, technology**

"Like here in Locksbrook we've got huge printers and scanners, we've got all the teachers that come in with all the resources, we've got screen printing labs and if we were studying online, we would have none of that. And it would be much more difficult to grasp the concepts especially if you're more of a 'doer' learner than a 'hearer' learner. If that makes any sense?"

—(BSU)

"Considering the specificity of the learning process, to learn art online is quite problematic in any case because in this process you want to be here, near, now, and to be constantly in movement, and studying online is difficult and impractical, it is like "surgery" performed online, art needs to be taught 'here and now.'"

—(ChNU)

"One of the biggest challenges was accessibility to technology. We had to cancel two modules in a 3D course that I was doing, because not enough people had access, like they didn't have access to a device that was capable of doing 3D modelling or 3D rendering. There were some people that didn't even own a laptop, all they had was their phone or a tablet. This wasn't really sufficient to continue with the course. So there had to be a major overhaul of the whole semester."

—(BSU)

"I feel that this switch from having a physical exhibition to an online exhibition was so quick that not everyone got to catch up on the necessary skills."

—(UAL)

"I think there are just some certain skills, like printmaking, that are basically impossible to do online because it is so tactile and so practical, and you do really need those hands on experience to learn it."

—(UAL)

"With not having access to so many tools, we had to come up with different ideas which were very creative on their own. But I'm not sure if that's a good thing because it was just like us trying to adapt and us trying to get some results in this current situation, but it wasn't like a playful, joyful kind of experience. It was just like everyone being stressed and isolated."

—(UAL)

- **Self-discipline and self-organisation, time management**

“Self-organisation, it was a fast leap into a completely different direction of obtaining information.”

—(ChNU)

“I get endlessly sidetracked when I'm in an online lecture, in my own space, because I keep on looking around and seeing like, oh, I need to clear up those dishes later. Oh, I need to like planning out the next steps in my next project because I can see like the notebook that I used to plan it over the corner. I'm like, oh, is the camera looking okay? So I turn the camera off, a lot of people have the cameras turned off. And it's just the endless stream of stuff that my brain is doing while I should be focusing. I end up absorbing a lot less information because of that.”

—(BSU)

- **Motivation**

“Online learning had a negative effect: lack of motivation, lack of communication among peers, online learning dulled the communication and inspiration effect.”

—(ChNU)

“Two out of ten. I really don't mesh well with it.”

—(BSU)

“Online learning decreased students' productivity, skills, it was easier to work with peers face to face.”

—(ChNU)

“I have the impression that online is also a bit more tiring for me when the webcam has to be on. And all the time I catch myself looking at my face all the time and sort of flying away, I don't know what I'm focusing on, not necessarily on my face, but seeing myself, I don't know, somehow it tires me in some way (...)”

—(SWPS)

“I found that my motivation really plummeted, especially last year because I was in a kind of boxy student halls room and going between like my bed to do work because I would have to do my art on my bed and then between going on my computer, it kind of felt like for the whole day I was just going in a little circle in my room.”

—(UAL)

“I felt like I didn't know what I was doing. I still don't know what I'm doing, but I feel a little bit more confident. It's like, right, well, I understand these things. So something's clicked when I came back this year. Something was different. And I felt like, okay, well, I understand what I'm doing now. But it was hard to quantify because it was initially like, we don't know what they know. They seem to know everything. We know nothing. Are we being taught the right stuff? Are we being taught anything at all? We were. It was just different. It was just different.”

—(IADT)

- **Design process, learning process**

“Time of achieving the set aim and desired result significantly increases during online learning, more time is needed on realising and processing the mistakes, certain results are reached through errors and corrections, which would have been achieved easier with the teacher’s assistance.”

—(ChNU)

“The way the online learning is delivered definitely has room for improvement, in terms of the platforms that are used, and the way information is delivered and how that information is organized. So sometimes we’d get lots of different bits of information in lots of different places. It was hard to keep track of things.”

—(UAL)

“I just felt like I was on my own in the experience. Needed more one to one from my point of view because the group sessions were quite isolating because no one was speaking.”

—(UAL)

“So in a blended tutorial workshop where I had to attend online I joined via teams on my tutors laptop and was essentially being carried around the studio by my tutor which was a completely bizarre experience. But I also felt like there was effort made, for me and one other student online. There was effort made but we were kind of a side note (...).”

—(UAL)

“Some of the feedback, sometimes. Certain lecturers were awesome with feedback? Trying to remain in contact, like they’d check their emails constantly? You know? And they’d give you slots, here’s a spreadsheet, with the time? If you can’t make this time, let me know which time suits? Other lecturers who might not have been as tech savvy, or just don’t check their emails as often. You could be like a week? The deadline has passed. I really need you to answer like? (...) You might find yourself halted, you don’t want to go any further with something, in case you’re completely wrong? You just, don’t know what to do next?”

—(IADT)

- **Work/rest space**

“I don’t mind saying I’m autistic. I need my routine. I need my schedule. If I diverge from it, I can’t function properly. A big, big problem with me was taking away that thing of travelling onto campus to do your lectures and then coming back home. The home space is where relaxing gets done and the campus is the workspace where work gets done. Suddenly like home is the space where work gets done, and then no work gets done because it’s a relaxing space. Like getting the rigid thinking to process that this space is now where everything happens. I sort of just have to deal with that. It was a huge, very, very steep learning curve for me personally.”

—(BSU)

“So I have autism, that was apparent with my hands waving. And when online lessons first started, I found it really difficult to change my entire routine, to get into the flow of joining an online lecture at 9am and staying in that frame of mind until the end of the day. It was quite difficult because I was sat at my desk where I relaxed, I played video games, I did my own personal projects, and I would often get sidetracked. Mid-lesson I would start working on my

own stuff. And it was that whole, not having somewhere to focus and do my work that really hindered my process online.”

—(BSU)

“The consequences of online learning, like those of COVID-19, were not distributed equally. I was, and am, in a position of privilege; I had enough space at home in which to work. I had my laptop with a good WiFi connection and could create a comfortable working environment. For the most part, I also had the financial means to source my materials as needed”.

—(BSU)

- **Teamwork**

“The advantage was a possibility to contact any students at any time, the response was very fast. It was harder to discuss certain topics because it was still easier to communicate face to face.”

—(ChNU)

“(…) but the benefit is to be able to contact each other very fast and easily.”

—(ChNU)

“Drawback is that distance learning allows us to be apart, but when teamwork is required mainly you need to be together, so organisation issues arise (…)”

—(ChNU)

“Ability to contact anyone very fast, however, lack of response at times, it was easier to ignore communication online than in person.”

—(ChNU)

“Being thrown from a 50 in person class to a 150 person online digital class, the chances of someone standing up and voicing their opinion is so slim because it's quite stressful, when you are talking to 149 people. So, I found that it wasn't very talkative or collaborative online at all.”

—(UAL)

“Where I've done like a breakout it's like complete silence for a while because no one says anything. It's like you didn't even know who these people are because they don't have their cameras on. It's quite stilted and quite awkward, sometimes. Not a lot happens with most of the chat rooms.”

—(BSU)

“People promised them to do stuff and not doing it and starting it two weeks ago”

—(IADT)

“This is an online thing? No, I got lucky. My group was pretty good, and the ones who were sort of quiet, I would just chase them and they'd messaged me probably even if you can tell the group this? (…)

And as a group, it went down really well. We all did our parts. We even did scriptwriting with Teemu mostly online. Our team, we don't think we ever did that in person. And we had, like, kind of peer groups. We worked in little groups so that we would read each other stuff and critique it. And that all went well. But it was the same. Should you get in person, people saying they're going to do something and they don't, or just ghosting

you completely, even in person?”

—(IADT)

- **Digital and practical tasks**

“Digital tasks were easily delegated and shared, but for practical assignments, it was quite hard to share work (for example, execution of vytynanka (the art form of papercutting) for creating practical, physical objects.”

—(ChNU)

“The ability to download software or to purchase something online is something that I know that myself and a lot of others have struggled with a lot. If you're physically or financially incapable of doing something, it can impair your degree outcome or prevent you from producing what you want for a final show etc.”

—(UAL)

- **Creativity and online education**

“(…) And you've got the input and learning where we had a drawing workshop last semester, and the lecturer decided that every single week we would go to a different museum or gallery around Bath and draw things there, which was awesome and really, really inspirational and kept us all on our toes and drawing new stuff. I think it's less about the medium itself and more about how you use that medium. That stimulates creativity and gives people more inspiration”.

—(BSU)

“Especially at the very beginning, when we suddenly had to move home from the university, sit there and everything was closed, then we just had to be a lot more creative and (…)
I don't know, I think it was beneficial to some extent.”

—(SWPS)

“Most people seem to be quite happy to just flip the switch and go back to in person, but that's something I found difficult.”

—(UAL)

“It was challenging studying online, particularly in art and design-based course online because that kind of critical discussion in terms of amongst peers and tutors to develop your work and receive feedback, It didn't feel like there was quite the skills or the tools available to do that online in a way that was like the most efficient or the most beneficial.”

—(UAL)

“What was challenging studying online for me when it comes to studying something creative was, the difficulty to keep the creativity, because of feeling isolated, it was quite difficult to find your inspirations and new perspectives because of this feeling of fear being like a claustrophobic and isolated in like let's say your room or your house. You don't have that many possibilities to interact with different students and the online sessions that we had with other peers, they didn't feel authentic and real in a way, I can't really describe it, but it felt

very forced and no one really wanted to talk about things because there was so many people, it just felt quite pointless.”

—(UAL)

I don't think there's really any replacements when I'm around with people. I have 100 more ideas than I would necessarily sit in at home because you're only looking at what you're being shown. Like, if I could be hearing someone talk about something in here and go or it would be in the cafeteria and you think actually or you'd be kind of chewing fat with people, that was great. (...) I think hybrid is best because there's certain things that you're going to think of and come across with people or even just outside your own four walls that you won't necessarily it's like having yes men around you. If you're surrounded by your own stuff and your own interests all the time, you're never going to have that outside Influence group thinking very quickly.

—(IADT)

- **Teacher`s work**

“Just forget about the students for a second. It is so much more admin work as a lecturer to organise time slots. Like that when it's like hours in the day. Yeah. I'm not being funny, but if you're going to be booking, even if it's only a 15 minutes slot yeah. Once those 40 by 15 minutes, you're like, oh, well, that's goodbye”

—(IADT)

“Yeah. It's impossible because I know that lecturers were like eating their dinner, do you know what I mean? It's like they were trying to make time for their normal life as well. But there was no time because if someone you book a slot and then if someone has an emergency problem and they do see it and they do want to respond quickly. Soon. That can take like I think the work life balance must be very...like I don't know... but I would imagine it's very difficult for the lecturers when you're on call around the clock”

—(IADT)

“Yeah. Things started to slip and I think some people came under severe pressure. I mean, even the lecturers that came under really severe pressure because, again, there was no off on us”

—(IADT)

4. Future of online education

“The pandemic utterly revolutionised my education experience and my understanding of what education could be.”

—(BSU)

“This is what the pandemic taught us even though there were things that didn't work well and it didn't work for all students in all ways, that we discovered we could do things with technology that we couldn't before. I mean just this is something we could have technically done before the pandemic but we never did.”

—(BSU)

“I think it'd be a shame to lose it. Even if it's not for everyone. Even just to have the option there or even just some options. Like guys, come on... It's in person, but we're gonna record this or this or this... If it's important. It's gonna be online”

—(IADT)

“No I think everyone's had, lecturers included, they've had a steep learning curve. We've all had benefits. It would be silly to throw the whole thing away, when there are good sides to it. And I think if we weeded it out, you know, what works, what doesn't work. But it'd be just crazy to throw away all the learning on the lecturers part as well. There are things... It makes it more accessible .(...) When I got sick, I did not see myself being able to commit to a full time college course.(...) I contacted colleges and asked if there were any options for, just for remote access for certain things and they just said 'no, we don't do that, not even possible. And then covid happened. And yeh you've got people whose commute is crazy. We've got people who come from Donegal”.

—(IADT)

“Teaching in person and teaching virtually is a very different experience. Something nobody predicted. I do think tutors could be helped and given more guidance in order to help students.”

—(UAL)

“Art requires live interaction and execution of work.”

—(ChNU)

“Online education cannot completely substitute in class learning.”

—(ChNU)

“If you have everything online you don't need to go anywhere. You don't mix with people in the real world. That actually causes anxiety in the long term.”

—(BSU)

- **Hybrid education as optimal way of learning and teaching**

Hybrid form could be most optimal, but it is impossible to move everything online, in this specialisation at least some classes need to be in person.

—(ChNU)

Mainly students support the idea that hybrid learning should be the most popular form after the war is over in Ukraine.

—(ChNU)

“Online learning is less favoured than in class learning, but it is possible to get the golden mean combining online learning with in person consultations, hybrid learning, which would be an optimal option.”

—(ChNU)

The main issue was the drop of professional mastery, since there was no possibility to access workshops/ studios during lockdown. So, the issue was with the practical disciplines, but there was no issue with theoretical disciplines, it saved a lot of time. Therefore, hybrid form is most beneficial, but only if you have a possibility to access the workshop/studio in person.

—(ChNU)

“I really think online learning is the future. I really want to see it go forward and I really want to see it expand.”

—(BSU)

“Online should absolutely be a part of future learning.”

—(BSU)

“Online learning should be more interactive.”

—(BSU)

“There should be that online option.”

—(BSU)

“Hybrid education model just gives you more possibilities (...)”

—(SWPS)

“I think what would be quite useful, is to make it that every individual can adjust whether they want to have an onsite learning experience or online one and that they can choose depending on how they feel and like a certain time of the year or certain periods if they, feel like they can't really go out of house.”

—(UAL)

“Before I found it online learning opened a lot of doors for me up, but I'm starting to find that I'm being kind of left out of things increasingly”

—(UAL)

“As classes have returned and gone back into being in person, I feel I have a good sense of what works and doesn't. I think it works wonders for hybrid learning practices which I like. Having lectures recorded and live streamed online has helped massively, although I can see that these teaching methods probably do make some students more passive. I think it is crucial both physical and online are offered as students will need to go over things and might not always be able to get into classes”

—(BSU)

- **Virtual Reality in art & design education**

“I want to be very clear, that's online learning as is, right now, two out of ten, as I've experienced it. But if there were changes with VR tech and everything that sounds awesome. I'm here for it, that'd skyrocket.”

—(BSU)

“Yeah, I guess VR stuff would be a game changer(...)”

—(BSU)

“I think that the idea of bringing VR to online learning is really, really good, if a bit inaccessible right now because of how much tech it needs.”

—(BSU)

“It's more the fact about how inaccessible VR is at the moment, that's holding that back.”
—(BSU)

“I guess if it was infinite resources I'd have some sort of augmented reality where you could actually go into this virtual studio space at the moment, go into that, then be there. (...) You can touch things, hold them, maybe even smell them I mentioned. That would be my ideal. You can actually be in a space, it would feel real.”
—(BSU)

“Interactive lectures – OK, some of the consultations would probably also work only online, but in general this (...) face to face experience is irreplaceable. Well, unless we all move to Metaverse.”
—(SWPS)

“My initial interest in art was public sculptures and environment and community, but then because everything moved online, I was thinking about how to move my interest to align with what's happening right now and then that's why I came to my current direction, which is like immersive spaces and virtual reality.”
—(UAL)

“However, I still think there are two boundaries we need to address for XR technology to be broadly used in education. The first one is accessibility to equipment, and the necessary funding departments receive to distribute tools to students. The second point is that immersive learning might not be the best option for every student. It might be because XR technology does not fit into their practice or because they feel more comfortable working with an analogue medium”
—(BSU)

Chapter 4. Key findings

Overall, the Diagnostic survey presents the importance of in-person teaching for art & design courses across both Students and Teachers categories. Although both sets identify key advantages and opportunities for hybrid learning. The pandemic has shown that online education is possible and effective. Research also shows that immersive technologies can be a useful tool in the future of online education in the field of art & design.

Student Survey

1. Accessibility & wellbeing issues

To address challenges and maintain identified advantages:

- Accessibility for mental health sufferers and chronic illness sufferers
- Benefits of access to people with disabilities
- 'I am surrounded by distractions and have no work/life balance'

- Students pointed out that online education “Affects on my mental health and my overall attitude towards the course”
- More than half of the students answered that their motivation to learn was at a lower level than in the case of traditional in person education
- Isolation and difficulties in establishing relationships, cooperation
- Lack of socialisation with the teacher and peers, lack of verbal contact.
- Lack of live communication with the teacher and groupmates, lack of discussions, advice, and emotions.
- No involvement. They just watch a recording later.
- No pre-meet with the colleagues. Online is more formal in a way.

How to address engagement and motivation through the hybrid experience?

2. Preference for Hybrid Experience

To address hybrid experience and missing functionalities of digital experience

- Appropriate work spaces.
- Being able to look at other people's studio spaces for inspiration.
- Lack of tactility, materiality.
- A way to easily share art and receive feedback without putting yourself in the spotlight.
- Hard for everyone to share, no easy way to save records of the chat, no way to send files in chat, can't pop out chat/video to easily see both.
- There's nobody to compare yourself to, we only get to see our classmates finished work because showing something below that standard is scary to do online. I always learnt the most from watching the people around me.
- Students who found online/blended learning to be accessible now feel like they are being left behind. For one student, they explained that they felt doors were finally opening for them and now those doors are quickly being closed.
- Students feel hybrid learning is not being done as inclusive and accessible as it should be. Students shared instances of feeling alienated, on display and forgotten by tutors in hybrid learning environments.
- Students do not often feel comfortable or able to inform their tutors that learning activities are inaccessible or are excluding them from participating. Often the burden of highlighting inaccessible practices falls onto the student.

How do we improve the hybrid experience?

3. Difficulties experienced with online teamwork

To address online group work for creative subjects:

Although the survey identified that distance learning/online learning works well for individuals/ individual projects. Students & teachers identified problems with online group work.

Spanning across the 3 key areas; the biggest challenges for students studying design/art online related to:

- Access to workshops, studios, technology
- Self-discipline and self-organisation, time management
- Motivation
- Design process, learning process
- Work/rest space
- Teamwork
- Digital and practical tasks
- Creativity and online education

How do we address online group work?

Student suggestions:

- use of surveys to make the class more engaging
- cameras on
- an exercise to warm up (creativity)
- lecture with elements of discussion
- an interactive board on which some work could later take place

Teacher Survey

1. Hybrid teaching: How to bridge teaching in person and online simultaneously?

More than half of the respondents considered the hybrid model of teaching to be the most effective after 1.5 years of the COVID pandemic. For 35 respondents, the in person model is the most effective and only 3 people indicated online teaching as the most effective.

- Lack of workable structures and technological solutions for hybrid teaching with both on campus and online students.
- General lack of technological solutions for hybrid teaching.
- Consistent with the realities of the designer's work, at present designers use the online form a lot and students should learn to find themselves also in this form of work.

2. How do we support and prepare lecturers & technicians for online teaching?

- Not all teachers are ready to work remotely" / The lecturers not being prepared for online teaching and not knowing how to use google classrooms etc.
- Tasks scattered on various platforms
- No access to what's been paid for.

3. Problem of Group Work, Creative Community and Engagement

- Better coordination across breakout groups; recording controls.

- Breakout rooms, wipe boards, sharing video more easily with better sound (there's so much discrepancy between student's devices and wifi speeds/types).
- Intuitive, simple, predefined but also easily configurable layout (space) for group work.
- Chat that would allow for quick communication with a group / person.
- Emotionality.
- Ease of communication between students
- Collaboration was slow and missed the spark of working together in person. It was difficult to check in on quieter students and many students felt nervous about being on a web camera.
- Synchronous sharing of audio (eg: multiple people speaking as in a physical room) . More natural discussion tools. Whiteboards that also provide chronological/timeline templates. Miro is a good pin up board style option but difficult to navigate a timeline of events and offer quick feedback.

4. Missing functionalities for Art, Design and Performance specific platforms according to teachers:

- I dream of a three-dimensional equivalent of the screen. A device that allows one person to quickly model something like clay and the other person can touch it "via the Internet" not only see it.
- I don't think any functionality could be developed to allow me to handle and manipulate the objects that the students are making?
- Lack of touch/ materiality and inability to see the work – the screen flattens objects and surfaces. Difficult to see detailed and nuanced approaches to making.
- It's cumbersome and difficult to do any direct teaching, tuition or instruction in practical subjects such as drawing and animation.
- The major issues existed in and around the exploration of 3d, physical forms and experiences of physical materials.
- Debate and discussion, effective analysis of 3D work, lack of touch and tactile regarding fabrications that are key aspects of the subject area.
- Quick virtual capture of the student computer image to help solve the problem in the 3D modelling environment.
- Tools that correspond to the specificity of the specialty Fine, Decorative and Applied Art, Restoration.
- Workflows of formative and summative assessment, like time-based feedback and logs of activity, and the ability to flexibly export and share emerging practices beyond the initial application.
- Close up filming of the work in progress during the group session setting.
- Difficulty of screen sharing for use of visual and moving-image references.
- Live interactive screen sharing ie. two people working on the same screen at the same time, I know it's possible but with the tools I've been using it's very much demonstrating my shared screen then have the student share their screen to watch them do what has just been demonstrated. Working in a digital space feels like there's a lot more steps between doing things than the immediacy of in-person work and it feels clunky and slow at times. Working in a digital space requires more time to cover the same amount of content.