Designing online education for small/medium enterprises - a case study from the cosmetics industry

Hezrien Mizouri (2556005), Sanaz Etminan (2033941)

August 26, 2025

Master Thesis
Information Sciences

Faculty of Science
Vrije Universiteit Amsterdam
Amsterdam, Netherlands

First supervisor: Anna Bon
Second reader: J.M. (Hans) Akkermans

Declaration of Authorship

Use one declaration for each author.

I, **Hezrien Mizouri**, declare that this thesis titled, **Designing online education for small/medium enterprises - a case study from the cosmetics industry** and the work presented in it are my own and that of my co-author. I confirm that:

- This work was done wholly or mainly while in candidature for a research degree at this University.
- Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.
- Where I have consulted the published work of others, this is always clearly attributed.
- Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work.
- I have acknowledged all main sources of help.
- Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself.

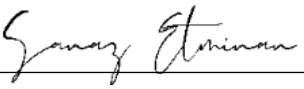
Signed: Hezrien Mizouri

Date: August 26, 2025

I, **Sanaz Etminan**, declare that this thesis titled, **Designing online education for small/medium enterprises - a case study from the cosmetics industry** and the work presented in it are my own and that of my co-author. I confirm that:

- This work was done wholly or mainly while in candidature for a research degree at this University.
- Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated.

- Where I have consulted the published work of others, this is always clearly attributed.
- Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work.
- I have acknowledged all main sources of help.
- Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself.

Signed: 

Date: August 26, 2025

Acknowledgments

We would like to extend our deepest gratitude to our supervisor Anna Bon for her guidance, patience, and encouragement throughout this project. Her input and support has greatly helped us to realise this research project.

We also thank J.M. (Hans) Akkermans for his thoughtful commentary and support as the second assessor, and Laurence Beierlein for specially taking the time to speak with us and share her advice and experiences as an educator.

We thank Stefano Perna, Imaginary Institute, and the University of Naples Federico II for the creation of the Hybrid Learning Design Toolkit, which has been very useful to our research.

We are grateful to course coordinators Zubaria Inayat and Ilias Gerostathopoulos for their understanding and support in finalising our Master Research Project.

Finally, we would like to thank the participants in our research for their time and willingness to share their thoughts and experiences with us.

Contents

Abstract

Context: Online and hybrid training has become more and more popular, but its efficacy is still debatable.
Goal: In this study, we aimed to design an online course for the cosmetics industry to best assess how to efficiently give a commercial, online practical training.
Method: We designed a course with input from potential users. We used an existing framework for hybrid learning to design our course. We then tested our course prototype with users.
Results: Our resulting course was not fully online, but instead a mixed course which is partially given online and partially on-site. We could not find an effective way to integrate effective practice for a practical course in an online environment.
Conclusions: Course design is dependent on too many variables, such as the size of the class, the type of course, whether it is practical or not. Thus, it is difficult to advise one particular design. However, the ability to practise in real-life, get immediate feedback from teachers, and useful visuals are important factors for our use case.

1 Introduction

The landscape of teaching has changed with the continued development of technology. Online learning is increasingly offered more online.[4] The global online learning industry has grown 900% since 2000.[2] Within the Netherlands, 59% of internet users engaged in online learning in 2024.[4] Outside of academic and corporate training, online training is also offered more by small and medium enterprises (SMEs). These courses are bought by customers to learn a skill. Therefore, the objectives are different from those of academic or corporate employee training. These courses are offered as a revenue source for the business and to reach a wider customer base. To ensure customer satisfaction, the quality of the course is very important.

While the market for online courses has grown significantly, the question of how to design practical training courses online remains challenging. Many hands-on skills have traditionally been taught face-to-face with demonstrations, practise, and instructor feedback. When transferred to an online environment, these features are often weakened. Students report difficulties such as reduced social interaction, no real-time feedback, technological barriers, and a greater need for self-discipline.[3, 13] Therefore, even though online learning is not a new concept, there is still a lot of room for improvement in this particular area.

However, there is still merit to be found in offering online education, as there are advantages that online learning provides compared to on-site education. It removes geographical barriers, increases flexibility, and can be more cost-effective by reducing the need for physical classrooms or equipment.[1, 9] Also, in case of illness, you can still follow an online course. You may feel fit enough to study, but you may otherwise pose a contagious threat to others in the case of on-site training. This was exemplified during the COVID-19 pandemic. Social distancing was adopted worldwide in many areas, including in education and businesses. However, the world was not fully prepared for this sudden change in daily life. Openo [12] said that "online education often fails to fulfil its promise, and the emergency shift to remote instruction has, for many, justified

their distrust and dislike of online learning." He also said that "developing high-quality online instruction takes time, effort, and planning, which the [COVID-19] pandemic did not allow."

This thesis explores how a practical training course can be designed to be online in a way that preserves the effectiveness of in-person teaching. Using a case study approach, we investigated the needs and expectations of potential students and used existing design principles to develop a prototype course within the cosmetics industry. We aimed to show how SMEs can build effective and marketable practical online training that meets student needs.

1.1 Literature Review

There is a lot of research done on online training, which is no surprise considering its popularity. Lim et al. [10] looked into the factors that make online training effective: the performance of online trainees increases with higher motivation, computer self-efficacy, and task-related content. Also, face-to-face meetings between trainer and trainee and the ease-of-use of the platform used are important factors.

A study by Viola and Mones [16] looked at the effect of the shift to online learning on students in the Philippines following the COVID-19 pandemic. The results show that some students enjoyed the flexibility of online learning, while others struggled with the lack of contact and interaction. The paper mentions the need for "enhanced academic counselling, IT support, and inclusive teaching strategies to mitigate the challenges of virtual learning and foster a conducive learning environment."

Blended hybrid learning refers to hybrid classes where some students are on-site and others follow along remotely. Research shows that this style of blended teaching is flexible, engaging, and convenient.[14, 17, 19] Wang and Huang [17] performed a study that showed that blended hybrid learning can provide learning experiences equivalent to face-to-face teaching. A study by Fadde [5] showed that students often prefer online participation, although international students often value on-site classes. All students (online and on-site) from this same study preferred the chat-based text interaction to ask questions and comment.

The studies also name technological issues, teaching design principles, and organizational issues as common challenges.[14, 17, 19] Weitze [18] showed that teachers have to adjust their learning designs for hybrid learning. Szeto [15] shows that "attainment of the intended learning outcomes relied more on the teaching presence than on the social and cognitive presences of the approach."

Teaching practical skills online seems more challenging due to the inherent hands-on element. A study by Krzyżak and Walas-Trebacz [7] looked at the impact of students' practical application skills on their learning outcomes. The paper recommends that teachers should motivate learners to stay engaged and put their knowledge into practice. The results of this study show that active use of the knowledge and a high level of engagement are important factors for successful remote learning.

A meta-analysis by Li et al. [8] assessed the effectiveness of online teaching on practical skills among nursing students. The results revealed that online teaching can improve students' knowledge, skills, learning satisfaction, and confidence, although the online practice courses were mostly focused on teaching basic nursing skills. The study concludes that "online teaching still needs to

innovate teaching methods and designs to improve students' interest in learning and better combine practical teaching with modern information technology to achieve the best learning results."

Mitchell [11] wrote about the challenges faced by students doing practical work in the wake of COVID-19. He stated that online simulations can be a good alternative in basic laboratory courses, where students carry out structured tasks. Students indicated they do not perceive these simulations as fully equivalent to real-life practises. Simulations can also be expensive and unintentionally emphasise aspects of the physical experience that are lost.

1.2 Problem Statement

The design of an online training course is complicated for several reasons. There are differences from in-person training that give more challenges to its efficiency. The students and instructor(s) are not in the same area, perhaps not even live at the same time due to different time zones. This removes the ability to immediately ask questions or ask for clarification. It is more difficult to have a natural back and forth between instructors and students. If an error occurs with the online course, this might not be resolved immediately. SMEs may lack the resources to research how to efficiently design these courses. Many existing frameworks provide guidance, but we did not find one to help design practical courses online.

1.3 Research Question

Our aim was to design and test a commercial online course focused on learning a practical skill. We applied existing design frameworks and tested our prototype to help answer the following research question:

RQ: How can we design a commercial, practical course given remotely to be as effective and successful as in-person training?

To help us answer this question, the following sub-questions were created:

SQ1: What factors make practical in-person training effective and successful?
SQ2: Which of these factors are available in remote training and which are not?
SQ3: How do learner engagement and motivation differ between online and in-person training?
SQ4: What instructional design principles are most effective in practical online training?
SQ5: What technologies and tools improve the effectiveness of online practical training?
SQ6: How do learners perceive the effectiveness of online versus in-person training for practical skills?

1.4 Scope of the Research

This study employed a case study to explore attitudes toward online training and study effective course design in the context of commercial trainings, i.e.

the focus is on online courses offered by SMEs as products or services that customers can purchase, rather than internal employee training. We did this by attempting to design an effective online course for learning permanent makeup application.

1.5 Personal and Joint Contributions

Both authors have jointly contributed to the following:

- Developing the research questions.
- Defining the research methods to be used.
- Designing the interview guide.
- Conducting a number of semi-structured interviews.
- Designing the outline of our online course using existing frameworks.
- Discussing our conclusions and takeaways. Sparring together.
- Analysing our results after testing.
- Answering the sub-questions and research question.

Hezrien Mizouri's specific contributions include:

- Coding and analyzing the interviews.
- Creating the report layout and translating it into Latex.
- Interviewing online testers.
- Writing the following sections of the report: 1, 1.1, 1.2, 1.3, 1.4, 2, 2.1, 2.2, 3, 4, 4.1, 5, 6, 7

Sanaz Etminan's specific contributions include:

- Developing our online course following our outline.
- Performing in-person testing and interviews.
- Writing the following sections of the report: section 1, 1.1, 1.2, 1.3, 2, 2.3, 4

2 Research Methods

In this section, we will explain the methods used to conduct our research. We will outline all the steps we have taken and explain the choices we have made along the way in relation to the research questions. We have used a combination of qualitative research methods and design science research for this study.

We have designed our own online course as a case study. For this, the Hybrid Learning Design Toolkit[6] was used. This is an open source project by

the Imaginary Institute and the Department of Social Sciences at University of Naples Federico II to support hybrid course design. We interviewed 10 individuals, most with an interest in the beauty industry, as our training was focused on permanent makeup. The individuals had to be technologically proficient to remove this barrier from our study. We wanted to focus only on what makes an online course effective, not so much the accessibility. The interviews were conducted at the beginning to understand expectations and learning needs. We used the data from these interviews to make our initial online training design. After interacting with the course design, some of the interview participants were then interviewed again to gather feedback on usability, clarity, engagement, and overall user experience. Participants did not complete the full course, but explored the online prototype and provided qualitative feedback. We interpreted this user feedback along with data from an expert interview and existing research to find answers to our research questions.

Our results are the final user-centred design and a reflection on what we learned about the process of creating an online course.

2.1 Data Collection and Analysis

To get a better idea of expectations and wants with online training, we set up a semi-structured interview with open-ended questions focused on the experiences, preferences, and suggestions of participants regarding online courses. A total of ten participants were interviewed at this stage. All interviews were recorded with the consent of the participants and transcribed. The interview layout can be found in appendix A. For the transcribing process, we used a couple different methods that we sought out for ourselves. We used Good Tape[1], Whisper[2] by OpenAI, and Clipto[3]. Good Tape is a free automated transcribing tool that works with different languages, but the free version is limited. Three interviews were transcribed before needing to look for a different method. The interviews were too long for the memory of ChatGPT. Instead it suggested the Whisper tool from the same parent company OpenAI. This is an automatic speech recognition system. The package was installed and set up through the command terminal. The rest of the interviews could then be transcribed with the following Python code:

```
import whisper
model = whisper.load_model("large")
result = model.transcribe("file_location", language="nl")
print(result["text"])
```

Following transcription, the interviews were coded and analysed in ATLAS.ti. This was done by reading through the transcripts, identifying related concepts, and grouping these together as codes. These codes were then applied to relevant sections within the text. Finally, we used the data to design our first online training. Table 1 contains all the codes used and their descriptions.

[1]Goodtape. https://goodtape.io/
[2]Whisper. https://openai.com/index/whisper/
[3]Clipto. https://www.clipto.com/nl/transcribe-audio-video-to-text-free

Code	Description
online training wants	An element of online training that an interviewee mention as something they want from an online training.
online training needs	An element of online training that an interviewee considers mandatory or a must.
preferences	What interviewees prefer over other things.
feedback	Anything mentioned that is related to feedback.
motivation	Anything mentioned that is related to an interviewee's motivation.
time spent	How much time an interviewee would like to spent on such an online course.
type of class	Any comments made pertaining to the type of teaching or class, such as on-site, online lesson, or a mix.
doubts and questions	Any doubts expressed by interviewees pertaining to applications or efficiency of online trainings. Any existing areas of doubt in their mind.
likes	Things that interviewees like about online trainings.
dislikes	Things that interviewees dislike about online trainings.
design suggestions	Suggestions or ideas shared about the design of an online training.
concentration issues	Comments made related to concentration issues of interviewees when following an online course.

Table 1: Codes and their explanations.

2.2 The Hybrid Learning Design Toolkit

To design our course we used the Hybrid Learning Design Toolkit. This toolkit is "created by learning experience designers to support educators in developing effective hybrid learning experiences."[6] It is a project by Imaginary Institute and the Department of Social Sciences at the University of Naples Federico II, within the Euridice[4] framework. Euridice is a project to help guide the digital transition in a way that is fair, inclusive, and protects human rights. The Hybrid Learning Design Toolkit comes with several tools (canvases, cards, and templates) and consists of three dimensions. The dimensions are Environment & Technology Kit, Learning Experience & Assessment Design Kit, and Facilitation, Equity & Community.

2.2.1 Dimension 1: Environment & Technology Kit

This dimension focuses on the tech, the space, and accessibility needed to make hybrid learning work effectively. It is based on the idea that learning can happen in three places at once: in-person, online, and remotely. The framework comes with tools to help set up these spaces. The hybrid learning space mapping canvas is a visual tool that helps educators visualize and analyse their hybrid learning environment across three interconnected contexts:

[4]EURopean Inclusive Education for Digital Society, Social Innovation, and Global CitizEnshi. https://euridice.eu/

- In-Person Space: This is the physical classroom where the students and teacher are both present.
- Digital Environment: The digital platforms used for the online portion of the course.
- Remote Space: The environment of remote learners who are not present in the classroom.

2.2.2 Dimension 2: Learning Experience & Assessment Design Kit

This dimension is about redesigning learning activities to engage students equally in hybrid learning environments. Of all the tools provided within this dimension, we used the Hybrid Learning Activity Sequence Canvas, the Activity Strategy Cards and Assessment Method Cards. The Activity Sequence Canvas is a planner where you can organize and visualize the lessons and segments of a course in a clear way. As of writing this report, a new version of the canvas has been released. At the time of designing the course, we used the first version. This first version of the activity canvas can be found in Figure 15 in appendix B. There are three cognitive engagement levels in this canvas.

1. Receiving (Passive)

   At this level, students are taking in information that is presented to them passively.

2. Responding (Active)

   Here, students take a more active approach by interacting with the information.

3. Creating (Constructive)

   Students will apply the information they have received by creating, e.g. an essay or a prototype.

There is also a Design Across Spaces section. This lower section of the canvas is meant to help integrate learning that takes place in in-person and remote spaces simultaneously. However, we have not included such multi-locale teaching in our course design. Instead everything takes place in the same place as we will explain further in section 3. For now, know that we replaced this part of the canvas with an Assessment section, where we lay out how we assess the performance of students.

The activity cards describe different activities to be performed at the different cognitive engagement levels. The assessment cards contain different assessment applications to be included in the course design. We used the Assessment section in our altered canvas to include the assessment cards. The activity and assessment cards used are shown in figures 11 through 14 in appendix B.

Figure 1: We worked with the toolkit in the home of our supervisor, Anna Bon.

We used an existing training that Sanaz gives to transform into a new hybrid version. This is a practical skill training on applying permanent eyebrow makeup. We started our design with the toolkit together at the home of our supervisor, Anna Bon. There, we worked with a physical canvas and printed cards and templates to literally cut and piece our course design together. The practical exercise worked really well to help us visualise our course.

Figure 2: We used the printed Activity Sequence Canvas and Activity Cards to put our course together.

Figure 3: Working practically with the tool gave us an easier time to place the cards and put the layout together.

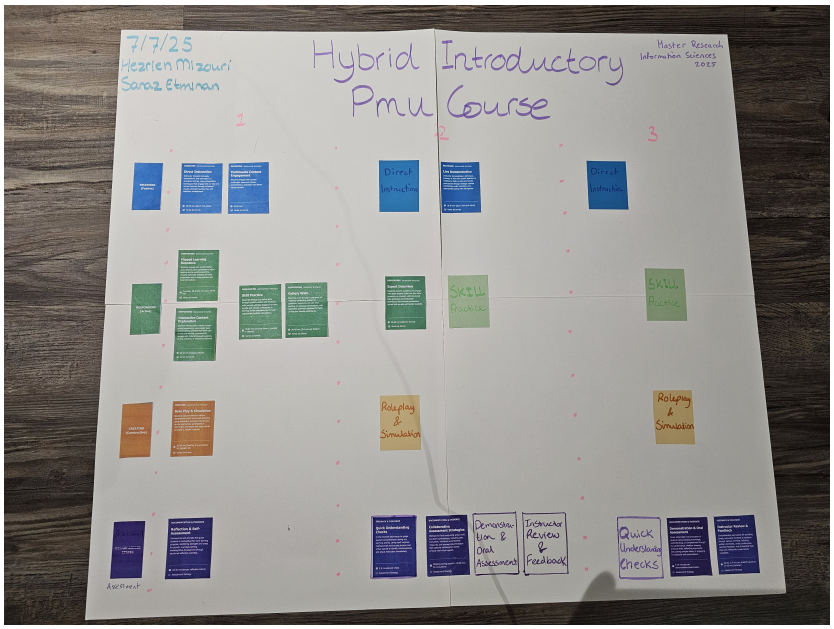


Figure 4: The making of our course design using the Hybrid Learning Activity Sequence Canvas

2.2.3 Dimension 3: Facilitation, Equity & Community

This dimension focuses on the social-emotional aspects of hybrid learning to ensure all learners feel equally engaged, supported, and connected. The tools in this dimension are specially made for simultaneous remote/in-person training. However, since our course does not contain this, we did not make extensive use of these tools, although there were a few cards that we did use.

2.3 Course Development

The training developed for this research is titled Hybrid Introductory Permanent Make-Up Powderbrows Course. This program is designed to provide beginners with the foundational knowledge and skills required to begin a professional career in Permanent Make-Up (PMU). The following topics are discussed: skin anatomy, hygiene protocols, pigment theory, and the application of the powderbrows PMU technique. Once the course is completed, participants are expected to have both the theoretical understanding and the practical competencies which are crucial to deliver high-quality PMU services.

The online component of the course primarily delivers theoretical content which is not too detailed, supported by demonstration videos and visual elements to illustrate the different steps of the procedures.

Selecting a suitable platform for creating the course was a crucial design decision. Initially, Miro[5] was considered, as it was already in use at the Imaginary Institute. However, since user feedback was that while Miro offered several appealing features, it lacked the user-friendliness required for users we did not see this as an option for our course.

[5]Visual workstation platform. https://miro.com/index/

Further research was done to find an alternative for Miro. Two potential platforms were found: Teachable[6] and Thinkific[7]. For selecting a platform, we used the following criteria:

- Support for online meetings.
- Ability to upload and host various file formats (e.g., videos, PDFs, images).
- Downloadable materials for students.
- High usability for both course creators and students.
- Efficient navigation, ensuring that learning the platform itself would not take more time than engaging with the course content.

After testing both platforms, Teachable seemed to be the best solution. A few factors led to this decision. First, Teachable contains a lot of functionalities and demonstrated better stability, with fewer errors during file uploads. Second, the cost of Teachable was slightly lower than Thinkific, while offering more features. For example, Teachable allows the combination of videos, PDFs, and text within a single lesson, whereas Thinkific requires the creation of separate lessons for each file type. This capability in Teachable leads to a course structure which is more clear and it reduces distractions for learners.

Thinkific scores very well on visibility in our opinion and makes certain options more immediately accessible. However the additional effort that the interface of Teachable requires to go through the course is still worth the flexibility and content integration it offers. Furthermore, the widespread use of Teachable by established companies also influences our perceived reliability and credibility of the platform, further supporting its selection for our course.

To minimize the likelihood of technical errors, we made the decision to limit the number of digital platforms used within the online environment of the course.

3 Designing an Online Course for the Cosmetics Industry

When starting our research, ultimately we found a group of 10 participants for the study. However, all but two of them had an interest in cosmetics. The other two interviewees did not have this interest, but we still interviewed them because they had experience taking online courses before. One of them liked training online and the other did not. We decided to listen to their viewpoints, as well.

3.1 Interview Results

The elements that were labelled with the code 'online training needs' are considered to be mandatory in our design. For example, several interviewees mentioned personal attention and feedback as the most important features for them,

[6]Online training platform. https://teachable.com/
[7]Online training platform. https://www.thinkific.com/

rating them a 10 on a 1 to 10 scale of importance. Furthermore, many people wanted the course to be result-based, as if working towards a reachable goal. People mentioned getting a certificate or being tested on their skills. Social interaction, particularly with the instructor is also very important. People do not like courses that feel impersonal. In table 2 you can find a summary of the most notable findings with some example excerpts from the interviews.

Topic	**Number of mentions**	**Example quotation**
Feedback	16	"With feedback you can look at what you can improve."
Live sessions	7	"Live sessions are necessary, regardless."
Results/certification	6	"Proven results. That the course is proven effective. That I get something in return."
Pre-recorded class	8	"I liked that I could do it at my own pace [...] that I could pause [...] Rewatch."
Social interaction	8	"The only downside that I have with online, which I forget to mention earlier, is it can be a little impersonal."
Personal attention	8	"There is no attention for the individual, that makes it harder to be motivated."
Practise	8	"You have to practise after an online dmeonstration, because that's how you learn. You learn by doing."

Table 2: Coding and Analysis Results

The interviewees were asked about their preferred type of class, i.e. live online class, in-person class, pre-recorded lessons. The answers were different from each other and there was not one popular answer that jumped out. Some people preferred live sessions because they could ask questions and get an answer directly. Others preferred pre-recorded classes because they can be rewatched at a later time. Some mentioned a mix of both as ideal. One answer in particular, then inspired us for our design to get a good middle ground: "I would say the basics would ideally be pre-recorded. And then if it gets more complex, live sessions would maybe be nicer."

Generally, the expectations of the participants were to start from basics and not assume that the student knows everything. In terms of layout, many people mentioned a step-by-step detailed explanation of a process followed by a video, for example. People also wanted exercises or quizzes throughout to test their knowledge. Somebody mentioned a progress bar to see how far you are in the course.

There were also doubts that interviewees had pertaining to practical online courses. Many people wondered how you can learn a skill such as the application of permanent eyebrow makeup without practising physically, whether on a dummy or a live model.

Although the intention was initially to translate a practical course to online, we found this to be difficult with the aspect of practising the skill. Normally, a cosmetics course requires that a student practise on a dummy or a model. On top of that, permanent makeup requires special equipment and a safe working environment that adheres to proper GGD protocols. This makes it not possible to practise remotely. The theoretical part of the course was made online, but the practical parts would have to be done on-site with instructor present.

"The first thing I thought is if it is cosmetic... because it is very practical on the hands [sic], so I cannot imagine anything like that [...] how you would give that online [as a course]."

– Answer from interviewee.

Finally, general dislikes included an instructor who does not give personal attention, too many people in a class, low response level, too much theory, assuming you already have knowledge of the topic, and waiting for feedback. We wanted to make sure we could exclude such dislikes from our course design.

3.2 The Hybrid Introductory PMU Powderbrows Course

Our subsequent course design layout for the Hybrid Introductory PMU Powderbrows Course is shown in figure 5.

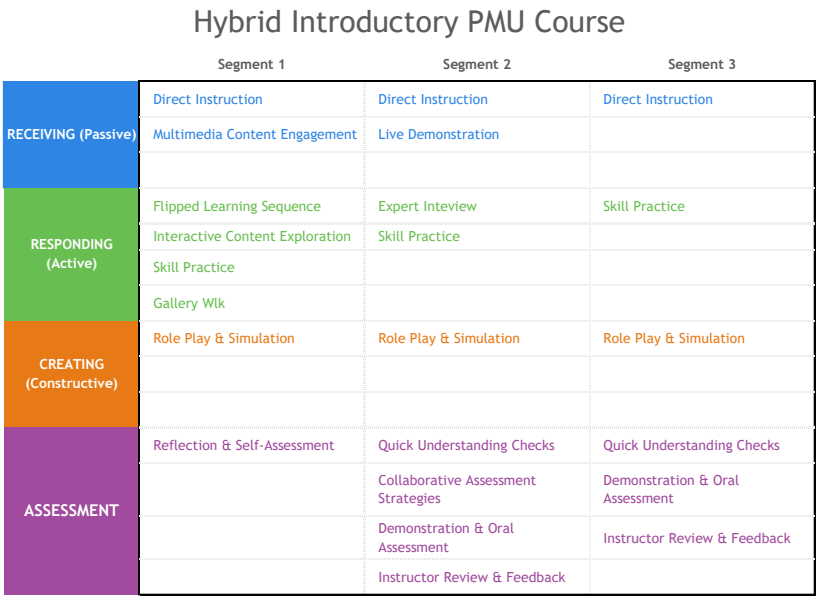


Figure 5: Hybrid Introductory PMU Powderbrows Course made using the Activity Sequence Canvas

Our course is divided into three segments. The first segment takes place remotely and mostly involves self-study using online resources such as videos, theory, practice templates, and a quiz. There is approximately 7.5 hours of content to be completed at the students' convenience. Some images from this online course can be seen in appendix C. The following activity cards were used for this first segment:

- Direct Instruction: Includes text and videos of the instructor explaining the theory.
- Multimedia Content Engagement: Videos and downloadable content are included.
- Flipped Learning Sequence: The students learn the theory before taking it with them to the next segment.
- Interactive Content Exploration: Students interact with content in the digital learning environment.
- Skill Practice: Students can practice their skills at home using downloadable templates to practice eyebrow placement tracing.
- Gallery Walk: As stated on the activity card: "Students move through a sequence of 'stations' containing content, or questions".
- Role Play & Simulation: Students will translate their knowledge into usable skills using the brow-mapping templates to replicate a real-world scenario.

- Reflection & Self-Assessment: A quiz will help students assess their knowledge of the theory so far, and any weak points they may have.

The second segment is an in-person day and takes place in a study room. On this day, students bring along their printable practice templates and receive feedback and tips on the application. They will also have a chance to ask questions. This feedback and Q&A section lasts about 1.5 hours. The students need to practice and hone their skills in physical settings, which is why this segment takes place in-person. Students will practice the application of permanent eyebrow makeup on latex skin and will again practice eyebrow-mapping, but this time on each other. This practice section takes around 4 hours. Finally, there is a demonstration by the instructor on a live model, which takes another 2.5 hours. Before the demonstration, the instructor also shows how to prepare the work station, following GGD protocols. Overall, this is a segment that takes place over 8 hours on the same day. There are a maximum of four students at once during the second segment to ensure adequate attention can be given to each student. Students have to reserve a spot in a practical class beforehand and must have finished the online segment before being able to do so. The activity cards we used for this section are the following:

- Direct Instruction: The class contains a quick recap of the most important theory sections.
- Live Demonstration: Includes a demonstration on a live model by the instructor.
- Expert Interview: We liberally use this card to describe the Q&A with the instructor. The card states: "Students prepare questions and engage with guest experts ... with structured Q&A protocols and moderation techniques." In our case, the expert is the instructor.
- Skill Practice: Students practice their skills on latex skin.
- Roleplay & Simulation: Students have to practice on latex skin. Students will practice eyebrow-mapping on each other, replicating a real-world scenario.
- Quick Understanding Checks: Instructor will make sure students understand every part of the course segment throughout.
- Collaborative Assessment Strategies: Students will practice eyebrow mapping on each other. This involves collaboration and peer evaluation.
- Demonstration & Oral Assessment: The instructor observes and evaluates the students during their skill practice on latex and eyebrow mapping, both done live.
- Instructor Review & Feedback: The instructor gives each student comprehensive feedback. As mentioned before, practical classes are kept small to allow for one-on-one oral feedback and evaluation.

The third and final segment also takes place in-person over an 8 hour day. Most of this day consists of practicing and further honing the physical skills. They will first learn to get their work station ready according to GGD protocols.

Then some more time is spent practicing the application of permanent makeup on latex. Finally, students will perform on a live model under the guidance of the instructor. The day ends in another Q&A session and finally the awarding of the certificate. These activity and assessment cards were applied in this segment:

- Direct Instruction: Constant instruction and evaluation takes place as the students work on their skills.
- Skill Practice: This day consists mostly of physical skill practice.
- Role Play & Simulation: Students replicate a real-world scenario by preparing their own work stations and practicing on a live model.
- Quick Understanding Checks: The instructor closely monitors the students and immediately corrects students on their technique and knowledge.
- Demonstration & Oral Assessment: Students dmeonstrate their skills live and receive immediate assessment throughout.
- Instructor Review & Feedback: Instructor gives comprehensive feedback to each student.

To facilitate connectedness and the feeling of personal attention by the instructor we looked through the Community Building Cards from Dimension 3 of the toolkit and found one we could use, Course Connection Mapping as seen in figure 6.

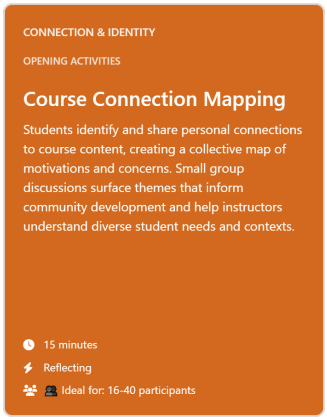


Figure 6: Community Building Card

When first together in class, there is a short introduction round. The instructor introduces herself and the students do so, as well. The instructor first shares their own experiences and then asks the students about themselves and why they are taking the course. There are also two Facilitation Strategy Cards we picked:

- Give Crystal Clear Instructions
- Adapt When Tech Fails

Both of these are essential in a classroom.

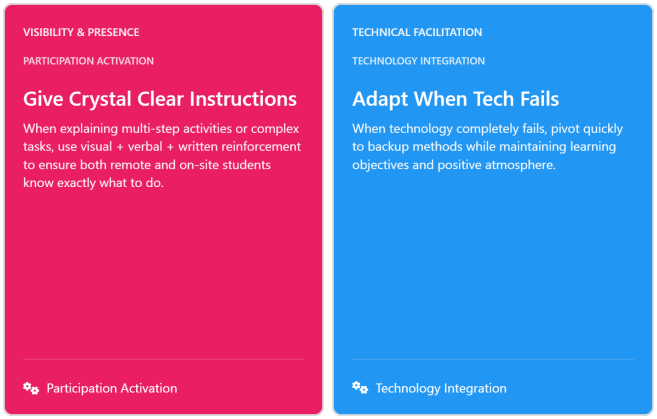


Figure 7: Facilitation Strategy Cards used.

3.3 Testing and Feedback

We tested the course in two settings. Four reviewers tested the online environment and 'took' the course online. Two of them came to the physical location to continue the test.

Overall, feedback on the online course was very positive. The people were all beginners in the field and said that the course was very easy to follow. They also thought it was genuinely interesting. As a test for ourselves, we did not tell the participants to complete the course, but only to 'look around' and judge the layout, the topics, and progression. Two of the reviewers still completed the course and expressed genuine interest. Reviewers were also impressed by the instructor's achievements in the field. The introduction of the instructor gave a personal touch and made them see the course as more valuable to complete. People were excited about the visuals. The process was explained step-by-step and then followed by a video showing the process. This was met with enthusiasm. However, two reviewers expressed that they wanted more photos and visual media. They were also confused by a part in the course about 'colour-correcting' blue eyebrows. Students did not know what to imagine with this until they were shown an example image on the internet. More real world examples of treated clients were also mentioned by two reviewers. Furthermore, the online practice templates that we provided were appreciated, but not considered a good enough practice option on its own.

Figure 8: Practical test following online course.

There was also positive feedback on the e-mail sent out. Enrolled students received a personalized e-mail that welcomes them to the course and explains the layout and progression of the course. Students liked that the online part could be completed at their own convenience.

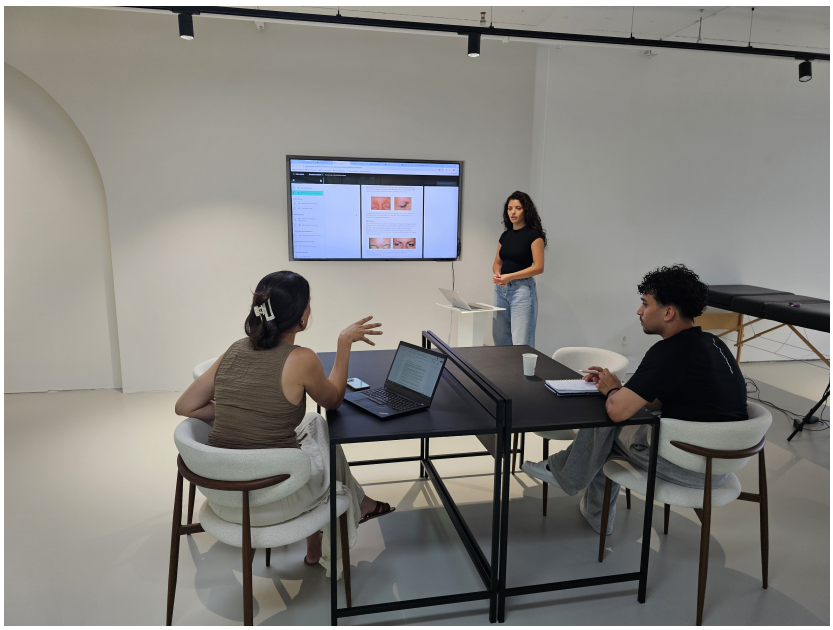


Figure 9: Students could ask questions and receive feedback at this stage and also received extra explanations of the material.

Although no reviewer actually took the full official course with the full practical days, overall reception was positive. People found that there was plenty opportunity to ask questions and for feedback, as well. People also liked that the theoretical material was shown beforehand, so they don't come to the practical study completely clueless. It also saves time to not spent all class time on certain material that can be learned at home.

4 Discussion

This case study set out to design an online course in the cosmetics field using the hybrid learning design toolkit and to evaluate its effectiveness through testing with participants.

The reception to our course from our testers was overall positive. What worked well? The structure of the course was clear. Navigation of the online platform was very easy and the material and contents were found to be interesting.

The sample of our testers is rather small. In that case, did we prove that the toolkit was effective? It surely made the process of designing a course easier for us. What we particularly appreciated about the toolkit is the clarity and structure it provides. It allows you to first get a clear overview of all possible options and choose which elements are most relevant for your study. The toolkit allows you to structure the course by breaking it into smaller pieces that can be addressed step by step and ultimately combined into a complete course. You can adjust it to your specific course and student body, as we did. The Activity Sequence Canvas was particularly useful to us and we made extensive use of it. We also found the cards to be very useful in finding innovative ways to design the course and add ways to facilitate engagement and connectedness.

We spoke with Laurence Beierlein during our research, an educator who had taken a course on the Hybrid Learning Design Toolkit. She shared with us her viewpoints and experiences in teaching and this was very useful in helping us formulating our main takeaways from our study.

She had started teaching online because of Covid, but she really likes it. Her approach consists of using breakout room in Zoom to get students engaged by placing them in smaller rooms. She gave them case studies to do on interesting topics. In the breakout rooms she asked students personal questions, such as 'What are you going to do after your study?' and such to show interest in them and create connectedness. Her classes were relatively small, 25-30 students. She says if you have big classes for 100 people, she understands you may not like teaching in this way, but she likes it.

This was all before the toolkit. She is very positive about the toolkit itself and thinks it is user friendly. She especially likes the facilitation and activity cards and uses them a lot. She even adds her own cards that she feels are missing.

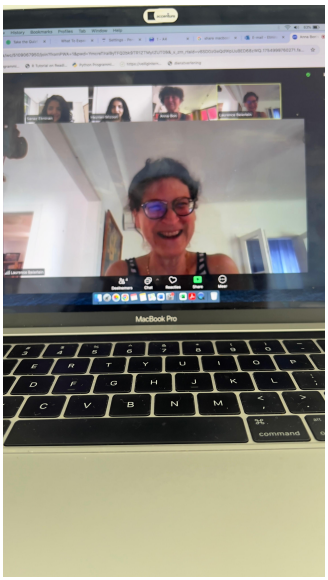


Figure 10: Interview with Laurence Beierlein.

She has never taught a hybrid class before, but will try in the future. She will combine elements of her own teaching before with elements of the toolkit. She makes flexible use of the toolkit, as you can see, as did we. She advised us to not give recommendations in our report. This fits our own takeaway. There is not one type of class to use when it comes to teaching. You need to use different design principles and strategies depending on your class. What type of class is it? How many students? What are they learning? What are you teaching about? Is it practical skill or theoretical? You need to adjust a course design accordingly to get optimal results.

Below follow the answers to our sub-questions:

1. *What factors make practical in-person training effective and successful?*

   The ability to ask questions and get direct answers and feedback. The teacher can evaluate in real time and correct. The ability to practise and get hands-on under supervision of a teacher.

2. *Which of these factors are available in remote training and which are not?*

   Immediate feedback and answers can be done in an online live session, but only if the teacher makes an effort. The teacher has to facilitate this. Hands-on practise is not possible online.

3. *How do learner engagement and motivation differ between online and in-person training?*

   An important factor is the size of the classroom. The environment doesn't matter as much. Sometimes to make a room smaller, breakout rooms allow for better involvement and engagement.

4. *What instructional design principles are most effective in practical online training?*

   The most important one for practical online training is the ability to practise in real life. Preferences for visuals is also strong. Most people don't want to just read walls of text. Other than that, the people we interviewed had different preferences. However, opinions differ on live sessions or pre-recorded visual material. So there is not one ideal online practical course type.

5. *What technologies and tools improve effectiveness of online practical training?*

   Platforms that are user friendly are important. In our interview with her, Laurence Beierlein mentioned that the Miro platform was confusing for her. Anna Bon and Hans Akkermans, our assessors, also shared this opinion. They said it detracted from the course a bit, because they had to learn how to use Miro at the same time. Furthermore, design frameworks and tools such as the Hybrid Learning Design Toolkit are useful in keeping track of a clear and consistent training design and also strategies to employ in cases of emergency and problems.

6. *How do students perceive the effectiveness of online versus in-person training for practical skills?*

   Students do not view simulated practise as equivalent to real life. They still want to be able to practise in-person to receive real-time feedback. They do not perceive fully online practises as a replacement.

Finally, to answer our main question:

How can you design a commercial, practical training course given remotely to be as effective and successful as in-person training?

You cannot do this in one specific manner. There is no one-size-fits-all design solution for the ideal online practical course. Also, it may have to be hybrid at least and the practical parts of the course need to be done in-person.

If someone wants to build a similar course, one needs to understand their main target for the course. The needs and expectations of the potential students need to be assessed and the course needs to be adjusted, accordingly. Frameworks, such as the Hybrid Learning Design Toolkit, can be very useful to help with the design of the progression of the course. Depending on the type of course you want to built, there are many activity and strategy cards to be used. There are plenty assessment and facilitation actions you can employ and use in practise. Of course, you can also add your own if you please, because course design is a flexible process. In fact, giving out a survey to the students to understand their expectations and needs of a course beforehand may be useful in making adjustments. This was also advised to us by Laurence Beierlein.

For future research, more comprehensive testing may be done. Perhaps it will be useful to conduct the full course officially and see what results it gives. How many of the students can you confidently say pass the course at the end of it? The course design may continue to be adjusted based on more testing. Also, the toolkit can be tested more in different settings and contexts. Perhaps to build a truly 'hybrid' course with some students in-class and some joining remotely. This was also originally intended to be the main use case for the toolkit.

4.1 Possible Use Cases with Linked Open Data

Linked Open Data (LOD) refers to freely available data that is linked to other data. This entails that the data is stored in such a way that it is machine-readable. Related information can be found more effectively, because data is interlinked with each other. Educational platforms can use LOD to link course information to other courses or related information. This can make it easier to discover online courses if they are linked to related material or relevant searches. LOD can also help with more flexible learning between different educational systems. Online courses can also be enriched by linking their content to external knowledge graphs. Course topics can be linked together with standardized identifiers. Linking and enriching data from various platforms also makes it easier to perform research into improving course effectiveness and design. The use of Linked Open Data in online courses and trainings can improve digital education as a whole, making it more accessible and suitable for the needs of learners.

5 Ethics

This study did not involve vulnerable groups or sensitive data, so a formal ethical guideline was not required. However, we made the goal of our study and our methods clear to the participant of both the interviews and the testing phase. We explained that the information given to us will only be used for the purposes of this study. We explicitly asked for permission to record the interviews, to take pictures during in-person testing, and to make answers and recordings available upon request. We have received such permissions from the participants.

6 Limitations

Some limitations of our research are lined out in table 3, where possible threats to validity for four different kinds of validity are laid out.

Type of Validity	**Possible Threat**
Internal Validity	We have selection bias as we specifically tested with people who had an interest in cosmetics. We also did not test with a control group.
External Validity	Due to the specificity of our case study, the results may not be widely applied to other cases.
Construct Validity	We wanted to test the efficiency and effectiveness of our course. We did not do the full on-site practise and training during testing because we did not think it was necessary for our study on online training. However, without evaluating the skills of the participants, we may not for sure speak of its effectiveness.
Conclusion Validity	We have a small sample size of 10 interviewees and a smaller sample of 4 testers. However, our overall conclusion is also based in part on outside research and experiences. And because our conclusion is not very rigid, we are confident that it is a valid one.

Table 3: Threats to Validity

7 Conclusion

This case study demonstrates that combined tools and frameworks such as the Hybrid Learning Design Toolkit are useful in providing a structural guideline and innovative teaching strategies in terms of activities, engagement, facilitation, assessment, and community building, etc. Though our testing highlighted areas where adjustments are needed in our couse design, we found that these adjustments cannot necessarily be applied to course design in general and are specific to our course in the practical cosmetics field. The use of design frameworks can support more effective and inclusive online learning, but there is no one-size-fits-all of what an ideal course looks like, as course design depends on too many factors, such as size of the class, student characteristics and wishes, course content, the level of practicality or theoreticality, the tools or equipment needed, etc. Course design should be flexible and a course needs to be adapted to the needs and expectations of the students. Keeping the online part of a course more basic, while leaving detailed information and more complex parts for live sessions or in-person sessions seems to be a good middle ground option. More research is needed to explore further options on how to effectively give a fully online practical course, perhaps with the use of VR to better simulate practice sessions accurately.

References

[1] George Bucăţa and Alexandru Baboș. 2023. Advantages and Disadvantages of Onsite Learning Compared to Online Learning. *Scientific Bulletin* 28, 1 (June 2023), 14–25. https://doi.org/10.2478/bsaft-2023-0002

[2] Oxford Learning College. [n.d.]. Online Education & E-Learning Statistics UK. https://www.oxfordcollege.ac/news/online-education-statistics/ Accessed: 2025-08-24.

[3] Doan Thi Hue Dung. 2020. The Advantages and Disadvantages of Virtual Learning. *IOSR-Journal of Research and Method in Education* 10, 3 (June 2020), 45–48. https://doi.org/10.9790/7388-1003054548

[4] Eurostat. 2025. More internet users turn to online learning in 2024. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20250124-1 Accessed: 2025-08-23.

[5] Peter Fadde. 2013. When to talk, when to chat: Student interactions in live virtual classrooms. *Journal of Interactive Online Learning* 12, 2 (Jan. 2013), 41–52.

[6] Imaginary Institute and Department of Social Sciences, University of Naples Federico II. 2025. *Hybrid Learning Design Toolkit.* https://imaginary-institute.github.io/hybrid-learning-design-toolkit/

[7] Joanna Krzyżak and Jolanta Walas-Trebacz. 2024. Online learning versus practical skills. (2024). https://doi.org/10.34866/mxk2-1j54

[8] Afang Li, Norhasmah Mohd Zain, Azlina Yusuf, Haiyan Deng, and Qi He. 2024. Development and effectiveness of online teaching on practical skills among nursing students: A systematic review and meta-analysis. *Nurse Education in Practice* 78 (2024), 103988. https://doi.org/10.1016/j.nepr.2024.103988

[9] C. Li and B. Irby. 2008. An overview of online education: Attractiveness, benefits, challenges, concerns and recommendations. *College Student Journal* 42, 2 (June 2008), 449–458. https://research-ebsco-com.vu-nl.idm.oclc.org/c/q5d5ah/viewer/html/frwximcjfn

[10] Hyochang Lim, Sang-Gun Lee, and Kichan Nam. 2007. Validating E-learning factors affecting training effectiveness. *International Journal of Information Management* 27, 1 (2007), 22–35. https://doi.org/10.1016/j.ijinfomgt.2006.08.002

[11] John E. Mitchell. 2020. How do we think about labs and practical skills in an online context? In *Emerging Stronger Lasting Impact from Crisis Innovation*, Beverly Gibbs and Gary C Wood (Eds.). Engineering Professors' Council, 35–50.

[12] Jason Openo. 2020. Education's Response to the COVID-19 Pandemic Reveals Online Education's Three Enduring Challenges. *Canadian Journal of Learning and Technology* 46, 2 (2020). https://doi.org/10.21432/cjlt27981

[13] José Quimí and Juana Alexandra. 2022. *Face - to - face vs online learning advantages and disadvantages.* Master's thesis. La Libertad. UPSE, Matriz. Instituto de Postgrado.

[14] Annelies Raes, Loulou Detienne, Ine Windey, and Fien Depaepe. 2020. A systematic literature review on synchronous hybrid learning: gaps identified. *Learning Environments Research* 23 (2020), 269–290. `https://doi.org/10.1007/s10984-019-09303-z`

[15] Elson Szeto. 2015. Community of Inquiry as an instructional approach: What effects of teaching, social and cognitive presences are there in blended synchronous learning and teaching? *Computers & Education* 81 (2015), 191–201.

[16] Pauline Lumina Gaea M. Viola and Erlinda C. Mones. 2024. Exploring the virtual learning landscape: Experiences and practices of social work students. *World Journal of Advanced Research and Reviews* 22, 1 (2024), 648–659. `https://doi.org/10.30574/wjarr.2024.22.1.1014`

[17] Qiyun Wang and Chanqin Huang. 2018. Pedagogical, social and technical designs of a blended synchronous learning environment. *British Journal of Educational Technology* 49, 3 (2018), 451–462. `https://doi.org/doi:10.1111/bjet.12558`

[18] Charlotte Lærke Weitze. 2015. Pedagogical innovation in teacher teams – an organisational learning design model for continuous competence development. *Proceedings of 14th European Conference on e-Learning ECEL-2015* (2015), 629–638.

[19] Charlottle Lærke Weitze, Rikke Ørngreen, and Karin Levinsen. 2013. The Global Classroom Video Conferencing Model and First Evaluations. *Proceedings of the 12th European Conference on E-Learning* 2 (2013), 503–510.

A Interview Layout and Questions

Doelgroep:
Vrouwen en mannen tussen 18 en 50.
Voldoende technisch ingesteld
Interesse in makeup, beauty
Willen trainingen volgen erover

Wat willen we weten uit het interview?
We willen weten hoe je het beste een online training kunt aanbieden. We willen weten van mensen wat voor verwachtingen ze hebben en wat ze er uit zouden willen halen. Wanneer is een online training effectief?

Duur:
20-30 min

Methode: Semi-gestructureerd interview

1. Introductie, rechten en toestemming (voorlezen)

Hallo, en bedankt dat je wilt deelnemen aan dit interview. We doen onderzoek voor onze masterscriptie aan de Vrije Universiteit Amsterdam. Ons doel is om een online training te ontwerpen die gericht is op kleine en middelgrote bedrijven in de cosmetica-industrie.

We zijn vooral geïnteresseerd in jouw ideeën en voorkeuren over online leren, ongeacht je achtergrond in de cosmetica. Jouw feedback helpt ons te begrijpen wat potentiële cursisten zoals jij verwachten van een ideale online cursus in dit vakgebied.

Het interview duurt ongeveer 10 tot 20 minuten.

De antwoorden in dit interview blijven anoniem. Mogen wij het interview opnemen? Mogen wij jou antwoorden publiceren en inzage beschikbaar stellen aan anderen? Zo niet dan worden jouw antwoorden alleen gebruikt voor onderzoeksdoeleinden.

Deelname is volledig vrijwillig. Je mag op elk moment stoppen of weigeren een vraag te beantwoorden.

Heb je nog vragen voordat we beginnen?

2. Algemene vragen

1. Wat is jouw leeftijd?

2. Wat is jouw etnische afkomst?

3. Wat is jouw opleidingsniveau?

4. Werk je? Zo ja, wat doe je voor werk?

5. In welke plaats woon je?

3. Ervaringen en verwachtingen

4. Heb je ooit eerder voor een training betaald?

5. Heb je ooit een online training gevolgd?
    a. Zo ja, waar ging het over?
    b. Wat vond je er leuk aan?
    c. Wat vond je minder leuk?

6. Op een schaal van 1 tot 10, hoe prettig vind je het om nieuwe vaardigheden te leren via een online platform? [1 is verschrikkelijk, 10 is de beste manier voor jou]

7. Kun jij jouw ideale online leeromgeving beschrijven?

8. Wat maakt een online training interessant en ideaal voor jou?

4. Voorkeuren voor inhoud en formaat

7. Als je denkt aan een cosmetische training, hoe denk je dat dat er inhoudelijk uit zou zien? (E.g., video's, live sessies, gidsen/syllabus, quizzen, forums...)

8. Op een schaal van 1 tot 10, hoe belangrijk is interactie tussen mensen voor jou in een online training? [1 is helemaal niet belangrijk, 10 is de belangrijkste factor]

9. Heb je een voorkeur tussen live sessies, opgenomen lessen of een mix?

10. Zou je praktische vaardigheden durven te oefenen na een online demonstratie? Waarom wel of niet?

11. Op een schaal van 1 tot 10, hoe belangrijk is het voor jou om feedback te ontvangen van jouw instructeur in een online training? [1 is niet zo belangrijk, 10 is de belangrijkste factor]

12. Hoe vaak zou je feedback willen ontvangen?

5. Motivatie

11. Wat zou jou motiveren om je aan te melden voor een betaalde online cursus?

12. Welke factoren zouden jouw interesse verliezen en/of ervoor zorgen dat je je afmeldt voor een online training?

13. Hoeveel uren per week zou jij bereid zijn te spenderen aan een online training?

6. Ontwerp voorkeuren

14. Als je zelf een ideale online training in cosmetica zou ontwerpen, hoe zou die eruit zien?

15. Is er een functie of element dat volgens jou een online training persoonlijker of boeiender zou maken?

16. Zou je overwegen om te betalen voor een dergelijke cursus?

17. Wat zou de cursus voor jou waardevol maken?

7. Afsluiting

Bedankt voor je tijd en voor het delen van jouw inzichten. Jouw antwoorden helpen ons bij het ontwikkelen van een betere en gebruiksvriendelijke online training. Als je geïnteresseerd bent, sturen we je graag een samenvatting van onze bevindingen zodra het onderzoek is afgerond.

Gegevensbeheer en ethische verklaring

- De verzamelde data wordt geanonimiseerd (er worden geen namen opgeslagen).
- Audio opnames worden alleen gemaakt met toestemming en veilig opgeslagen.

B Hybrid Learning Design Toolkit

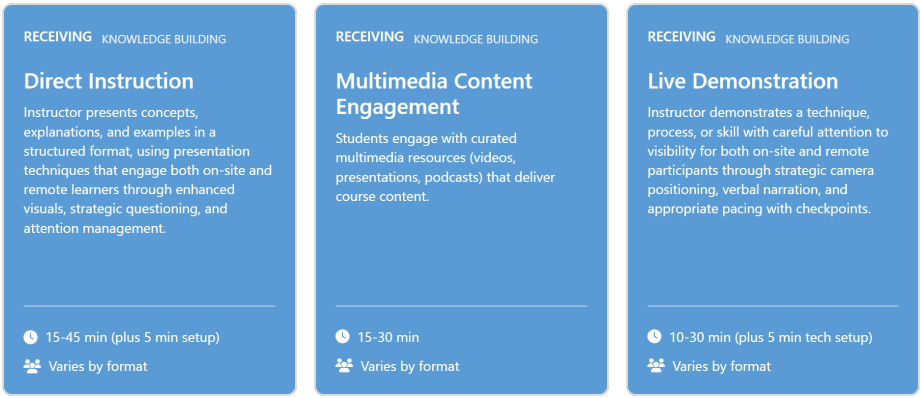


Figure 11: Receiving Activity Cards used

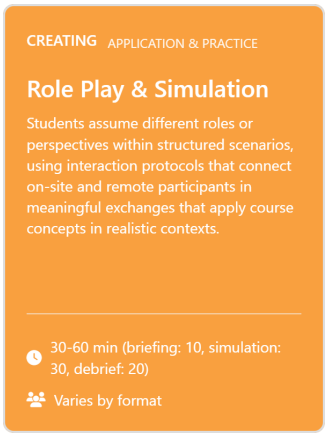


Figure 13: Creating Card used

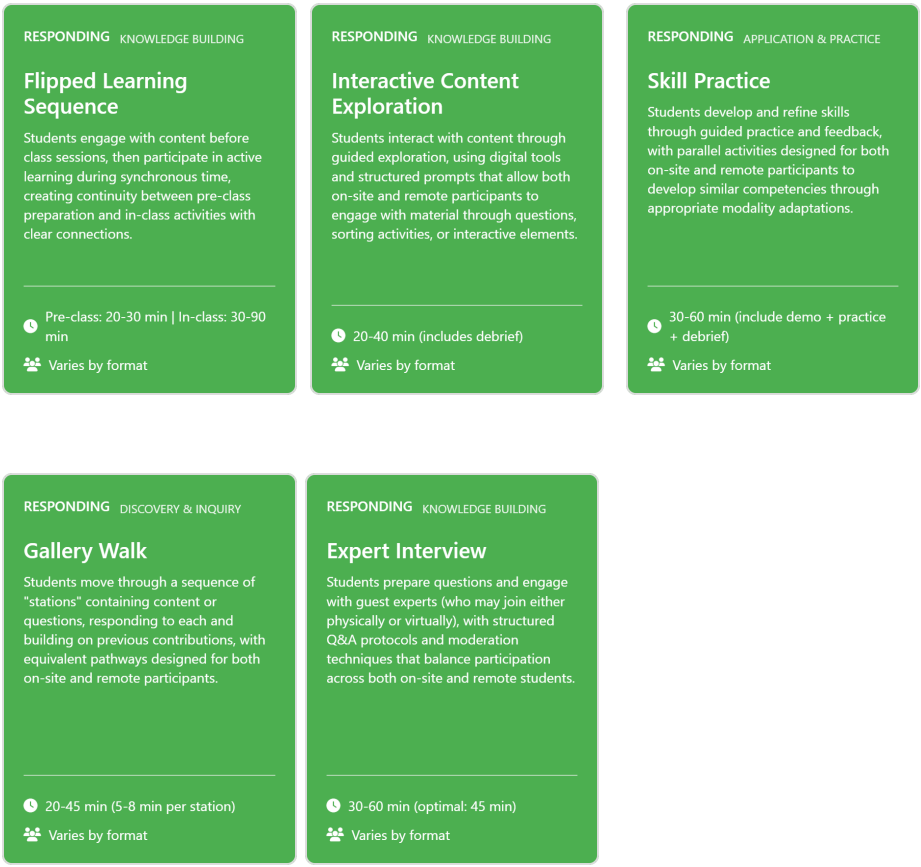


Figure 12: Responding Activity Cards used

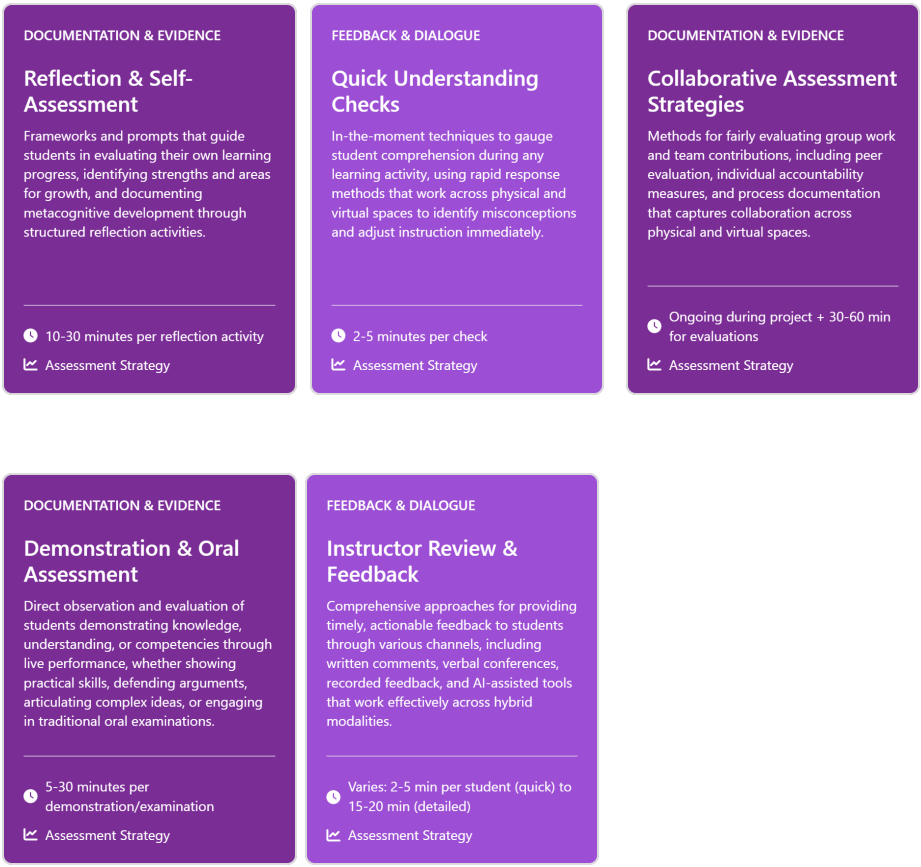


Figure 14: Assessment Cards used

HYBRID LEARNING ACTIVITY SEQUENCE CANVAS

COURSE TITLE:

DESIGNER(S):

IMPLEMENTATION LEVEL: Essential | Enhanced | Transformative

LEARNING FOCUS (Goals, Outcomes, Questions, Themes, etc.)

ENGAGEMENT LEVEL	SEGMENT 1 (min)	SEGMENT 2 (min)	SEGMENT 3 (min)
RECEIVING (Passive)	*Place activity card here*	*Place activity card here*	*Place activity card here*
	Space for activity details	*Space for activity details*	*Space for activity details*
RESPONDING (Active)	*Place activity card here*	*Place activity card here*	*Place activity card here*
	Space for activity details	*Space for activity details*	*Space for activity details*
CREATING (Constructive)	*Place activity card here*	*Place activity card here*	*Place activity card here*
	Space for activity details	*Space for activity details*	*Space for activity details*
DESIGN ACROSS SPACES	**In-Person Space:**	**In-Person Space:**	**In-Person Space:**
	Digital Environment:	**Digital Environment:**	**Digital Environment:**
	Remote Space:	**Remote Space:**	**Remote Space:**

Figure 15: Hybrid Learning Activity Sequence Canvas

C Hybrid Introductory PMU Powderbrows Course

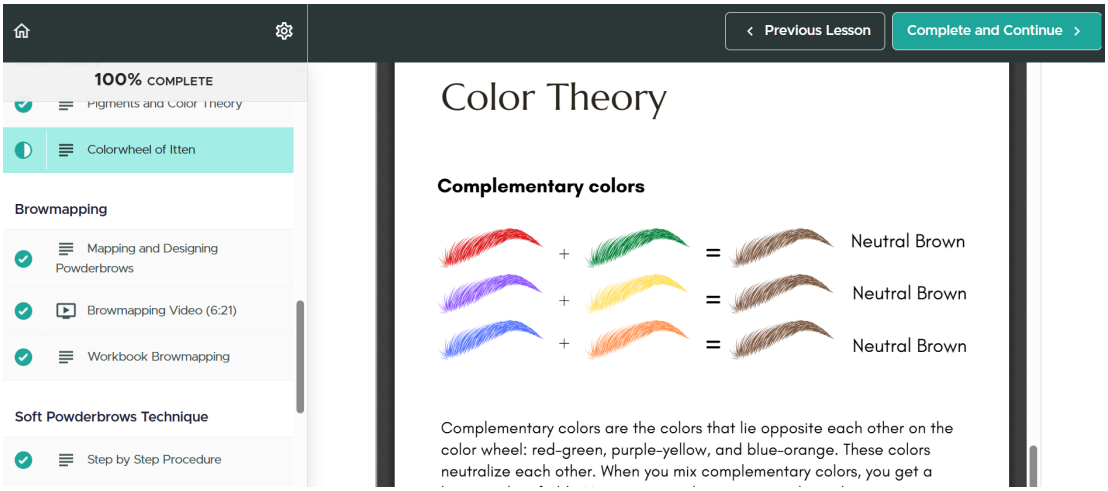


Figure 16: Color Theory in the course.

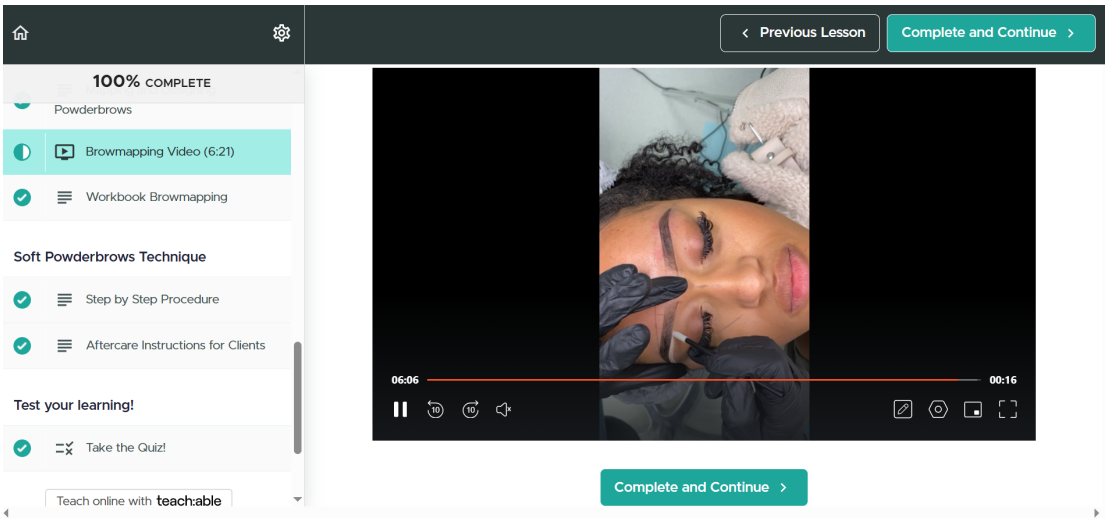


Figure 17: Demonstrative browmapping video.

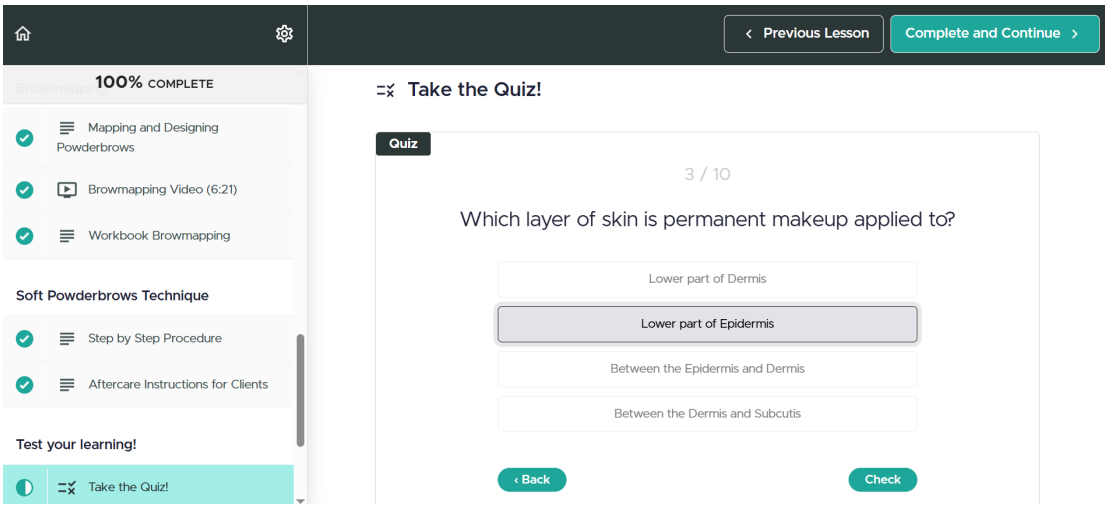


Figure 18: Self-assessment quiz.