

UX Professionals' Learning and Usage of UX Methods in Agile Environments in the U.S.

Introduction

All over the world, organizations increasingly look to usability and user experience (UX) in their design and development processes. To meet this need, UX communities are maturing in many countries and emerging in other countries. It is, however, a common concern that there are still many challenges in the UX professionals' work—even if the topic has been studied for decades, UX professionals are still facing challenges in their work. Across industries, professionals focusing on user experience use UX methods, which are methods (e.g., surveys, interviews, observations) for improving the user experience of products or services. Their lifelong learning can be best described as the continuous learning of skills, acquisition of knowledge, a need for growth, and applying knowledge creatively in different environments.

The research goal of this study is to investigate how UX professionals in the U.S. apply and learn UX methods in Agile environments. A qualitative approach was used to answer the following research questions:

- RQ 1: What do UX professionals in Agile environments consider when choosing UX methods?
- RQ 2: Where do UX professionals in Agile environments find information on UX methods?
- RQ 3: How do UX professionals in Agile environments learn about UX methods?
- RQ 4: Which methods do UX professionals use today and why?

Literature Review

This section introduces some background literature related to Agile UX environments, considerations when choosing UX methods (refers to RQ 1), pre-existing knowledge about the lifelong learning of UX professionals (refers to RQ 2 and 3). Furthermore, the section also presents popular UX methods and activities (refers to RQ 4). These topics are relevant to the research questions posed in this study and provide a necessary foundation for understanding the context in which this research was conducted. By synthesizing the existing literature on these topics, this section aims to provide an understanding of the current state of knowledge in the field of UX and to lay the groundwork for the other sections of this paper, including the methods, results, and discussion.

Agile UX Environments

Although Agile user experience design (UXD) and research are established research topics, there is always work to be done, issues to be addressed, and discoveries to be made. Unfortunately, very little research has focused on exploring the lifelong learning practice of UX professionals. Particularly, knowledge about UX professionals' learning Agile UX methods is lacking. Moreover, the studies on what methods are used in Agile UX are somewhat outdated, and software development processes are constantly changing. A literature study from 2015 found 83 published papers on usability and Agile. Other literature studies have concluded that within research on Agile, the theme of usability was the second largest in the number of publications (Gulliksen et al., 2004).

As the previous research shows, integrating UX into Agile is sometimes challenging. According to the interviews conducted by Cajander et al. (2022), "professionals working on Scrum projects must follow the outline and structure of the Sprints and the project plan, which means deadlines and timeboxing." The nature of Agile environments requires UX methods to be easy to plan and not require much time. Plus, Agile UX professionals need to be flexible. According to the interview results, UX professionals infrequently pick a UX method that does not fit into a Sprint (Cajander et al., 2022).

Combining UX and Agile methods is an example of a context-dependent issue, which means different teams in different contexts use various artifacts and techniques to create a shared understanding (da Silva et al., 2018). User-centered design must blend with the Agile organizational culture so that everyone in the team will understand UX as a team discipline rather than a role in the team. A solid understanding of Agile and UX cultures and practices can help developers and designers adjust their methodologies and adopt techniques to improve their communication.

Choosing Agile UX Methods

When a UX professional is considering what UX method to use in an Agile setting, they need to consider the following: similarities with the Scrum Process, effort expectancy, performance expectancy, cost expectancy, and social influence (Cajander et al., 2022). In the interview, participants concluded that the method should be iterative, quick, and adaptable, like how the Scrum process works. The UX method should start with one object in the first Sprint and then continue with the next object in the next Sprint. The UX method should also be easy to use, meaning it should not require too much effort. According to Cajander et al. (2022), most interview participants mentioned that a method needs to be valid and reliable. Some participants also noted that "a method needs to work at a low cost, and the data should be reusable and transferable to other situations (Cajander et al., 2022)." Additionally, UX professionals like a tool based on the social aspects of the tool. Often tools allowing collaboration are preferred.

Lifelong Learning Practice of UX Professionals

As stated previously, UX methods have been studied through the years. However, more is needed to understand UX professionals' lifelong learning processes related to UX methods in Agile environments in the U.S. Colleagues have been the essential source of learning, as presented in the Cajander et al. study (2022). Sometimes, the colleagues have been a source of inspiration to hear news about the field's latest trends, skills, and methods. Contrarily, the interviewees describe that literature was not seen as a critical source of learning. Instead, UX professionals prefer to work, learn together, and learn by doing.

In addition to colleagues, the results also suggest having mentors to teach and guide UX professionals in their work is valued. Cajander et al. (2022) stated, "the participants liked to have someone show them new trends, teach them how to apply the latest methods, and advise them on what to learn." UX professionals seeking mentors could be driven by the difficulty of choosing from many existing UX methods and keeping up with trends, social, and technological changes.

According to Inal et al. (2020), over 80% of the participants reported they were not affiliated with any international UX community. In addition, nearly 70% stated they had not had any chance to attend UX meetings such as conferences, workshops, or training programs over the last 12 months.

Popular UX Methods and Activities

Cajander et al. (2022) reported that the UX methods most frequently used by German and Swedish UX professionals were the following: prototyping, user testing, user journeys, and workshops. In another

study, the most common activities across the sample were prototyping, wireframing, sketching, mockup, and digital prototyping (Inal et al., 2020).

Gunther et al. (2004) also report on UX methods and their practical applicability. In their survey, comprising 100 UX professionals, usability testing received the highest rating, followed by prototyping and heuristic evaluations. Gunther et al. (2004) further report on obstacles to usability, including resistance to usability, usability unawareness, and time constraints.

Regarding UX methods, the methods that received the highest ratings were those involving users, being informal, and being concerned with design issues (Gulliksen et al., 2004). Methods such as expert-based evaluations, benchmarking, and questionnaires, that do not involve users, received the lowest rankings (Gulliksen et al., 2004). This implies that the user-centered perspective, or involving the users as active participants, has progressed among the UX professionals in Sweden. The results from the study indicate a preference for methods that actively involve users.

In another study, the participants usually recruited and met end-users in face-to-face meetings during repeated usability testing sessions with six test users or more, or in follow-up sessions (Inal et al., 2020). Interestingly, most of the participants did not perform remote usability testing. In addition, participants were expected to use various tools such as email, social media, and survey tools to receive quick user feedback during the development process. However, "78 (32.2%) participants did not use any tools for getting feedback from users, and 110 (26.1%), 108 (25.6%), and 68 (16.1%) reported that they used one, two, or three tools, respectively (Inal et al., 2020)."

Conclusion

There were two significant limitations of the study conducted by Cajander et al. (2022). First, the 13 participants were young UX professionals, and the average age was 35, making the results somewhat biased toward young people. Also, the research was conducted in Northern Europe, with participants solely from Germany and Sweden. In this research, participants with an older average age and/or participants who have been in senior positions for a while are studied since one of the research goals is gathering lifelong learning experiences. In addition, this study is based in the U.S. instead of Europe, like several of the other studies.

The research by Inal et al. (2020) had three limitations that should be noted in interpreting the study results. First, the study was about UX professionals' work practices in five countries, of which no one country is an English-only speaking country. Second, the survey was longer than previous surveys of UX professionals' work practices, which may have led to potentially more bias and lower completion rates than earlier surveys. Third, the data in the paper is from 2016, and UX professionals' work practices have changed since then.

Method

In this research paper, the methods section describes how the study was conducted and outlines the specific steps taken to ensure that the research was carried out to be replicable, aggregable, and data-supported. The following section includes the data collection and analysis procedures, participant information, and the equipment used in the research study. In addition, the section provides a rationale of why particular methods were selected for this study.

Data Collection

The primary researcher used a qualitative approach with remote, semi-structured interviews to gather data and ensure an understanding of the UX professionals. The interview was structured around the following questions:

1. What do UX professionals in Agile settings consider when choosing UX methods?
2. Where do UX professionals in Agile environments find information on UX methods?
3. How do UX professionals in Agile settings learn about UX methods?
4. Which methods do UX professionals use today and why?

Those four key questions were designed to uncover the decision-making process when selecting UX methods in Agile environments, as well as where and how professionals learn about new UX methods.

Each participant was presented and asked to sign the informed consent form. Once their consent was given, they were asked to schedule a date and time to be interviewed by the primary researcher. The interviews were audio-recorded with the participants' consent and transcribed verbatim. Following the research compliance guidelines, the data collected was anonymized and stored securely. Participants were informed of their right to withdraw from the study at any time without penalty and their right to withhold information.

Conducting remote interviews was the most logical method to use in order to answer the research questions. This study is comparable to the study conducted by Cajander et al. (2022) in regard to the similar research questions and methods. However, a significant difference is the previous study conducted interviews with participants in Sweden and Germany instead of the United States. An advantage of using remote interviews is that they enabled participants from all over the country to participate in the study. A potential consequence of conducting remote interviews is the risk of connectivity problems or other technological issues.

Equipment

The remote interviews were conducted with the participants' consent using Zoom as a recording and videoing software solution. Access to the internet was necessary, but participants were not required to turn their cameras on. The length of the interviews was around 30 minutes each.

Participants

Participants were identified through professional networks and online forums, and were invited to participate via email. They were provided with an information sheet and a consent form explaining the purpose, procedures, risks, and benefits of the study, and were given the opportunity to ask questions before deciding to participate. Once their consent was obtained, they were asked to schedule a date and time for the interview. There were five UX professionals recruited for the study, one woman and four men. The participants worked at five different companies across the U.S. On average, the participants had 15 years of UX work experience. They all worked in Agile environments.

Refer to **Table 1** on the following page for demographical information on the participants.

Table 1
Participants Demographics

Participant	Job Title	Years of UX Experience	Highest Education	State
1	Lead Human Factor Engineer	27	PhD, Information Science	TX
2	UX Design Lead	20	BFA, Performance	NM
3	Principle UX/UI Designer	14	BA, Design and Visual Communication	GA
4	UX Researcher	7	MS, Technical Communication Management	CA
5	Senior UX Researcher	6	PhD, Technical Communication and Rhetoric	GA

Data Analysis

Once all five remote interviews were completed, the research questions were answered by conducting a thematic analysis. A thematic analysis is referred to as a qualitative descriptive approach that is mainly described as "a method for identifying, analyzing and reporting patterns (themes) within data" (Braun & Clarke, 2006, as cited in Vaismorad et al., 2013). Since all five participants were asked the same interview questions, it was inevitable that common themes would be found in all the responses. Thematic analysis is a flexible and valuable research tool that provides a rich and complex account of the data (Braun & Clarke, 2006, as cited in Vaismorad et al., 2013). Six steps were followed for the analysis, which includes transcribing the audio files verbatim, familiarizing with the data, searching for themes, reviewing themes, defining and naming themes, and producing the report.

Results

After conducting interviews and analyzing data, this study provides insights into the decision-making process of UX professionals in Agile environments when selecting UX methods and how they learn about new methods. The main findings and themes that emerged from the data will be presented in this section. The study discusses the factors that influence the selection of UX methods, the sources of information that UX professionals rely on to learn about new methods, and the commonly used UX methods in Agile. In addition, the study highlights some of the key differences and similarities between the participants' responses. Overall, this study contributes to a better understanding of the current practices and challenges in UX method selection and adoption in Agile environments. The results provide valuable insights for both UX practitioners and researchers in the field.

Considerations When Choosing UX Methods in Agile

In this study, several UX professionals were interviewed to gain insights into how they choose UX methods in Agile settings. The participants had different approaches, but all emphasized the importance of considering the team's goals, the materials available, and the stage of the project when choosing a methodology.

One participant (Participant 5) discussed their approach of working backwards, considering what they hope to learn from the project before choosing a methodology. For early-stage discovery, they might use interview methods, while for testing design, they might use usability or A/B testing.

Another participant (Participant 2) highlighted the importance of considering where the client is in their process. If they start from scratch, the participant focuses on getting to know the client's goals and their users' needs. If they are not starting from the very beginning, they analyze the information they have and determine where they need to go next. A user-centered approach is crucial for UX designers and researchers. After all, their job is to speak for the user and ensure their needs are represented.

Another participant (Participant 3) emphasized the corporate needs and looking for methods that fit within the hybrid Agile design process. The UX team typically starts with user interviews to determine their needs and reviews the competition to see how they can improve on existing products. The UX team works closely with the project manager or business analyst to ensure everything is ready for the development team. During the development sprints, they work with the developers to answer any questions and update sketches based on their findings.

Another participant (Participant 1) stated that they choose UX methods based on the information they want to gather, regardless of whether they are working in an Agile setting or not. They do ethnographic research and conduct interviews with customers in the discovery phase, and do usability testing with prototypes once they have them.

Finally, one participant (Participant 4) discussed how they prioritize projects in an Agile setting based on deadlines. They emphasized the importance of strong communication and flexibility in this environment. The team meets frequently to discuss what they are working on and share any changes or new developments that arise. The participant suggested being adaptable and flexible, as priorities may change and adjustments may need to be made.

Overall, the participants' approaches varied, but they all emphasized the importance of considering the team's goal, the materials available, and the stage of the project when choosing a UX methodology in an Agile setting.

Where UX Professionals Learn About UX Methods

User Experience (UX) design centers around developing digital products that are easy to use and enjoyable for the end user. Therefore, it is critical for individuals who want to pursue a career in UX design or improve their skills in the field to understand UX methods. This section will focus on exploring the different approaches UX professionals can take to learn about UX methods, as shared by interviewees.

One interviewee (Participant 5) mentioned that they primarily look at various UX blogs and websites to learn about UX methods, such as the Nielsen Norman Group's website and [usability.gov](https://www.usability.gov). They also recommended checking out blogs that feature case studies and write-ups on how to use specific methods.

Another interviewee (Participant 2) shared that they find information on UX methods through websites like usability groups and organizations like the Nielsen Norman Group. They also utilize resources such as YouTube, podcasts, and social media platforms like Facebook and LinkedIn groups. They noted that compared to when they first got into UX, there are now many more accessible resources available, including TikTok videos about usability tests and methodologies.

A third interviewee (Participant 3) mentioned that they primarily find information online through up-to-date blog posts and articles that build off of previous concepts. They have also taken online courses for foundational practices and new concepts. In addition to learning from others, they keep a few side projects to experiment with and try new things before implementing them in high-risk environments. Overall, their approach to learning UX methods involves a mix of research and experimentation.

Another interviewee (Participant 1) recommended websites such as Boxes and Arrows and the Nielsen Norman Group, as well as two books: "Observing the User Experience" by Kuniyoshi et al. and "Universal Methods of Design" by Martin and Hanington. They described "Universal Methods of Design" as a "quickie Bible" with 125 ways to research complex problems. The book is organized by research methods and includes information on when and how to use each method based on different phases of design, types of data, and participation. The participant also emphasized the importance of using a suitable method to get the necessary information and being reflective in order to improve processes. Finally, they noted that conferences could also be a good source of new information about UX methods.

The last interviewee (Participant 4) mentioned that they find information on UX methods from various sources. For example, the usability graduate-level class they are taking provides good resource material. The participant also looks to industry-related websites, such as the Society for Technical Communication (STC) website, for information. In addition, they plan on attending an STC conference this year, which their work is paying for. The participant believes that the presentations from industry professionals at these conferences provide useful information on the latest and greatest in technical communication and user experience.

In conclusion, there are various ways in which individuals can learn about UX methods, including through online resources such as blogs, websites, and courses, as well as books, side projects, and conferences. Ultimately, it is important to have a mix of research and hands-on experience to truly understand and implement UX methods effectively.

How UX Professionals Learn About UX Methods

This section covers how UX professionals acquire knowledge about UX methods, as shared by the five interviewees. The interviewees mention various methods for learning about UX, including formal education, learning in their free time, learning from experts or colleagues, attending conferences, reading articles and journals, participating in webinars, and belonging to a community of practice. Interestingly, some interviewees noted that academia can be too theoretical, so they prefer a more hands-on approach to learning. Additionally, they emphasize the importance of gaining real-world experience and learning from colleagues with different educational backgrounds and experience levels.

The interviewees also discuss how they incorporate new ideas and techniques into their workflow to see what works best, particularly in an Agile setting. They highlight the importance of justifying the need for user research or design decisions to clients. Participants believe it is essential to avoid the waterfall approach of waiting until the end to review and test the product. They all agree that fixing issues earlier in the process is cheaper than waiting until the end because fixing them later becomes more expensive and time-consuming.

Overall, the interviewees' approaches to learning UX methods are a mix of formal and informal methods. They value the opportunity to learn from colleagues and experts, attend conferences, participate in webinars, and belong to communities of practice. Finally, they emphasize the importance

of incorporating UX methods into an Agile workflow and justifying the need for user research or design decisions to clients.

Popular UX Methods and Activities in Agile

The interviews with UX professionals revealed that the choice of the UX method in an Agile environment depends on the research questions, project timeline, and budget. One of the most commonly used methods is one-on-one interviews or focus groups. Still, different techniques such as Single Ease Question (SEQ) surveys, Likert scales, or open card sorting may also be used for specific tasks such as A/B testing, navigation, and information architecture.

The participants acknowledged the pros and cons of each method. For example, while interviews provide in-depth answers, they take a lot of time, and focus groups are susceptible to groupthink. They also noted that A/B testing can be challenging to get true usability metrics because the designs are still in the early stages and not fully functional. Also, wireframes may not be clear enough for clients to understand, and persona generation can be time-consuming without adding value to the final design.

The interviewees emphasized the importance of collecting user data to better understand how users are using the application, as well as generating a problem statement from client interviews to ensure the designs address particular personas. The UX professionals also highlighted the importance of selecting the appropriate method for each project and understanding the goal of the testing being done.

In conclusion, the UX professionals suggest combining UX methods, including data-driven approaches, quantitative feedback, and user testing, to get a well-rounded view of user needs while being mindful of the time and resources required to implement changes.

Discussion

The results of this study revealed valuable insights into the decision-making process, learning, and usage of UX methods by UX professionals in Agile environments in the U.S. This section provides an interpretation of the main findings and their implications while relating the key concepts to previous research. The discussion section also addresses the limitations of the study, provides directions for future research, and discusses the significance of the study.

Factors That Influence the Selection of UX Methods in Agile

The participants' responses showed that the decision-making process of UX professionals when selecting UX methods in Agile environments is influenced by multiple factors. The study found that UX professionals emphasized the importance of understanding the goals of the project and the team, and then choosing the appropriate method accordingly. They also highlighted the importance of considering the stage of the project, where early-stage discovery may require interview methods, while testing design may require usability or A/B testing. Additionally, some participants mentioned the importance of considering the materials available, such as the software tools and resources, to decide which method to use. These findings are consistent with previous research that has identified the importance of selecting UX methods in Agile settings based on project goals and constraints (Gothelf & Seiden, 2013).

One participant discussed their approach of working backwards, considering what they hope to learn from the project before selecting a methodology. This approach aligns with the user-centered design process that emphasizes understanding user needs and designing solutions to meet them (Norman & Draper, 1986).

Another participant highlighted the importance of considering the client's needs and goals when selecting a methodology. This aligns with research emphasizing the importance of understanding the client's goals and business objectives when designing UX solutions (Hassenzahl & Tractinsky, 2006).

Participants also discussed the importance of adaptability and flexibility in an Agile setting. This concept supports previous research that has identified the importance of being open to change and iteration in the Agile UX design process (Gothelf & Seiden, 2013).

Furthermore, one participant emphasized the importance of conducting ethnographic research and customer interviews in the discovery phase and usability testing with prototypes once they have them. This aligns with previous research emphasizing the importance of using various UX research methods to gather insights into user needs and preferences (Lazar et al., 2010).

Overall, the participants' approaches varied, but they all emphasized the importance of selecting appropriate UX methods based on project goals and constraints in Agile settings. The findings of this study have important implications for UX professionals and organizations seeking to improve their UX design and research practices in an Agile setting.

Lifelong Learning of UX Professionals

This section covers how UX professionals acquire knowledge about UX methods. The interviewees mentioned various methods for learning about UX, including formal education, learning in their free time, learning from experts or colleagues, attending conferences, reading articles and journals, participating in webinars, and belonging to a community of practice. Interestingly, some interviewees noted that academia can be too theoretical, so they prefer a more hands-on approach to learning. Additionally, they emphasized the importance of gaining real-world experience and learning from colleagues with different educational backgrounds and levels of experience.

These findings are consistent with previous research that has identified a range of sources for learning about UX methods, including academic programs, professional organizations, conferences, and online resources (Lazar et al., 2010). Studies have also highlighted the value of communities of practice in facilitating learning and knowledge-sharing among UX professionals (Cajander et al., 2022).

The interviewees also discussed incorporating new ideas and techniques into their workflow to see what works best, particularly in an Agile setting. They highlight the importance of justifying the need for user research or design decisions to clients. Participants believe it is essential to avoid the waterfall approach of waiting until the end to review and test the product.

These thoughts align with the literature on Agile UX, which emphasizes the importance of iterative testing and feedback throughout the design process (Gothelf & Seiden, 2013). This approach enables UX professionals to identify and address issues earlier in the process, ultimately leading to better outcomes for both the end user and the business (Patton & Economy, 2014).

Overall, the interviewees' approaches to learning UX methods are a mix of formal and informal methods. They value the opportunity to learn from colleagues and experts, attend conferences, participate in webinars, and belong to communities of practice. Finally, they emphasized the importance of incorporating UX methods into an Agile workflow and justifying the need for user research or design decisions to clients.

Popular UX Methods and Activities in Agile

The discussion of popular UX methods and activities in Agile environments revealed several insights into the types of methods commonly used by participants in this study. Participants reported using a variety of methods, including user interviews, surveys, usability testing, and personas. These methods were selected based on a range of factors, such as project goals, available resources, and team needs (Gothelf & Seiden, 2013).

Interestingly, some participants also mentioned using methods outside of the traditional UX toolkit, such as lean startup methodologies or design thinking. This idea highlights the importance of being flexible and adaptable when selecting and implementing UX methods in Agile environments.

Using popular UX methods and activities in Agile environments can also help address some of the challenges. For example, incorporating UX methods into the Agile process can help overcome time constraints by prioritizing research and testing throughout the development cycle (Gothelf & Seiden, 2013). Additionally, using methods such as personas or user testing can help communicate the value of UX to stakeholders and team members by providing concrete evidence of user needs and behaviors (Hassenzahl & Tractinsky, 2006).

Overall, the findings suggest that a range of UX methods can be effective in Agile environments, and practitioners should consider a variety of factors when selecting and implementing methods. Practitioners should also be open to using methods outside of the traditional UX toolkit and be willing to adapt their approach based on the needs of the project and team.

Limitations and Future Research Opportunities

The study has some limitations that should be considered when interpreting the results. First, the sample size was relatively small, with only five participants. A small sample size may limit the generalizability of the findings to larger populations of UX professionals. Second, the study relied on self-reported data from the participants, which means participants may have provided responses that they felt were more socially acceptable rather than reflecting their actual practices and experiences. Another limitation was a lack of funding, which made recruitment difficult. Additionally, there was a 16-week time constraint for the entire project.

The findings of this study provide a foundation for future research in the field of UX and technical communication. In a future research study, there should be more participants. A larger budget and longer timeline would allow more participants to be recruited. Expanding the sample size to include more UX professionals from different industries and states would increase the generalizability of the findings. Additionally, future studies could explore how different team structures and dynamics affect UX methodology choices in Agile settings. It may also be interesting to investigate how emerging technologies, such as artificial intelligence and machine learning, can impact the choice and effectiveness of UX methods in Agile environments. Finally, further research could explore the impact of different training and professional development programs on UX professionals' knowledge and usage of UX methods in Agile settings. By addressing these research gaps, the field of UX and technical communication can continue to grow and improve, leading to better user experiences and more successful projects.

Practical Implications

This study has important implications for both UX professionals and the organizations that employ them. UX professionals can use the findings to gain insights into effectively choosing and learning about UX

methods in Agile environments. For example, they should consider team goals, available resources, project stage, and user needs when selecting a methodology. By doing so, UX professionals can improve their decision-making process and ensure that the UX methods they choose are appropriate for the project.

Also, the study showcases the challenges that UX professionals face when selecting and implementing UX methods in Agile environments. These include time constraints, communication issues, and difficulty integrating UX with Agile development processes. By understanding these challenges, UX professionals can take steps to overcome them.

The study's results suggest that UX practitioners should actively seek opportunities to learn from their colleagues and mentors, and stay up to date with the latest UX developments by attending conferences and reading blogs. Practitioners should also consider joining online communities and forums to learn from their peers and validate their knowledge.

For organizations, the study offers insights into how they can support and enable UX professionals in Agile environments. For instance, providing access to relevant resources, such as training, mentorship, and collaboration opportunities, is essential to support UX professionals in their learning and development. In addition, organizations can better support UX professionals by addressing the challenges that UX professionals face, such as providing more time for UX activities, improving communication between teams, and integrating UX into Agile development processes.

Furthermore, the study provides insights into the similarities and differences between the responses of the participants and those of previous studies in the field. This information can guide future research and improve our understanding of UX method selection and adoption in Agile environments in addition to UX professionals' learning practices.

Overall, this study highlights the need for continued research and attention on the topics of UX method selection and adoption in Agile environments as well as the lifelong learning of UX professionals. By improving the understanding of the challenges and opportunities in this area, better support can be provided to UX professionals and ultimately improve the user experience of products and services.

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