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A Novel Pandemic Delivery Pattern for a New Digital User Experience Degree Apprenticeship

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Abstract. The teaching and study of User Experience (UX) is relatively new compared to more established fields. Additionally, the interdisciplinary nature of UX may make a consensus on teaching pedagogies and methods difficult to reach. To add to the complexity of teaching UX, is the emergence of the degree apprenticeship programme where apprentices study at a higher education university for 20% of their time while 80% is spent with their employer. This paper describes the process of launching a programme to respond to this unique and emerging context during a global pandemic. It focuses on reflections from lecturers on the challenges and reception of the programme and discusses the initial contributions this work can bring to conceptions of UX pedagogies, especially those delivered in an online delivery environment.

Keywords: Education · User Experience · Teaching · Curriculum Delivery

1   Introduction

1.1   User Experience Education

The study of User Experience (UX), the aspects of interaction with any product or service [1], is a relatively new area of study compared to classical and more established fields such as Human-Computer Interaction or Information Science. While the literature on UX education and pedagogy exists [2], it is relatively limited and does not always address the field's complexities well [3]. Over the past few decades, there have been calls for refined teaching methods [4]; however, these goals have remained elusive [5] and solutions are not necessarily received well. Moreover, the multi-disciplinary nature of UX may make it difficult to reach agreement on the use of specific pedagogies, models and methods to deliver the curriculum. As late as early 2020, the problems plaguing UX and design education were still being discussed and debated by leaders in the field [6].

While there is no firm answer, there is some agreement that experiential learning is essential to the study of UX and central to building the necessary competence for knowledge transfer and future success in the workplace [2]. This principle is often

embedded in UX curriculum in design schools where core skills are learned by solving real world problems [7]. This process is broken down into four parts: orientation, observation, practice, and play [8]. Students first learn UX theories and the general process as a core to proficiency [9]. Then, they start to approach the complexity of the process with feedback [10]. Following which, students use real scenarios to practice their skills [7]. Play, the final stage, is learning how to apply the design process in a controlled environment [8]. While this gives a foundation for the UX process, it does not address many of the "practice-level struggles", such as dealing with stakeholders, that practitioners deal with [11]. Additionally, it has been found that the learning process should also include soft skills necessary for the workplace [12].

It is often acknowledged that UX education needs to extend beyond usability or a focus on research methods to be more immersive [3]. While this is done through the more experiential style of learning detailed above and has shown reliable practical results, it is difficult to implement during the current pandemic where online and blended learning pedagogies are the norm. Instead of students getting valuable time in the studio and regular feedback from practitioners, most if not all of the learning is conducted online; and it is subject to the affordances of the platforms used and the various interpretations of online learning for students and staff [13, 14, 15, 16].

1.2 Degree Apprenticeships

In addition to the current complexities plaguing the education situation and the UX field, is the rise of the degree apprenticeship. A UK degree apprenticeship is a combined package of work and study where apprentices are employed by a company and paid a wage, whilst studying with a delivery provider, particularly (but not exclusively) in the case of degrees this may be within a university. British degree apprenticeships began in 2015 and are financially attractive to prospective apprentices, who receive both a salary and have their tuition fees paid indirectly by their employer via a national government apprenticeship levy. The apprenticeship itself has a set of requirements and competencies designed by employers (known as the Standard), with delivery providers designing the academic programme of study in response. There are many benefits with this approach, including offering the opportunity for employers to invest in and upskill their employees and universities gaining an insight into the current industry practices [17, 18]. It also seeks to encourage industry participation in higher education by producing graduates with specific vocational skills linked to employer needs. The UK degree apprenticeship system normally allows for 80% time on the job and 20% of the time studying and attending university. Whilst challenging for apprentices, it allows for learning and work that is focused, up-to-date, and relevant to the industry at large. With universities doing this by consulting with the employers regularly ensuring the learning goals are aligned.

2 Programme Development

Considering these challenges and opportunities, a new degree apprenticeship programme and delivery pattern for digital user experience was developed at Manchester Metropolitan University (ManMet). The development process was an embodiment of

the user-centred design philosophy and utilised agile methods from the UX field. The programme was designed in a cross-faculty initiative with planning, curriculum design, and unit development and instruction coming from four of the five faculties at ManMet and based on the Standard to meet the skills gap in the UK digital area [19]. It launched September 2020 with 22 apprentices on programme from 18 different companies, ranging from charities to multinational companies.

3 Delivery Model

The programme was developed to grow knowledge and skills to support various digital UX roles. It is a fully accredited degree that is undertaken by the apprentices over four years in a part-time capacity. There are 22 taught units with all being core, except for a specialism taken during the second year in either Sound, Coding, Design, or Storytelling. There is then a final large work-based project known as an endpoint assessment.

The programme is delivered in a sprint pattern to mirror industry practice, a pattern not typical of most UK academic programmes. Apprentices are released from their workplace for six four-day sprints each academic year for a total of 24 teaching days per year. With an additional six online question and answer sessions (IQA) between sprints. The two sprints a year deliver six units, equivalent to two-thirds of the standard undergraduate course year, meaning the programme runs four years rather than three. Each sprint delivers what is referred to as a Triad of units. These units are designed to deliver a fundamental understanding of concepts which build on each other but deepen in each individual unit. In the first two years, each triad is assessed synoptically with one project. This helps illustrate how the aspects and concepts interact with and impact each other. This also allows apprentices to work on projects for work as their assessments. The lecturers only assess the portions of the project relevant to their units.

The delivery model includes six teaching hours of each unit during the Sprint week (Table 1). The week starts with an introduction to the Sprint and Stand-up session lasting three hours. After a one-hour lunch break, the first unit's 3-hour session commences. On Day 2 of the sprint, the second unit's 3-hour session takes place followed by the third unit's first 3-hour session. The delivery pattern of the units then repeats on Sprint Day 3 and 4. The final three hours on Day 4 is a Skills Support Session and Sprint Retrospective.

Table 1. Example of the sprint delivery of units, Stand up, and Retrospective.

Intro & Stand up	Unit 1	Unit 2	Unit 3	Skills & Retrospective
Mon 10AM-1PM	Mon 2PM-5PM Wed 10AM-5PM	Tues 10AM-1PM Wed 2PM-5PM	Tues 2PM-5PM Thurs 10AM-1PM	Thurs 2PM-5PM

3.1 Pandemic Response

Originally, all days of the Sprint were to be delivered in person. However, the national UK lockdown in March of 2020 and subsequent government advice changed ManMet's delivery pattern to blended online learning, with the first two days designed to be

delivered on campus and the second two days of the sprint changed to online delivery. This changed again when ManMet had to move to complete online only delivery, as a result the programme thus far has been delivered as online only.

4 Reflections

Although a new programme, continuous feedback is designed into each Sprint and Triad to enable the programme team to reflect on the teaching and learning experience and quickly make any necessary improvements. The feedback streams were Sprint Retrospectives, staff-student consultation committees, peer-elected student representatives, student satisfaction surveys, and regular conversations with apprentices and employers.

At the end of every Sprint, apprentices end their time with a Retrospective session where they discuss what went well, what could have gone better, and what the next steps would be. The programme team immediately reflects on each Sprint, discussing the feedback and their thoughts and then iterates aspects of the teaching. For example, the timings of breaks, technology used to support learning, amount of group activities, and time spent on summative assessment activities were improved upon between Sprints 1 and 2.

Additionally, the programme recently received its first student satisfaction survey results. Overall, apprentices reported they were satisfied with the programme as a whole and when asked what could be improved stated that they felt there was nothing major to improve and that they felt heard because they saw immediate changes based on their feedback. While it seems that apprentices are satisfied and the programme is moving in the right direction, there are many areas for the programme team to reflect. This section outlines those initial reflections, their concerns, and what has been actioned.

4.1 Change in Delivery

As this programme was set to launch in September 2020, amid the Covid-19 pandemic, the delivery model changed to blended learning before the start of term. At this change, lecturers discussed initial concerns regarding running the workshop sessions. In the first iteration of the delivery pattern, all sessions were going to be fully face to face. This allowed for a short lecture to deliver theory and other relevant teaching before allowing the session to become a workshop where apprentices would work on applying their learning to real world business problems.

The switch to blended learning with face-to-face the first two days and online learning the second, would force time that was meant to be workshops to being online and leave more of the face-to-face time as lectures rather than experiential learning with guidance from lecturers. In the midst of identifying how this problem could and would be tackled in the coming Sprints, ManMet pushed all learning to online only. Lecturers initially found this challenging as it was announced days before the start of Sprint 1. Working with each other and through in-depth discussions, the programme team decided to move back towards sessions which aligned with the lecture-then-workshop style that was originally planned for normal delivery. As lecturers had been preparing and discussing online learning for the blended format, the teaching team was able to

take advantage of what they had planned regarding online learning and apply that to the experiential style they originally wanted to employ.

4.2   Creating a Community of Practice Online

Due to the change to online only learning, the teaching team worried about the creation of a community within the apprentices, something which is vital to the success of online learners [20]. Not only would online learning make community development difficult, due to lockdown restrictions and remote working many of the apprentices reported feeling isolated and that getting to know other people on the programme is difficult in an online environment.

Additionally, as these are apprentices rather than traditional full-time students, the programme team had hoped they would develop a Community of Practice (CoP). CoPs are groups which interact regularly and discuss their passion and build a shared repertoire of resources and a shared practice [21]. This would be beneficial to people new to UX, provide them with information about UX in a variety of industries and would allow established apprentices to expand their understanding, make new connections, and discuss concepts in a way which may bring new insights. Finally, the programme team was concerned with how to help apprentices make deep connections with the material, something often done with informal discussion or group work. This type of connection building does not lend itself well to online environments.

To combat these issues, lecturers encouraged apprentices to talk with their classmates and build their own community. To do this, apprentices created their own Microsoft Teams channel so that they could discuss work. Additionally, they created a Whatsapp group to encourage each other with their writing and to share advice and best practice. Lecturers also coordinated with each other to create small groups for their subject classrooms which did not have apprentice overlap. This allowed for apprentices to work with different people in each unit while discussing concepts and conducting small activities. The hope was to foster communication between apprentices. In the recent student satisfaction survey results, several apprentices commended this stating that they liked the small group sessions and that it allowed them to get to know the other apprentices in their cohort. Lecturers are continuing to offer class time for apprentices to build their community and cohort identity so that they may help each other succeed and build a CoP.

4.3   Online Teaching

While online teaching was originally viewed as a challenge, discussion within the programme team outlined several benefits for the apprentices learning in this way. For instance, online learning allows for sessions to be video recorded and allows apprentices to return to the material later. Additionally, online learning allows the programme team to employ some digital communication technology currently used in their work environments and helps them get more familiar with that technology. Finally, teaching digital UX to these apprentices online allows them to make further connections between what they are learning with critiques of the digital tools they are using for their learning. Overall, employers have reported that the online learning done in this programme mirrors the current remote working environment in a way they find beneficial.

While there are many benefits, there are several challenges that the teaching team highlighted in relation to teaching online at the start of programme development. Lecturers had discussions on how to ensure the online sessions would be engaging and interactive, that apprentices would feel confident with the material and their mastery of it, and that they would be able to build a community within their cohort. The teaching team met this challenge with the addition of interactive activities such as Kahoot quizzes, the use of small group work, and feedback sessions where apprentices could check their understanding on how to conduct methods and receive feedback on them. These approaches have been received positively by the apprentices. They frequently reported that this has supported their sense of community, their involvement in the sessions, and confidence with their learning.

Additionally, lecturers worried that apprentices would find the long learning days challenging and taxing. To combat that, an hour lunch break was offered between the morning and afternoon sessions and one short break was offered in the middle of each teaching session. Feedback from the apprentices showed that this was not enough to mitigate this challenge. In fact, apprentices reported that the online nature caused massive screen fatigue and that even with breaks they struggled towards the end of the day. Based on this feedback, the teaching team opted to institute a 15-minute break for every 45 minutes of online teaching. During this break, apprentices were asked to physically step away from the computer. Apprentices and the teaching team reported that this change has dramatically improved the quality of the teaching and learning experience.

Moreover, the affordances of the digital platforms implemented by ManMet had some impact on the practical aspects of teaching. Lecturers and apprentices found it difficult to demonstrate and discuss their sketching practice, as real-time feedback on work was impossible. The group was too large for the lecturer to ask each apprentice to show their work and doing so would have 'exposed' the work to the rest of the group, possibly bringing in confidentiality concerns. Additionally, the lecturer had no access to technology that would allow them to sketch, talk, and show the sketch at the same time. Sketching on paper required the apprentices to use a variety of techniques to digitise their work and submit it through Moodle, the online teaching platform. The lecturer then needed extra time to provide individual feedback on apprentices' work through Moodle. Creative solutions to meet this challenge are still being explored by the programme team.

The absence of being in the same physical space as the apprentices also meant that lecturers had more of a challenge monitoring apprentices' progress in group tasks, as each group had to be 'visited' individually, rather than observed and monitored in a more holistic manner. This presented challenges if a group had questions or points of clarity as the ability for a lecturer to multi-task in an online environment is greatly reduced. The apprentices too, noted that some activities could be challenging online. Nevertheless, lecturers observed apprentices in groups engaging in comparable discussion and achieving learning comparable to that of the physical classroom.

Similarly, the subtle body language 'cues' that a lecturer would be able to pick up on to indicate apprentices were struggling with tasks or concepts was absent. It was found that apprentices who were more comfortable with the tasks tended to be more active and confident broadcasting their ideas in the class sessions. Conversely, even though some apprentices who were unfamiliar with tasks indicated their discomfort with learning these skills, others may have found it harder to raise issues. However,

apprentices have taken initiative to email the teaching team to discuss their work and receive clarity. Due to this, there has been an increase in workload for the teaching team due to this shifting from in class to an outside of class activity.

5   Implications for UX Programmes

Although this programme is new, feedback from both apprentices and employers has been overwhelmingly positive, stating that the programme approach is satisfactory and appropriate. Based on this, the programme team has identified best practice for the delivery of digital user experience programmes online. Programmes delivered online should include frequent interactive aspects to keep engagement with the material high and build confidence. Additionally, examples and digital tools used for teaching should remain relevant and industry based. All feedback should be provided on work quickly to assist in building the skills necessary for the workplace. Moreover, physical issues related to online learning such as eye strain, and screen fatigue should be addressed early. Finally, the fact that every cohort of students is different needs to be accounted for and teaching strategies should be iterated based on what is working for that group of students.

However, there are challenges to running a programme during a pandemic that need careful consideration by programme teams. The dispersal of the teaching team requires more targeted communication between members to ensure adequate delivery of the programme while not increasing time spent in meetings. Aspects such as linking assessments means that lecturers on the units must be mindful that they are not misleading or confusing students when giving feedback or guidance that may relate to the other unit's section of assessment. Additionally, university systems which are not designed for rapid changes and flexibility, need to be carefully employed with creativity.

Overall, the real-world based model of experiential learning has proved effective based on feedback from the programme team, apprentices, and employers even if it is only conducted in an online only environment. Making the effort to include the apprentices and demonstrating responsiveness to their feedback, while demanding, results in a better experience for the apprentices and provides valuable data for the teaching team to use during iteration to enhance the effectiveness of the teaching and learning.

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