Swiftly Switching Project-Based Learning to an Online Short Course Format: Lessons Learnt from Covid Prompted Teaching Adaptations

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Summary

Project-based learning is an innovative and effective pedagogy for inclusive deep learning in higher education. This case study focuses on the education and childhood studies foundation level (a pre-university course for students who don't yet meet the entry requirements for the undergraduate course) project-based unit, 'EdLab: Practice and Innovation', and the adaptation of this to an online context due to the Covid-19 pandemic. The aim of the unit is to provide a space for students to engage in, and reflect on, educational innovation and creation as future education practitioners. The unit has evolved over the last 5 years into a carefully scaffolded student-focused curriculum, which offers a set of projects that grow in scope over the year in order to give our students the chance to develop their facilitator/educator skills. The assessment is a creative critical piece (often a video) reflecting on what was significant about the experience for each student, and a portfolio reflecting on engagements with all the projects. In-line with project-based pedagogy these assessments represent an opportunity to produce an artefact of 'real world' value (i.e. a practitioner video or educational resource), which students are asked to develop for an audience of peers and/or future employers. The unit is carefully considered, and pedagogically informed, to engage students in an active, meaningful and personalised educational experience.

In the academic year 2020/21 however, the global Covid 19 pandemic meant that swift and drastic changes needed to be made to the unit in order for it to be taught fully online. Further, our university adopted a 'block teaching' structure for the academic year in order to be flexible and responsive to the evolving situation, which meant that all units had to be taught over a 6 week period utilising the same amount of 'in-class' time as the previous 22 week iteration. This case study reflects on the steps taken to swiftly adapt an in-depth year long project-based unit into a 6 week block unit taught completely online through tutor reflections, data from research into previous student experiences on the course, and student feedback from the 2020/2021 cohort. The student data included is from 2 previous students (students 1 & 2) and 1 from the Covid cohort (student A), but is illustrative of more informal student feedback from the course. This case outlines the lessons learnt, and the implications for project-based units in regard to how they are taught in higher education.

Description of the Project

The project-based EdLab unit evolved out of a passion for offering students inclusive opportunities to engage deeply with subject content of educational innovation and practice, in ways which are meaningful to them and the wider community. For example, students can undertake the unit by working with community groups and schools on projects which are mutually beneficial, like developing a class for engaging pupils in digital education. There is some evidence that project-based learning (PBL) is inclusive to 'at-risk' students due to the way it can motivate classroom engagement through active and 'real' participation for diverse students (Creghan & Adair-Creghan, 2015; Cervantes et al., 2015). As a teaching team we have found it to be an inclusive pedagogy for our foundation level students who often have complex educational and personal contexts. Due to the nature of the level of foundation studies these contexts often include negative prior educational experiences, and as such, designing teaching and learning in ways which facilitate student choice and voice is positive for student engagement and achievement. PBL has its roots in discovery learning (See Bruner, 1966) and experiential learning (See Moon, 2004) in that it involves learners in active participation, constructing their learning for themselves. Further, PBL can be aligned to the critical pedagogy of Freire (2018) and hooks (1994), as well as linking to the reality pedagogy of Emdim (2011), because it has the potential to be designed in ways to involve students in pursuing projects which have relevance to addressing inequalities they, or their communities, experience. PBL offers these opportunities in ways that traditional teaching and learning methods do not necessarily. In practice, PBL learners participate in a form of negotiated 'real world' challenge, which they shape for themselves, and which requires the creation of something of 'real world value'.

In a review of the literature Thomas (2000, p3) states that PBL should comprise 5 defining features:

> 'PBL projects are central, not peripheral to the curriculum[...] PBL projects are focused on questions or problems that "drive" students to encounter (and struggle with) the central concepts and principles of a discipline [...] Projects involve students in a constructive investigation [...] Projects are student-driven to some significant degree [...] Projects are realistic, not school-like.'

In our unit projects are central to the curriculum, and we aim to be guided by where students want to go with their projects. To do this we offer students a series of 'mini-projects' related to 'real' educational contexts, which grow in challenge and scope over the year. In line with the second point above, we seek for these provocations to drive the

curriculum. For example, at the outset of the course we take students to alternative places and spaces of education, such as a local community garden centre, and we ask students to design a teaching and learning activity to make use of the location. In this instance, in line with point three, we aim for students to work as a team to research and investigate teaching and learning theories which can support their response to this provocation. Here students encounter central concepts and principles of the disciplines of education and childhood studies through developing their projects. In considering the fourth point, we have worked over the years to provide a context which is student-driven, but is also guided and supported to ensure sustained engagement.

Our foundation students often come to higher education doubting their abilities, or having had prior negative educational experiences. So whilst we make students central to driving the projects, we also scaffold the projects in order to give some structure to work within. Scaffolding is a process of supporting students to develop within their range of capabilities (See Vygotsky, 1978), so whilst PBL is about giving students choice and power, we provide a framework for students to work within so that this does not become unwieldy and impossible. For example, a project we pose to students is to develop a campaign to be delivered publicly on campus. This involves students selecting an issue for their campaign, working together to develop a central message, creating presentation materials, considering ways to engage a public audience, and in public speaking. Whilst we provide the provocation and input on developing campaigns, students choose their topic and how they present it. In this way the projects are 'realistic and not school like', but also supported and guided. This realism is also integral to the unit assessment. We assess students in two ways; firstly via a reflective portfolio on their project experiences, and secondly through a 'creative piece' which invites students to create and present what was valuable about the projects to them, in whatever way they choose. The idea is that these assessments can be communicated to a wider audience via online platforms, and may have employability value to the student, as well as content value to a wider audience. Thus our course has been carefully designed with project-based pedagogy in mind, and has been developed into a structure and context that works for our students.

Changes to Project Structure During Covid-19

Due to the Covid-19 pandemic restrictions in September 2020, our university changed the delivery model from semesterly/yearly units running concurrently, to sequential units taught in 6 week blocks followed by an assessment week. This was implemented to facilitate responsiveness to the evolving situation, for example, quickly switching between on-campus and online delivery. Further, unit assessments were altered to one summative assessment. Our year-long unit therefore changed from 2 hours per week over 22 weeks, to 6 hours per week (plus recorded lectures) over 6 weeks. The assessment became 1 video reflection of students' engagement in designing projects. Due to the Covid situation

in January 2021 the unit also had to be taught completely online. This had major implications for the unit, due to the nature of our students and group work, the inability to physically visit spaces, and the lack of opportunity to work with groups and schools.

Whilst the contact time given to the unit was largely the same, the structure was very different delivered online in a condensed 6 week format. In adapting the unit, I decided to specifically shape the content for the first 4 weeks, with each week addressing a theme in education and childhood studies; Week 1 was project-based learning pedagogy, week 2 spaces and places for learning, week 3 social justice in education, and week 4 considered games-based education, playing and tinkering. Each week students were set a project/provocation to work on, in a group or alone (due to technical difficulties with the online context), and each week we delivered a 3 hour structured project workshop via Teams for students to develop and share their ideas. For example, in week 3 I adapted the public campaigns project so that students developed an online poster/campaign. Each following week there was a space to present the project to peers and to receive formative feedback from peers and staff. The final two weeks were dedicated to reflecting on their experiences and learning, and for developing their assessed video reflection.

Despite the fact that the course had the same/similar contact time, and probably more curated online content than usual, the condensed timespan and online format affected student engagement in ways that I will explore in the following section.

Effects on Student Engagement of Adapting to the Condensed Online Context

Collaboration in the Online Environment

Developing project teams who can work together towards the project aim, and then reflect on, and learn from that process is vital to a successful PBL. It is a core facet, not secondary to the learning focus; the process of working on the project with others is a central part of the learning. In project-based learning students learn many of the 'graduate skills'/'graduate attributes' that universities intend for their students to graduate with, such as collaboration, creativity, self-motivation and social awareness, (See MMU, 2021). In the online context collaboration is certainly possible, but it is not simple nor straightforward (see Lou, 2004; Paulus, 2005; Thomas & Mcgregor, 2005). For our cohort of students, in 4 weeks of project work, only one project developed in a kind of cooperative/collaborative group. However, the students followed it up by developing their own individual strand to present the following week as they struggled to sustain group work online. Whereas, prior to the Covid restrictions, the majority of students worked in groups, and collaborated to develop projects. Here Student A commented on why they struggled to study online:

> *"At the beginning I found it quite complicated and stressful. I was even feeling like giving up the course at some points. After the first couple of months, I got used to it but still found it a bit difficult and signal/ internet issues tend to affect often. [...] I found online work a bit boring and felt quite isolated.[Sic]"*

Here Student A expressed what many students said throughout the course, that the online environment was not their preferred way of working, and that technical issues impeded their engagement and progress.

As previously stated, group work and collaboration are central features of PBL, and previously students have thrived on these experiences. For example, here students commented on the confidence and engagement that these projects facilitated:

> **Student 1:** "*Yeah, I think it's really, I think although they weren't experiences that I necessarily wanted, but pushing foundation students out of their comfort zone is a really really important thing to do because it prepares you for the rest of it.*
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> *As a fervent introvert, I was terribly nervous about it but being thrown into the waters like this out of the blue, so soon, was definitely an enlightening experience, and did wonders for our courage to speak up collectively, as in I noticed that students in the foundation year were also a lot more proactive in the first year, speaking up when the unit leader was asking a question or asking for input from the audience."*
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> **Student 2**: *[...] "the fact that we did those [projects] first on a small-scale within the EdLab unit itself, then we expanded it further and further over the course of the year, helped build that character strength to then stand there and do it on your own."*

Whilst students found the projects challenging, they were achievable and helped them to develop important skills which subsequently supported them in their degrees, and professional future.

It is therefore a shame that students in the online iteration of the course did not engage in collaborative projects, as they missed out on some of the valuable skills development that this can support. It may be the solely online environment, and also the condensed time, makes collaborative project-work difficult. Lui et al. (2010) argue that, 'Online PBL is a cutting edge learner-centered methodology, enabling a variety of learning styles.' Whilst this may be true, the cohort of students must be carefully considered. Whilst online PBL has some potential in our unit, our experience of swiftly implementing it with students who did not actively sign up for an online course, is that it did not have the same benefits of our in-person PBL in terms of collaboration and group work.

Condensed Time-Span Threatens the Benefits of PBL

As previously highlighted, during the pandemic our institution made the decision to deliver all units in 6 week blocks with an assessment week. This meant that our year long unit of 22 2-hour weekly sessions, shifted online to 6 hours per week, plus online recorded content. Thus the contact time of the unit remained the same, if not more than the previous iteration, but the span of time was much shorter; January to February in comparison to September to April. Further, due to the assessment requirement to reflect on progression and development between projects, we had to offer more than one project to engage with. I decided therefore, given the amount of hours per week, to offer one project per week for the first 4 weeks, with students aiming to complete 2, possibly 3, projects in this time. In the previous iteration students would have completed 3 to 4 projects in 44 hours over 22 weeks.

Whilst PBL has a significant number of benefits to learners, including deep engagement with learning, developing 'soft-skills', and lasting learning (Atkinson & Hunt, 2007; Dochy et al., 2003; Genc, 2015; Goldstein, 2016; Thomas, 2000), a common critique is that it is too time consuming (Genc, 2015; Goldstein, 2016; Zhou, 2012). Arguably this is a problem of the neoliberal context in which the pedagogy functions; institutions, and indeed students, expect learning to happen and be recognised and rewarded within relatively short timescales. In demonstrating the significance of PBL, I have interviewed final year students who can barely remember any of the units they have studied over their 4 years at university, who have vivid recollections of our PBL unit from foundation year, and can identify what they learnt from it. For example:

> **Student 1: "***I think it was a better way to apply the learning. Well obviously I still remember that really clearly because it was something that I valued. But the majority of essays that I've written throughout my degree I probably couldn't tell you about them. I think it is really important to be able to creatively apply learning. And I think EdLab provided that opportunity [...].*
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> *Oh I have very fond memories of that one too. I taught a group of, I think it was sixth graders, about the fundamentals of video game design, M was leading that little video game programming group and I was just fascinated. I've called back to it in future assignments. Especially when it came to self-reflective pieces, where I've talked about how my position has changed since then referencing the original as my original position."*

Arguably the project element of the unit makes it memorable, and effective PBL requires time. This is because the groundwork for PBL, such as developing teams, team working

skills etc., takes time. Additionally, students need time to reflect on project pilots and mini-projects in order to engage deeply with more ambitious projects. This process was integral to our off-line year-long model; time between projects for students to reflect on and develop their project work. For example, the first project students undertake is to develop a poster detailing and advertising a proposed educational project set in an educational setting they have visited on the course (i.e. the library or local garden centre). This is then presented to the group and students take feedback from peers and tutors. Subsequently we challenge them to develop and present a public campaign to the wider university audience. Next students design a micro-teaching activity incorporating creativity and STEM subjects, and finally students are free to design and deliver their own educational projects to peers and/or the public. This scaffolded process has been beneficial to engaging and developing our students, but is difficult to recreate within a condensed 6 week curriculum because it requires time off, and time in between, to develop and reflect, as well as to organise and deliver projects. As such, the projects of the recent cohort were much less developed than that of previous cohorts despite technically having the same amount of time.

Creative-Critical Assessment

Another key feature of our unit is the creative assessment in which we task students to reflect creatively on their experiences, to link them to theory, and to present their ideas in an accessible manner to an audience. Often this takes the form of a reflective video. Kent (2020) argues:

> 'Creative-critical assessment represents a response to the standardisation and marketisation of higher education while also potentially remedying a further shortcoming of critical pedagogy: that of concrete solutions to assessment.'

Creative-critical assessment is therefore an innovative and important form of assessment for inclusive practice and 'real world impact', which is aligned to PBL pedagogy. Students in the previous cohorts have found this assessment stimulating, meaningful and constructive;

> **Student 1**: "*I think that in foundation year that was the time when I enjoyed assessments the most, because they were different. They weren't just essay-based [...] Also, just the fact that it wasn't an essay, and having to, like being assessed on my creative abilities and being assessed on something I've actually experienced, and that I've put work into and experienced, rather than just Ok, find some references, do your reading, here's the taught content and write your essay."*

Whilst we retained the creative-critical assessment for the online condensed format, the results were not as coherent as the usual assessed pieces. Students reflected on their engagements and linked to some relevant theories, but the reflection on development, and the depth of engagement with theory was lesser than in previous cohorts. Again, this is most probably due to the condensed time format not allowing for slow cognition and reflection, as well as the online format disrupting the usual forms of engagement and collaboration with peers on projects.

Future Plans

It has been useful to reflect on the responses of one higher education institution to the Covid-19 pandemic, and to analyse the effects of a totally online context, and condensed time-span, on our project-based learning foundation unit. Whilst it is understood that these alterations may have had a negative impact on student engagement and learning, it is also worth recognising that the pandemic context more generally may have impacted this as well as stressing the benefit of continuing to provide the course for those who wished to engage. In going forward it will be important to ensure that we strive to sustain opportunities to engage with PBL in in-depth ways, which might mean creating opportunities for 'slow' and scaffolded engagement across the academic year, not only within the 6 week unit. It will however, be useful to retain some of the online content like the mini-lectures for students to engage with in their own time, but to also recognise and make space for students to build teams and team-working skills in whatever context is available over the coming academic years, and to recognise that this requires particular attention in the online sphere.

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