

Risks, reflection, rewards, and resistance: Academic perspectives on creative pedagogies for active learning

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ABSTRACT

In recent decades there has been a paradigmatic shift in higher education towards active learning, requiring educators to adopt student-centred approaches to teaching to promote deep learning and the development of essential graduate attributes. A 'Creative pedagogies for active learning' course was designed to offer academic staff an opportunity to take risks in developing innovative student-centred teaching approaches. While participants encountered 'dissonance' during the early stages of the creative pedagogies course, the course leads were able to support participants through this period of uncertainty and risk-taking towards successfully disrupting their own teaching practice.

This reflective analysis paper outlines the course and showcases several case studies of practice by participants. We also reflect on their experiences through a subsequent roundtable discussion. This revealed that the course had made a longer-term impact on some participants in terms of their teaching and assessment practice and showcasing this to other educators. However, resistance to change in some departments was noted, making it difficult for staff to implement creative pedagogies more widely in practice. Suggestions for overcoming resistance are presented, and the paper concludes with future directions for taking this work forward.

Keywords: active learning, academic staff development, creative pedagogies, reflective practice

Background: The need for change

In recent years there has been a paradigmatic shift in higher education institutions, placing an increased focus on pedagogies that support active learning (Cattaneo, 2017; Prince, 2004). There is no singular definition of active learning, though one of the earliest and often cited definitions states that active learning "involves students in doing things and thinking about the things they are doing" (Bonwell & Eison, 1991, p. 19). Petress (2008) differentiated it from 'passive learning' where learners are dependent on teachers with little motivation or independence, as distinct from active learners who are engaged partners in learning who "tend to be more creative" (p. 568). Felder and Brent argue that "active learning consists of short course-related individual or small-group activities [...] alternating with instructor-led intervals in which student responses are processed and new information is presented" (Felder & Brent, 2009, p. 2). In other words, student agency, participation and reflection are key to active learning.

As well as retaining knowledge more effectively and being able to apply it, active learning is more inclusive and facilitates the development of core learning skills “such as interpersonal communication, teamwork, problem solving, and critical thinking” (Kovarik et al., 2022, p. 4, citing Czajka et al., (2021)). The current focus on graduate attributes and employability also requires students to become creative problem solvers, team-workers, and critical thinkers (Mckendry et al., 2013). Alongside the shift towards student-centred learning, the increased use of technology-enhanced learning, particularly since the impact of the Covid19 pandemic, has highlighted the need for higher education to adapt to provide flexible, active learning opportunities (Whalley et al., 2021). This adaptation is only possible if our educators keep questioning and reflecting on their practice and their interaction with learners:

[...] enabling insight describes a form of continuous engagement that is foundational to reflexive practice, it implies an eagerness to continuously ask questions in each new or emerging context.’ (Ryan & Walsh, 2018, pp.5-6)

In this paper, we reflect on the scope of a postgraduate course for academics to enable them to experiment and reflect on the use of creative pedagogies, to create a more student-centred, engaging learning experience. Reflection about learning (Krishna & Strack, 2017) is paramount for the course introduced in this paper, since the course exists on a professional meta-level; the course participants are educators from a range of disciplines experiencing the course from a learner perspective, while reflecting on the integration of the learning into their own practice. In this course, we deliberately sought to push learners out of their comfort zone in a supported way, congruous with Vygotsky’s notion of the zone of proximal development, in a sustained way to encourage our participants to continually question the pedagogical norms of the discipline and university, providing:

[...] an educational environment that nurtures a curiosity which constantly interrogates the status quo [...] (Ryan & Walsh, 2018, pp. 5-6)

After presenting the structure of our course, and several case studies of participants’ practice, we subsequently reflect on the outcomes of a ‘roundtable discussion’ with participants, before presenting our thoughts on future directions for the course.

Creative pedagogies for active learning

At the University of Glasgow, we (authors NT and VHD) sought to create a postgraduate course which challenged university educators to reflect on their own teaching practice and explore theoretical frameworks which scaffold active learning. We intentionally stepped away from typical active teaching methods, such as problem-based learning or team-based learning, because these are covered through other institutional professional development activities.

Our optional 10-credit postgraduate course ‘Creative pedagogies for active learning’ sits within the PGCAP/MEd for Academic Practice programme. The decision to abandon the traditional approach to teach in very specific models—but to use theories, approaches, and methods of teaching, to challenge our learners—has been an intensive, and not conflict-free experience for us as academic developers. The aim to encourage our learners to interrogate and challenge their own practice, has at times caused cognitive dissonance. However, the learning and the quality of assessment that emerged from the courses so far has been noted not just by colleagues but also by external examiners. So, the risk of encouraging our learners onto a journey of reflexivity and of self-discovery, has been exciting, challenging and most of all rewarding.

It had an impact on our own practice; influencing us shaping and reshaping the course with each iteration, from the learning gained.

Our course focuses on teaching different concepts and theories that can be adapted by the learners to their specific disciplinary context, thus making learning authentic to our course participants and enabling them to make meaningful pedagogical decisions for their teaching practice. We encourage our learners to reflect on their existing practice, interrogating their approaches, with a strong ethos of peer support to engage in developing and experimenting with new teaching strategies, materials, and spaces.

The first run of the course, with co-authors as a 'pioneer cohort' (McLean, 2005) allowed us to work in partnership with participants to evolve our conceptual understanding, and to enhance the quality of our provision. On hindsight, we appreciate that we very much threw our learners into the 'deep end' in terms of bringing in the concepts of space and place, and disruptive pedagogies, early on, with five sessions comprising:

- (1) Introduction to the course focused on discussions on space and place. The development of a conceptual model (Tasler & Dale, 2021) emerged from our (VHD and NT's) reflections on the first run of the course, and considers the overlap between teacher, student and place domains, creating dynamic 'spaces' that encourage our learners to move beyond the classroom and contextualise their teaching practice more widely, within or beyond their discipline or the institutional boundaries. The conceptual framework provided the framework for the introductory sessions going forward.
- (2) Digital storytelling; this involves learners producing a multimedia presentation, often comprising an emotional element conveyed by voice narration and music/sounds to engage learners (Robin, 2008). Initially, we introduced this in the context of online spaces and theory of disruptive pedagogy (Hedberg, 2011).
- (3) Object-based learning, with a practical hands-on component in the Hunterian Museum Collections; a student-centred, active learning method typically associated with museum education, where learners engage with physical objects that have distinct characteristics and biographies (Chatterjee et al., 2016).
- (4) 'Learning landscapes'; a term derived from an Austrian educator (Kösel, 1997) who deconstructed traditional approaches to Didaktik (the theory and practice of learning and teaching (Jank & Meyer, 2019) of the idea of educational landscapes, which is further developed by Kidd (2015). We offered our cohort the opportunity to go to the university museum or local park to explore opportunities for learning and teaching.
- (5) Showcase event; this supported session enables participants to present their learning to date and any draft artefacts and reflections as part of the formative assessment aspect of the course, the other formative element being peer review of others' draft artefacts and accompanying narratives.

Although our course was based on the principles of creative learning and teaching (Jeffrey, 2006), it implicitly adheres to the defining characteristics of 'thick authenticity' in learning. Learners create one significant (or two small) physical or digital artefacts that our learners use in their own teaching practice, as well as a critically reflective narrative drawing on relevant theory. As the case studies demonstrate, not only were learners encouraged to reflect on and debate how course concepts relate to their practice, but the

assessment was designed to be authentic, within a real-life context for our learners who leave the course with tutor and peer-reviewed resources and skills that they can immediately use in their own practice. As outlined by Southcott and Crawford (2018, p. 95): “Effective and engaging assessment can help individuals connect who they are to what they do (Savickas, 2011) which is essential in the development of critically reflective educators”.

Learners’ voices: Case studies

The learners’ voices capture the three creative pedagogies we employed to encourage active learning: object based learning (OBL), digital storytelling, and learning landscapes. The case studies include the course name, number of credits as recognised by the Scottish Credit and Qualifications Framework (no date), and the intended learning outcomes (ILOs).

Object Based Learning

The first two case studies from our course participants explore OBL in Operations Management and in Engineering. Paula is a Lecturer in the Adam Smith Business School at the University of Glasgow. Dejan is a Lecturer in Instrumentation and Electronic Engineering in the School of Engineering and Built Environment at Glasgow Caledonian University (GCU).

Paula Karlsson: Using packets of crisps to illustrate quality

Course: Operations Management, postgraduate course (130 students), teaching quality management.

Credits: 10 credits at SQCF level 11 [master’s level]

ILOs: (1) know different dimensions of quality in manufacturing and service settings; (2) apply the quality gap model to analyse quality issues.

Theory on quality management is covered, specifically looking at different dimensions of quality that organisations need to think about when they plan/design/deliver their products. Students are asked to go into small groups (within the limits of doing this in a traditional lecture theatre) and different types and brands of crisp packets are sent around the room. Students are asked to really look at the packets, see what the packet says, what the product promises, and eventually touch and taste the actual crisps (test their crispiness, or taste their saltiness, etc). Note, I inherited the idea for the exercise [from the OBL session] and developed it further to fit my teaching and style.

This lecture is quite theory heavy, so I wanted to break up the session with a fun activity. As Beltrão and Barçante (2016) indicated, most theory in business courses is taught quite well in terms of traditional educational methods, but application is more problematic, although learning through experience, via a hands-on approach would be more effective. Asking students to analyse the packets of crisps in light of eight dimensions of quality should serve not only as a way for helping students remember the dimensions, but also to help them understand what the dimensions mean in a simple context, which should help them recontextualise the dimensions for other products as well (Sheridan, 2020) though Schmidt-Wilk (2018) questions whether understanding is enough as a result of an experiential exercise. While it is important for students to develop understanding of disciplinary concepts, any exercises should help students develop higher-order thinking skills and practice important management skills. However, as Chatterjee (2011), noted, objects can inspire discussion, group work and lateral thinking – all transferable skills.

Dejan Karadaglic: James Watt and the Industrial Revolution

Course: Industrial Case Studies, a part of MSc in Applied Instrumentation and Control. Cohort of around 20, mainly international students.

Credits: 15 credits at SQCF level 11

ILOs: (1) specify the instrumentation requirements for a given task; (2) determine the likely performance of a system based on instrumentation specification and the application.

During the work on the module, I produced two pieces of work, one was more of a storytelling nature, and it is about James Watt and the Industrial Revolution (Russell, 2014), which provides a cultural perspective for our mainly international students.

The other piece of work was more OBL (Hannan et al., 2016) where I took beer as the object, and beer production as the industrial case on which the ILOs could be best achieved. I went with my students to Glasgow Green, which is the place where the historical Eureka moment occurred, which arguably enabled the industrial revolution to start, and then to the West Brewery, adjacent to Glasgow Green, which was a very fortunate geographic collocation, and I explored teaching spaces and techniques. West Brewery is an award-winning brewery, rather small, but very well equipped and using the most advanced technology for beer production (Visit Scotland, no date).

I obtained very good student satisfaction ratings at the end, and students did very well at the assessment of this module, which I contribute mainly to the changes and additional activities I introduced through working on this PGCAP programme.



Figure 1 Pictures from field trip

Space and Place

The next two case studies are from Mark Charters, an Academic Development Coordinator in the Glasgow School of Art, and Mark Breslin, a Lecturer in the School of Education, at the University of Glasgow. Mark Charters is a colleague and counterpart to our (NT and VHD's) own roles as academic developers in this course, which made his and our experience into a serious meta-level professional identity negotiation. Mark Breslin, as an educator of schoolteachers, brought a unique perspective of two different educational systems to the course.

Mark Charters: Looking at space and place in academic development

Course: PG Cert Higher Education Learning and Teaching in the Creative Disciplines, Cohort of 15-25

Credits: 60 credits at SCQF 11

ILOs: (1) explore and evaluate a variety of spaces and places of learning; (2) reflect upon the role and impacts of space and place on your teaching and learning practice

Using an OBL approach (Chatterjee, 2008), I designed a small group activity to explore the important role of space and place in the learning process (Jaques & Salmon, 2007). The activity used a range of provocation cards displaying a variety of traditional and non-traditional learning spaces (see Figure 2). The cards were designed to challenge participants' conceptions of learning spaces and to promote discussion as to how learning spaces can be constructed and negotiated (Löw, 2016) between the teacher and the learner



Figure 2 Example provocation cards

The cards formed the focus of discussion as the object, allowing student choice and agency in choosing the object to which they would like to explore and consider. Through discussion, students reflect upon their own experiences as teachers and learners and related these to their chosen spaces. OBL affords the opportunity for participants to actively engage with ideas through materiality, enhancing knowledge acquisition and making linkages to past experiences, ideas and concepts (Chatterjee, 2008). The focus on

discussion as a vehicle for reflection through OBL and for developing collective understanding was key to the design of the activity. Learning through dialogue and interaction provide clear benefits as discussed by Brookfield and Preskill (1999) and support students to actively engage in the learning process (Laurillard, 2012).

The intention here is to move away from teaching about space through transmission (Tang & Biggs, 2011) and instead support learners to be active meaning-makers in the learning process (Drew & Mackie, 2011; Watkins et al., 2007).

Mark Breslin: Making learning active for trainee teachers

Courses: Educational Elective 3 (undergraduate); and Curriculum, Pedagogies and Practice in The Primary (postgraduate)

Credits: 30 credits each at SCQF levels 9 and 11 respectively

I am a lecturer at the school of Education at the University of Glasgow. I lecture to all undergraduate and postgraduate Initial Teacher Education (ITE) programmes where our approaches to learning are creative and cutting edge in pedagogical practice. It is imperative that our practices are not only of the highest standards but also fit with the National Guidelines of the Curriculum for Excellence (CfE) which is the National Curriculum for Scottish schools.

Within the School of Education, we have lectures of up to 450 students; however, our seminar groups are around 25 to 30. My area of expertise is health and wellbeing, and physical education where there are many government policies pushing for children in Scottish schools to lead and live healthier and active lifestyles due to issues such as obesity and mental health.

Research has highlighted that students are becoming less engaged within lectures (Goss & Sonnemann, 2017) and educators need to address andragogical practices to stimulate engagement and generate interest within lectures (Parsons & Taylor, 2011). For this reason, many of my lessons are examples of how prospective teachers can 'bring lessons alive' within schools where I utilise the environment on my doorstep to make lessons interesting, fun and above all, relevant to the children within schools. I am fortunate to have Kelvingrove park on my doorstep and I use this to my advantage where I demonstrate to students how to teach geography, science, art, maths, languages, history etc. through interactive approaches. For example, students will measure trees and use apps on their phones to find out types of trees within the park. Students also perform a heritage trail and use history of many of the sculptures within the park along with many other activities. It is important to have students active within lessons when possible as research has highlighted a direct correlation between Physical Activity (PA) and higher neurochemical levels of hormones such as serotonin, adrenaline and endorphins all of which facilitate mood and emotion (Acevedo & Ekkekakis, 2006). There are many other physiological changes that occur through PA; for example, higher levels of oxygen and plasma level increase, all of which, in turn, alter emotions and readiness for learning, as more oxygen will be carried to the brain in order to facilitate learning (Acevedo & Ekkekakis, 2006).

Digital Storytelling

The next two case studies are from Brianna Robertson-Kirkland, Lecturer in Historical Musicology, Royal Conservatoire of Scotland, and Donald Reid who is a Lecturer in Statistics for Life Sciences at the University of Glasgow.

Brianna Robertson-Kirkland: Representing musical history through digital stories

Course: Integrated Music Studies (Music History), BMus 1, Cohort of 80-90

Credits: 30 credits at SCQF level 7

ILOs: (1) an ability to research, select and analyse information appropriate to the task; (2) the development of clear arguments, supported by evidence.

Teaching music history to a large student body, whose cultural and educational experience is hugely diverse, often follows a prescribed assessment strategy which prizes recall of disparate factual information while failing to develop a conceptual understanding of the material (Voss & Wiley, 1997). Previously, my first-year undergraduate music students struggled to relate socio-historical issues to the development of musical style and technique. This impacted on their own playing as they failed to recognise historical stylistic idiosyncrasies present in the music (Haynes, 2007).

However, after integrating digital stories, which combine 'visual images with written text [to] enhance and accelerate student comprehension' the focus has moved away from recall and instead centres on conceptual assimilation, critical thinking and autonomous learning (Fry et al., 2002, p. 352; Robin, 2008, p. 222). Digital stories also enable the use of audio, which not only serves as a soundtrack but enables a deeper discussion about how this music has been created, a subject which is not often explored in a traditional music history curriculum (Purciello, 2017). The digital story I have created does not follow the biography of a particular singer, nor does it track the history of an event (Robertson-Kirkland, 2018). Rather, it utilises audio and visual materials to ignite curiosity, so that the students are encouraged to find out more about the source materials. The digital story is the starting point for several class-based activities where we question how music of the past was originally performed, how it was represented in music notation, how it was represented in other media such as iconography, fiction and reviews and how all this information can inform present-day performance. These discussions enable a deeper understanding of the source material and align music history with the student's performance activities, so that the subject is useful long after graduation (Huntington, 2014).

Donald Reid: Making statistics relevant in biology

Course: Fundamental Topics in Biology, cohort of 600

Credits: 30 credits at SCQF level 8

ILO: Analyse scientific data, including data collected in the laboratory.

Competency in data analysis is an essential skill for life science graduates continuing in academia and beyond. However, this teaching can be difficult as students often have negative views about statistics (Garfield, 1995). Challenges can also arise in its misuse in the media (Goldacre, 2014) or perceived relevance; for example, when teaching is not linked to the student's subject area (Smith & Staetsky, 2007).

Technology can play an important role in designing effective active pedagogies (Nicholl, 2001) including being creative in employing digital storytelling (Robin, 2008). This is also true of statistics teaching, where utilising technology can facilitate student learning (Basturk, 2005; Pratt et al., 2011). Engagement in the active learning of statistics could be increased where technology facilitates different learning tools such as concept mapping (Tishkovskaya & Lancaster, 2012).

My specific artefact is a digital presentation, created using Microsoft Sway, to illustrate how and why to use a specific useful statistical test, the General Linear Model, to answer an ecological research question. Students engaged with this in their own time as self-directed learning, parallel to contact teaching. The

presentation is a combination of photographic, video and figure artefacts with accompanying text. It was also a decision to try and link subject specific and topical issues, in this case microplastic pollution, with data analysis and increase the relevancy for students (Smith & Staetsky, 2007). This allowed students to link the importance of data analysis to their research question, but MS Sway allows visually for components of the ecological problem and data analysis approach to appear side-by-side, hopefully increasing relevance and connectedness of components. Students could engage beyond the traditional lecture, at their own pace and revisit parts as desired; important aspects of digital storytelling (Robin, 2008). The Sway also acted as a scaffold and interactive guide to their own analysis they were undertaking concurrently to further promote active learning.

Frances Therese Docherty: Making scents of organic chemistry through object-based learning

Course: 1st year Science Fundamentals Course (150 students) and schools outreach activity

Credits: 40 credits at SCQF level 7

ILOs: (1) Identify and name a number of different families of organic compounds; (2) Appreciate how chemists design molecules for use in the flavourings and perfumes industries.

Multi-sensory experiences during OBL can help students make associations and conceptualise their thinking in a new and different way compared to when they receive a traditional lecture style course. These activities can also lead to further active learning by stimulating discussion with peers, either formally or informally, that can further challenge and enable the students (Smith, 2016).

Students often find organic chemistry a challenging subject (O'Dwyer & Childs, 2017). While other branches of chemistry rely on mathematical analysis similar to that found in other STEM subjects, organic chemistry requires a different skill set including visualising three-dimensional structures on a two-dimensional surface. It is traditionally taught in a didactic manner where many structures are presented rapidly in class then the student must learn them by rote in their own study time.

A series of small containers with different scents were prepared. The scents were chosen to contain active ingredients from a large number of families of organic compounds which first year students are expected to recognise. Their smells are all very familiar and are common in many perfumes and flavourings in the food industry. The aim of this activity is for the students to identify the smell, select the appropriate card showing the structure of the molecule which gives this scent, and then match this to the relevant card showing which family this molecule belongs to.

The task of matching the cards to the structures and names also has a tactile element and promotes discussion with other students. To make the activity more tactile we added exhibits of some of the natural products giving us these scents such as pine needles and cloves and built molecular models of the structures. It is well known that there is a strong connection between smell and the brain's limbic system, an area closely associated with memory and emotion (Jackson, 2010), so this activity is likely to be more notable than a lecture or typical lab session.

Making sense of creative pedagogies: Roundtable reflections

After the students' work had been assessed, we invited them to participate in a roundtable discussion, six months later, to determine whether there had been a longer-term impact on practice. Ethics approval was granted by the College of Social Sciences, University of Glasgow. A one-hour discussion was facilitated with four course participants (authors MB, MC, KD and FTD). Participants were asked to reflect on how the

course had changed participants' teaching practice, and what barriers still existed in terms of incorporating more active learning opportunities. The discussion was transcribed and replayed to get a sense of the main themes. While this was not a true thematic analysis in the sense of creating codes and categories, an intuitive approach was taken to identify the key messages from participants.

The changes to participants' teaching practice

Mark B reflected on how the assessment element of the course – moving away from a traditional assessment towards a digital artefact – had a significant impact on his practice, allowing him to embed this in other aspects of his teaching, and showcasing this innovative approach to assessment to other academics:

And so we do a lot of active learning but it was the assessment aspect of the course [...] that, that I've found really engaging and the significant impact on how I'm going to be changing my assessment [...] And so rather than a 2000 word essay which seems to be the norm for a 10 credit course [...] we talk about assessments for learning and the AfL strategies that this really kind of brought everything together for me and the system [you] introduced me to was Adobe Spark. And you know, when I look at it, it was a 2000 word equivalent [...] I really enjoyed it, you know [...] And I actually showed it to my students and they went 'Wow, this is really good' [...] and they voted to go, the more of the active [assessments]. So much so that on Monday, [...] one of the professors has asked me to present it to the [research and teaching group].

The accompanying reflective narrative was the most transformative element of the course for Mark C, providing encouragement that he, as a fellow academic developer, was not just committed to student-centred learning in theory, but also in his own practice:

Active learning, sort of a foundation of the way that I've approached teaching, and I think what was really helpful was that doing the course helped me reinforce that and find a reflective narrative because I think the way that you teach is actually very- it's intuitive, it's responsive to what's there, but then reflecting back on it and linking it to the theories which I teach, and which we're involved in. It's just it's quite encouraging and reinforcing about saying, well, I'm at least I'm espousing what I think I'm doing. I think that's the biggest transformation on the course.

Frances reflected that her involvement in the course had allowed her to look at opportunities for students to develop transferable skills, this being a focus of the subject's accrediting body. She also reflected that her role as a lecturer in the teaching-focused job family meant that she had more time than research-focused academics to experiment with innovative teaching approaches, and she had a role as an early adopter to showcase new approaches. In addition, through outreach work, she was able to support primary school teachers to actively engage their pupils through active pedagogies:

So one of my artefacts was an outreach artefact and I've been, loads of outreach- to about 39 schools in the last six weeks [...] And the idea is to get into science with the kids, so we've been taking out, you know, lots of lots of activities for them. But the other part of it is to help support teachers [...] so part of it has been talking to them about active pedagogies and things they could be doing in the classroom and we can't be going out to do everything with them. Setting up like a support system that now that they know if they can contact us and we can get some ideas [...]

Resistance to change, and overcoming resistance

Despite the transformational experiences associated with the course, there was a recognition that there was a resistance among colleagues to implement changes, associated with workload, delivering only part of a course that was delivered with peers, quality assurance systems and 'entrenched practices'. Thus, while participants on the course recognised themselves as agents of change as early adopters, it was not always possible to promote radical change across the board. Dejan for example reflected that despite enjoying engaging in the course, and being able to implement an outdoor learning and digital storytelling experience that engaged his learners, it was more difficult to convince colleagues given their workload, despite showing interest in his artefacts.

[...] what I really found useful is the object learning, I mean making movies and making narratives about the objects. I found that very useful because well, it helps me when I present to students, I mean make their concentration, and to focus, on object. So I found that actually quite useful for me [but colleagues are] sceptical because they don't like more work [...] I mean they find [it] interesting, but they want to protect themselves from the additional work.

Contributing to teaching on a course taught by several other academics was a challenge noted by Frances in terms of introducing change, in terms of resistance to assessment redesign:

I think one of the things is, you know, the way our school works is you know you have a lecture course, maybe like 10 and 12 and you teach within the year to the year group, and then there [were] so many assessments and assignments. It's not specific for your course, so if I wanted to adopt some kind of active pedagogy assignment assessment, I would have to get everybody else on board. It would be quite a radical change for the department. And you couldn't just, you know, implement it tomorrow. You know it would be something like we'd have lots of meetings about maybe bring in, in a year's time or something you know. So I think I think that's just about resistance.

Mark C confirmed that his learners are inspired to change practice as a result of engaging with the PGCAP but may return to departments that are resistant to change:

They say that they get lots of ideas from undertaking [the PGCAP] and think about how to sort of make things more dynamic and more active but they go back to a department where actually there's a lot of entrenched practice and there's a lot of resistance to change. I think some of that is about the rigidity of quality systems which need challenging, but I think a lot of it is about culture and practice.

A supportive culture was clearly key to overcoming such barriers; Mark B noted his department were open to change, given the focus of their discipline and governmental expectations about school teaching to incorporate active learning, as well as enhancements to assessment practices being facilitated through a periodic subject quality review:

[...] we're quite open to change [...] We want to see and showcase how people do stuff because we need to keep up with education and policy and government. So we're really open to change in the School of Education. And plus, going back to the, this from top, the assessment as assessment feedback it's- I'm pretty sure it's one of the key KPI, key performance indicators of the university, so we are being told from up above to, you know, change things. We also had our PSR. That's the periodic subject Review last year. And assessment came up because staff are overworked with writing or marking 1000- 6000 word assignments [...]

Another solution to overcoming resistance was suggested by Mark C; targeting student representative structures, to upskill students in relation to active learning, was suggested as a way to overcome entrenched practice:

Targeting your student representative structures with this is really helpful, and so actually, how can you involve class reps or senior class reps in discussions about active pedagogy? [...] often they can act as very good levers of change, and actually you don't have to push [...] they just go back to their departments and go right 'Why aren't we doing this? Why aren't we engaging with different types of assessment? And it's an interesting slow burn as to how you can build a different type of community [...] class reps, I think are, they're an open door because they're interested in educational development.

Discussion: Reflecting on learners' case studies and impact on practice

We (NT and VHD) were delighted that the course participants were encouraged to explore beyond the boundaries of the course and submit artefacts for assessment that used learning and teaching strategies beyond the ones explored in the classroom. Some of the changes in our learners may not be as apparent in the tidy form that the case studies have been represented; the process of grappling with and applying new theoretical concepts around creative pedagogies was messy, and full of debates and discussions. At times, even we as educators were not sure where this deep engagement and reflection would lead us. So, it was a major highlight to experience the showcase session at the end of the course; a three-hour long session where participants shared and discussed their artefact(s) with their peers and ourselves in the classroom, getting formative feedback prior to submitting their summative assignment. We had feedback that this made everything 'come together' for learners. A true closure of this reflexive practice and establishing of new knowledge and teaching practices. On reflection, it is clear that our participants experienced a 'disorienting dilemma' but were able to resolve this through adapting their practice in light of peer and tutor feedback, gaining confidence in creative pedagogies to actively engage their learners. Thus, there was an element of transformative learning, as outlined by Mezirow (1994), which is at the heart of our conceptual framework (Tasler & Dale, 2021). In Table 1, we map the session elements to Mezirow's stages, and the narrative arc (Freytag, 1894) that NT had used as a course design principle.

Table 1 Aligning the narrative arc to Mezirow's stages of transformative learning in the course

Course component	Freytag's narrative arc	Mezirow's transformative learning
Introductory session; exploratory thinking about 'space and place'	Exposition	Disorienting dilemma Self-examination
Encountering creative pedagogies in the three sessions	Rising action	Critical assessment of assumptions Recognising that others experience discontent
Preparing for and engaging in the formative assessment and showcase Engaging in the showcase, feedback from peers and tutor	Climax	Exploring options for new roles and actions Planning a course of action Acquiring knowledge and skills
Summative assessment (artefacts and reflective narrative)	Falling action	Provisionally trying out new roles Renegotiating relationships
Embedding the practices in normal teaching practice, and associated scholarship	Denouement	Building confidence in new roles and relationships Reintegration into life based on new perspective

An element of course feedback that we particularly appreciated was that the course participants felt they were ‘travelling with us in the same boat’, wrestling with the ideas and concepts in partnership. So, the first year of running the course was a true form of co-constructing knowledge together with our learners (Dollinger & Mercer-Mapstone, 2019). The message from us for fellow academic or staff developers, is to be brave, sit with it, sit through it, and keep communicating with our learners through that process of becoming, and developing and changing their practice.

We encouraged our learners to share the outcomes of their learning through various Scholarship of Teaching and Learning (SoTL) activities, including this paper and various conference presentations (Sheridan et al., 2019a, 2019b, 2019c). Our learners are now champions of creative pedagogies for active learning, and we are proposing to bring them in as mentors for successive cohorts of the course, with a view to establishing and growing an active community of practice across and beyond the institution. This is just one example of how these internal courses can have an impact on the teaching culture and practices within an institution (Tribelhorn & Suter, 2018).

Despite these overwhelmingly positive outcomes, it was clear from the roundtable discussion that there remained some challenges in making wider curriculum changes, largely due to resistance from fellow colleagues. Solutions proffered included a supportive culture and working in partnership with students as change agents (Matthews et al., 2018). This would be a more holistic approach in terms of sustaining and extending the impact of the course, thereby supporting ‘academic agency’ in curriculum change, as explored by Annala et al. (2023).

Conclusions and future work

It is clear that engaging in the course had a transformative impact on participants in terms of engaging with creative pedagogies for active learning. The authentic assessment component associated with this was a core part of allowing participants to apply theory to practice. For some participants, the impact was sustained and had a knock-on effect in terms of supporting other educators to change their practice. However, resistance was also observed in terms of trying to introduce change more widely, in relation to entrenched practices. Having a supportive institutional culture was helpful, and involving students as change agents was offered as a potential solution to resistance.

Reflection on the first time running this course with our small pioneer cohort highlighted that the course is built strongly on a mentoring model, which is more difficult to scale up to the now more than triple-sized cohorts. We realise that at times we ought to provide more scaffolding during the course, as the cognitive dissonance had a negative impact on some course participants’ experiences, even if only temporarily. However, we feel that this temporary struggling is a crucial part of the meaning making process, of becoming aware of one’s positioning, disciplinary influences, and frameworks. In future work, we would like to explore the shaping of the educators’ identities in more depth, since this case study has highlighted complex relationships between learners, educators, subject matter, and space. We plan to support and grow a practice-sharing community with our participants, to continue to engage our academics in taking risks, reaping the rewards, and overcoming resistance to creative pedagogies for active learning.

Biographies

Nathalie Tasler, Principal Academic and Digital Development Adviser, University of Glasgow, has over a decade of work experience in Higher Education, and more than 20 years' work experience in the education sector. Her focus has been creative learning and teaching processes, marginalised learners and Scholarship of Teaching and Learning

Vicki H.M. Dale, Principal Academic and Digital Development Adviser, University of Glasgow, has 30 years' experience working in UK higher education supporting learning and teaching. Specialist areas of expertise include curriculum design, particularly in the context of active and blended learning, and researching learner experiences as part of SoTL.

Paula S. Karlsson is a Lecturer who joined Adam Smith Business School at the University of Glasgow in 2016. She is interested in third sector management, with a specific interest in partnerships involving public and third sector organisations, risk management and societal resilience. She also engages in numerous scholarship projects, including education in the digital age, and how the learning community can be improved for students.

Donald Reid, is a Lecturer, University of Glasgow. His research background is in ecology, specifically investigating relationships between physiology and behaviour in fish. His recent publications have further explored this area in relation to climate change and aquaculture. He has a keen interest in pedagogy and has presented on active pedagogies, technology and statistics teaching at multiple international conferences.

Frances Therese Docherty is a Senior Lecturer in physical chemistry in the School of Chemistry at the University of Glasgow. Her previous research interests involved the development of electron microscopic techniques to establish structure-property relationships in materials. She now specialises in research, practice and scholarship in chemical education.

Mark Charters, Glasgow School of Art (GSA), is an academic developer within the Learning and Teaching Team leading on GSA's engagement with the Scottish enhancement themes, coordinating GSA's academic development programme and supporting the delivery of the Academic Development and Promotion of Teaching (ADAPT) CPD framework.

Mark Breslin is a Lecturer in Physical Education, Health and Well-Being at the University of Glasgow. He has an extensive sports coaching background across many sporting domains from grass roots to elite top professional clubs and athletes. Mark has taught Physical Education and Sport & Exercise Science for over 20 years across all spheres of education from early level through to higher education in both England and Scotland

Dejan Karadagic undertook this work as a Lecturer in Instrumentation and Electronic Engineering at Glasgow Caledonian University. Dejan's research is primarily in Optically based Sensors and Imaging, but also extends to other areas of Engineering. Dejan is a Chartered Engineer (CEng), a Chartered Physicist (CPhys) and a Fellow of the Higher Education Academy (FHEA).

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References

- Acevedo, E. O., & Ekkekakis, P. (2006). Psychobiology of physical activity. *Human Kinetics*.
- Annala, J. Lindén, J., Mäkinen, M., & Henriksson, J. (2023). Understanding academic agency in curriculum change in higher education. *Teaching in Higher Education*, 28(6), 1310-1327. <https://doi.org/10.1080/13562517.2021.1881772>
- Basturk, R. (2005). The effectiveness of computer-assisted instruction in teaching introductory statistics. *Journal of Educational Technology & Society*, 8(2), 170-178.
- Beltrão, K. I., & Barçante, L. C. (2016). Teaching principles and fundamentals of business excellence to undergraduate students through a game. *Total Quality Management & Business Excellence*, 27(5-6), 681-698. <https://doi.org/10.1080/14783363.2015.1043116>
- Bonwell, C. C., & Eison, J. A. (1991). Active learning: Creating excitement in the classroom. 1991 ASHE-ERIC higher education reports. ERIC.
- Brookfield, S., & Preskill, S. (1999). Discussion as a way of teaching: Tools and techniques for university teachers. McGraw-Hill Education (UK).
- Cattaneo, K. H. (2017). Telling active learning pedagogies apart: From theory to practice. 2017, 6(2), 9. <https://doi.org/10.7821/naer.2017.7.237>
- Chatterjee, H. J. (2008). Staying essential: Articulating the value of object based learning. *University Museums and Collections Journal*, 1, 1-6.
- Chatterjee, H. J. (2011). Object-based learning in higher education: The pedagogical power of museums. <https://edoc.hu-berlin.de/handle/18452/9349>
- Chatterjee, H. J., Hannan, L., & Thomson, L. (2016). An introduction to object-based learning and multisensory engagement. In *Engaging the senses: Object-based learning in higher education* (pp. 15-32). Routledge. <https://doi.org/10.4324/9781315579641>
- Dollinger, M., & Mercer-Mapstone, L. (2019). What's in a name? Unpacking students' roles in higher education through neoliberal and social justice lenses. *Teaching & Learning Inquiry*, 7(2), 73-89. <https://doi.org/10.20343/teachlearninqu.7.2.5>
- Drew, V., & Mackie, L. (2011). Extending the constructs of active learning: implications for teachers' pedagogy and practice. *Curriculum Journal*, 22(4), 451-467. <https://doi.org/10.1080/09585176.2011.627204>
- Felder, R. M., & Brent, R. (2009). Active learning: An introduction. *ASQ higher education brief*, 2(4), 1-5.
- Freytag, G. (1894). *Freytag's Technique of the Drama: An Exposition of Dramatic Composition and Art*, translated and edited by Elias J. MacEwan. Chicago: Scott, Foresman and Company. Retrieved 5 November from <https://archive.org/details/freytagstechniqu00freyuoft>
- Fry, H., Ketteridge, S., & Marshall, S. (2002). *A handbook for teaching and learning in higher education: Enhancing academic practice* (2nd ed.). Routledge. <https://www.dawsonera.com:443/abstract/9781315763088>
- Garfield, J. (1995). How students learn statistics. *International Statistical Review/Revue Internationale de Statistique*, 63(1), 25-34. <https://doi.org/10.2307/1403775>
- Goldacre, B. (2014). Preventing bad reporting on health research. *British Medical Journal*, 349. <https://doi.org/10.1136/bmj.g7465>
- Goss, P., & Sonnemann, J. (2017). Engaging students: Creating classrooms that improve learning (2017-01). <https://grattan.edu.au/wp-content/uploads/2017/02/Engaging-students-creating-classrooms-that-improve-learning.pdf>
- Hannan, L., Duhs, R., & Chatterjee, H. (2016). Object-based learning: a powerful pedagogy for higher education. In *Museums and Higher Education Working Together* (pp. 159-168). Routledge. <https://doi.org/10.4324/9781315596471-15>
- Haynes, B. (2007). *The End of Early Music: a period performer's history of music for the twenty-first century*. Oxford University Press. <https://doi.org/https://doi.org/10.1093/acprof:oso/9780195189872.001.0001>
- Hedberg, J. G. (2011). Towards a disruptive pedagogy: changing classroom practice with technologies and digital content. *Educational Media International*, 48(1), 1-16. <https://doi.org/10.1080/09523987.2011.549673>

- Huntington, S. (2014, January 14). Why we should dive deep into studying music history. OUPblog.
<https://blog.oup.com/2014/01/studying-music-history/>
- Jackson, R. N. (2010). The effect of stimulating and soothing smells on heart rate and memory. *McNair Scholars*, 97.
- Jank, W., & Meyer, H. (2019). *Didaktische modelle* (13th ed.). Cornelsen-Scriptor.
- Jaques, D., & Salmon, G. (2007). *Learning in groups: A handbook for face-to-face and online environments*. Routledge.
<https://doi.org/10.4324/9780203016459>
- Jeffrey, B. (2006). Creative teaching and learning: Towards a common discourse and practice. *Cambridge Journal of Education*, 36(3), 399-414. <https://doi.org/10.1080/03057640600866015>
- Kidd, D. (2015). *Becoming Mobius: The complex matter of education*. Crown House Publishing.
- Kösel, E. (1997). *Die Modellierung von Lernwelten: ein Handbuch zur subjektiven Didaktik*. Laub.
- Kovarik, M. L., Robinson, J. K., & Wenzel, T. J. (2022). Why Use Active Learning? In *Active Learning in the Analytical Chemistry Curriculum* (pp. 1-12). ACS Publications.
- Krishna, A., & Strack, F. (2017). Reflection and impulse as determinants of human behavior. *Knowledge and action*, 145-167. https://doi.org/10.1007/978-3-319-44588-5_9
- Laurillard, D. (2012). *Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology*. Routledge.
- Löw, M. (2016). *Sociology of space: Materiality, social structures, and action*. Palgrave Macmillan US.
<https://doi.org/10.1057/978-1-349-69568-3>
- Matthews, K. E., Cook-Sather, A., & Healey, M. (2018). Connecting learning, teaching and research through student-staff partnerships. In *Shaping higher education with students: Ways to connect research and training* (pp. 23-29). <https://doi.org/https://doi.org/10.2307/j.ctt21c4tcm.7>
- Mckendry, S., O'Neill, D., Roberts, L., & Sheridan, N. (2013). Researching under-represented groups: how to empower students through targeted learning development support.
- McLean, M. (2005). The pioneer cohort of curriculum reform: Guinea pigs or trail-blazers? *BMC Medical Education*, 5(1), 26. <https://doi.org/10.1186/1472-6920-5-26>
- Mezirow, J. (1994). Understanding transformation theory. *Adult Education Quarterly*, 44(4), 222-232.
<https://doi.org/10.1177/074171369404400403>
- Nicholl, D. F. (2001). Future directions for the teaching and learning of statistics at the tertiary level. *International Statistical Review*, 69(1), 11-15. <https://doi.org/10.1111/j.1751-5823.2001.tb00475.x>
- O'Dwyer, A., & Childs, P. E. (2017). Who says organic chemistry is difficult? Exploring perspectives and perceptions. *Eurasia journal of mathematics, science and technology education*, 13(7), 3599-3620.
<https://doi.org/10.12973/eurasia.2017.00748a>
- Parsons, J., & Taylor, L. (2011). Improving student engagement. *Current issues in education*, 14(1).
- Petress, K. (2008). What is meant by "active learning?". *Education*, 128(4).
- Pratt, D., Davies, N., & Connor, D. (2011). The role of technology in teaching and learning statistics. *Teaching statistics in school mathematics-challenges for teaching and teacher education: A Joint ICMI/IASE Study: The 18th ICMI Study*, 97-107. https://doi.org/10.1007/978-94-007-1131-0_13
- Prince, M. (2004). Does Active Learning Work? A Review of the Research. *Journal of Engineering Education*, 93(3), 223-231. <https://doi.org/10.1002/j.2168-9830.2004.tb00809.x>
- Purciello, M. A. (2017). Reconnecting with history: Problem-Based Learning (PBL) in the music history classroom. In *Engaging Students: Essays in Music Pedagogy*, vol. 5 (Vol. 5). FlipCamp. <https://doi.org/10.18061/es.v5i0.7239>
- Robertson-Kirkland, B. (2018). Who am I? Retrieved 2023 from
<https://www.youtube.com/watch?v=oiLgZZ-yCMA&feature=youtu.be>
- Robin, B. R. (2008). Digital Storytelling: A powerful technology tool for the 21st century classroom. *Theory Into Practice*, 47(3), 220-228. <https://doi.org/10.1080/00405840802153916>
- Russell, B. (2014). *James Watt: Making the world anew*. Reaktion Books.
- Ryan, A., & Walsh, T. (2018). Reflexivity and critical pedagogy. In *Reflexivity and Critical Pedagogy* (pp. 1-14). Brill.
https://doi.org/10.1163/9789004384507_001

- Schmidt-Wilk, J. (2018). More Than Understanding. *Management Teaching Review*, 3(4),268-270.
<https://doi.org/10.1177/2379298118810834>
- Sheridan, N. (2020). A two-step model for creative teaching in higher education. *Journal of Learning Development in Higher Education* (18). <https://doi.org/https://doi.org/10.47408/jldhe.vi18.574>
- Sheridan, N., Dale, V., Breslin, M., Charters, M., Docherty, F., Karadaglic, D., Karlsson-Brown, P., Reid, D., & Robertson-Kirkland, B. (2019a, 3-5 September). Creative approaches to academic practice leading to the scholarship of teaching and learning. ALT Annual Conference, Edinburgh. <https://eprints.gla.ac.uk/220243/>
- Sheridan, N., Dale, V., Breslin, M., Charters, M., Docherty, F., Karadaglic, D., Karlsson-Brown, P., Reid, D., & Robertson-Kirkland, B. (2019b, 2-3 April). Exploring Space and Place through Active Learning Pedagogies 12th Annual University of Glasgow Learning and Teaching Conference, Glasgow. <https://eprints.gla.ac.uk/177914/>
- Sheridan, N., Dale, V., Breslin, M., Charters, M., Docherty, F., Karadaglic, D., Karlsson-Brown, P., Reid, D., & Robertson-Kirkland, B. (2019c, 18-19 July). Students as scholars: Academic development and the scholarship of teaching and learning Enhancing Student Learning Through Innovative Scholarship Conference, Edinburgh.
<https://eprints.gla.ac.uk/193617/>
- Scottish Credit and Qualifications Framework. (no date). About the framework.
<https://scqf.org.uk/about-the-framework/>
- Smith, D. P. (2016). Active learning in the lecture theatre using 3D printed objects. *F1000Research*, 5.
- Smith, T., & Staetsky, L. (2007). The teaching of statistics in UK universities. *Journal of the Royal Statistical Society Series A: Statistics in Society*, 170(3), 581-622. <https://doi.org/10.1111/j.1467-985X.2007.00482.x>
- Southcott, J., & Crawford, R. (2018). Building critically reflective practice in higher education students: Employing auto-ethnography and educational connoisseurship in assessment. *Australian Journal of Teacher Education*, 43(5), 95-109. <https://doi.org/10.14221/ajte.2018v43n5.7>
- Tang, C., & Biggs, J. (2011). *Teaching for quality learning at university: what the student does* (4th ed.). Society for Research into Higher Education & Open University Press.
- Tasler, N., & Dale, V. (2021). Learners, teachers and places: A conceptual framework for creative pedagogies. *Journal of Perspectives in Applied Academic Practice*, 9(1), 2-7. <https://doi.org/https://doi.org/10.14297/jpaap.v9i1.450>
- Tishkovskaya, S., & Lancaster, G. A. (2012). Statistical Education in the 21st Century: A Review of Challenges, Teaching Innovations and Strategies for Reform. *Journal of Statistics Education*, 20(2).
<https://doi.org/https://doi.org/10.1080/10691898.2012.11889641>
- Tribelhorn, T., & Suter, R. (2018). Evidenzorientierte Lehrentwicklung: Systematik der Interventionen. *Zeitschrift für Hochschulentwicklung*, 13(1), 275–297. <https://doi.org/10.3217/zfhe-13-01/14>
- Visit Scotland. West Brewery. Retrieved October 10 from
<https://www.visitscotland.com/info/see-do/west-brewery-p1179521>
- Voss, J. F., & Wiley, J. (1997). Developing understanding while writing essays in history. *International Journal of Educational Research*, 27(3), 255-265. [https://doi.org/https://doi.org/10.1016/S0883-0355\(97\)89733-9](https://doi.org/https://doi.org/10.1016/S0883-0355(97)89733-9)
- Watkins, C., Carnell, E., & Lodge, C. (2007). *Effective learning in classrooms*. Paul Chapman Educational Publishing.
<https://doi.org/10.4135/9781446211472>
- Whalley, B., France, D., Park, J., Mauchline, A., & Welsh, K. (2021). Towards flexible personalized learning and the future educational system in the fourth industrial revolution in the wake of Covid-19. *Higher Education Pedagogies*, 6(1), 79-99. <https://doi.org/10.1080/23752696.2021.1883458>