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Has your flip flopped? Discovery learning with extraordinary seminars

Justin O'Brien

Senior Lecturer, Royal Holloway, University of London

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Abstract

This instructional paper addresses the often encountered, but rarely published challenge of flipped classroom flops or failures, explaining key wrap-around interventions that were implemented to address observed flip shortcomings using a case-based methodology. Discovery learning with extraordinary seminars was conceived as a lean forwards or active pedagogy for an undergraduate digital marketing module. It comprised three distinct elements: firstly, never-the-same interactive seminars; secondly, conversational plenaries with industry practitioners; and finally, an emboldened 'fly from the eagle's nest and soar' approach to assessment. This learning engagement innovation aims to inspire higher education professionals to overcome their time and risk innovation hurdles. It concludes by sharing a summary of qualitative student feedback and instructor reflections.

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Introductory problem statement: Flipped flop in rooms full of strangers

Student experience insight across a number of larger business school cohorts from undergraduate teaching interactions in UK, France and Singapore highlighted that management students, even after three years studying together, were often found to be strangers to each other in the classroom. Rather surprisingly, students would not engage with each other, many stating that they only knew the person who sat next to them, operating, it seemed, as digital nomads who preferred to connect through their technology (Barkhuus & Tashiro, 2010). However, Marozzi (2012) identified university student socialisation to be an important factor that had not been widely considered, and found, notably, that interactions with other students can significantly influence student satisfaction. The author's observed experience of insufficient peer interaction in workshops was augmented by poor attendance (Parslow, 2012), limited preparation, and low levels of in-class participation (Bergmann & Sams, 2012). This typically resulted in expressions of dissatisfaction from the most engaged, confident and vocal students, who felt their learning environment had been diluted by their instrumental or surface learning peers (Hay, 2007) who were often strongly focused on primarily optimising their input to maximise their assessment performance.

Understandably, the deep learners (Beattie, 1997) resented the fact that the few carry a disproportionate workload and lamented the lack of quality sparring from their underprepared or absent peers. Student feelings of inequity were further exaggerated when a low engagement strategy was shown, if anecdotally, to result in strong grade performance. The author found that these problems were further exacerbated when a flipped or inverted pedagogy was deployed. A flipped classroom uses formal contact time to foster active learning using collaborative problem based learning (Song et al., 2017) by engaging beyond the material that had already been introduced to students before class, often using a mix of video and reading materials (Waldrop, 2013) aiming to develop more sophisticated cognitive abilities. It seems that pre-sessional preparation from all the students is an essential requirement for the success of a flipped classroom (Gilboy et al., 2015) and if absent it can result in an embarrassingly hollow in-class interaction and a disheartening flipped flop for enthusiastic pedagogic innovators who know they have failed to achieve their planned learning outcomes. It seems that savvy instructors learn to prepare not only the exciting flip content but also have a tactical plan B ready, to seamlessly implement when a class was unprepared (Song et al., 2017), resulting in a doubling of the preparation workload. This tactical juggling exercise, sadly, often requires the tactical deployment of a sub-optimal sage-on-the-stage information cascade (Parslow, 2012).

Flipping promise, but limited proof in the literature

Parslow (2012) astutely opines that students have changed, but lectures have not. Flipped classroom pedagogy appears to have evolved just after the millennium as a form of blended learning (Harris & Fu, 2017), when the internet had become mainstream, with early authors in the field comprising Rogers (2001) and Garrison and Kanuka (2004), inter alia. But despite its fifteen-year plus pedigree, the vast majority of research on flipped classrooms dates from 2015 or later (Talbert, 2018). This supports anecdotal evidence from pedagogic conferences that have indicated surprisingly low levels of flip adoption. Enthusiastically, Bergmann and Sams (2012, p. 1) claim that flipping can "reach every student in every class every day".

However, it seems the much-heralded flipped classroom fails to live up to its promise, even though published articles (e.g. Critz & Knight, 2013; Rotellar & Cain, 2016) tend to proclaim the technique's triumphal success, for both students and faculty. Outliers such as Straver (2007), however, found flipped students were less satisfied and Song and Kapur (2017) showed a reverse flip (explore in class, consolidate afterwards) to be more effective than both traditional and flipped methods. Bishop and Verleger (2013) found a generally positive view, albeit based on mostly single-group studies that explored student perceptions. Compelling meta-research by DeLozier and Rhodes (2017) highlighted the complex, multi-factor, and heterogeneous nature of flipped implementations. They found little extant evidence of the efficacy (or otherwise) of the nascent flipped technique compared with traditional learning approaches, perhaps because, as Song et al. (2017) posit, in-class engagements vary greatly and it is unclear which activities contribute to higher order critical thinking development. However, frank admissions of failure, such as Towey (2015), were very rare in the literature. Perhaps tellingly, Imhof (2017) found flipped teaching to be personally very enjoyable, particularly being able to get to know students in the class, but admitted facing an ethical dilemma when only 50 students in her class of 350 chose to be involved. Clearly the majority of Imhof's class believed the video support would be sufficient to pass the assessments.

It would seem that the appetite for publishing potentially reputationally damaging accounts (for instructors and institutions) of flipping failures is understandably small in this nascent body of literature. Hence also the potential explanation for the prevalence of positivist accounts of self-serving pedagogic innovation, such as Keengwe (2014) and even 'broken but here is how to fix it' accounts such as this paper. Given the promise of flipped classrooms, the lack of evidence of a groundswell shift in campus practice is rather surprising. Talbert (2018) found statistically significant quantitative measures of learning gain were quite modest, results varied widely according to implementation, but noted that it was unusual for flipped classes to do worse. Critically, they identified that active learning students showed higher satisfaction ratings, and flipped learning increased attendance.

However, students were often found to be very negative about flipped learning when first initiated. Waldrop (2013) pragmatically emphasises the terrible learning experience offered in passively listening to lectures, whilst highlighting that collaborating with friends using interactive modes of engagement can deliver superior learning outcomes for students. Could it be that the challenging implementation of the flipped implementation is what is holding the damned reservoir back? Talbert (2018) highlights the significant cost of both time and effort born by the innovative flipped instructor, which, combined with the not insignificant risk of loss of face and potential negative impact on continuing employment and/or promotional prospects, are perhaps the major barriers to more widespread adoption.

Methodological approach

This instructional paper uses a case study methodology to evaluate a flipped classroom pedagogic innovation that initially took place in the 2017/18 academic year for the Digital Marketing module MN2325, an elective pathway option offered in the second term of an undergraduate business and management programme. Talbert (2018) identifies that often, flipped classroom research has a tendency to be limited, using a single professor's single classroom context, and carried out using unsophisticated measurement tools with methodological flaws. They also state that it is usually not generalisable, too often carries an unintentional 'sales' bias, but demonstrates pedagogic heart and passion.

The author was responsible for teaching all the ten, two-hour plenary lectures and all six repeats of the weekly one hour seminars. Student testimonies were taken from the Digital Marketing course evaluation surveys, with responses from 30 of 118 registered students. Further student testimony was collected in the summer, following the completion of the learning programme, via in-depth interviews with five students, where it was hoped students were able to reflect more profoundly about their module learning, with the benefit of no assignment or exam deadlines and knowledge of their year's grade performance profile.

The paper aims to primarily provide the academy with a detailed instructional account of the innovation, addressing a gap in the extant literature (Rotellar & Cain, 2016), highlighted above, that addresses the much heralded flipping promise but reality of flopped adoption, and its limited evidence of efficacy according to DeLozier and Rhodes (2017). Provocative, emotive language is deliberately deployed, passionately to inspire other educators to implement their own flipped pedagogic innovations. Qualitative evidential results, from students and the instructor, are provided that very much recognise and embrace the limitations and shortcomings of this single instructor, single class approach, as outlined above by Talbert (2018). This research investigation was validated by Royal Holloway University of London, School of Management's ethics approval process.

Successfully implementing the flipped classroom

According to Bishop and Verleger (2013) students prefer in-person lectures to video, but interactive classrooms over lectures. The key to making flipped classrooms work better, it appeared, was to develop peer-to-peer social ties to engage students in the early stages using ice-breakers to build trust, and to design diverse seminar activities that were rich in social interaction (Flynn, 2015). To make allowances for the competing time demands students experience during the end of term or semester assignment rush, strong motivation was provided to undertake wider reading early and prepare for classes by explicitly linking learning activities to the assessments and employability, becoming work ready.

In recognising the challenge of successfully implementing flipped classrooms, Rotellar and Cain (2016) call for the academy to share good practices and offer detailed implementation guides. This paper, therefore, continues by explaining the discovery learning philosophy before discussing the origination of the extraordinary seminars concept. A summary description of the workshop series is then outlined before the paper concludes with student reflections on their perceptions of the learning experience.

Learning to fly with discovery learning

Perhaps with the exception of (optional) dissertations, business school pedagogy, with its tightly scaffolded assessment regime and adherence to perfunctory learning outcomes, has unlearned the joy of learning through personal discovery journeys. Would you like/have liked your child(ren) to have developed their primary maths competency by measuring the height of sunflowers planted in the school garden? Discovery learning (Hammer, 1997) embraces the idea of the unintended learning outcomes (Jones, 2007), by driving a profound exploration of a topic, rather than following a risk free, metrics friendly, painting-by-numbers structural approach that can reward surface learning skating. It embraces the reality that in fast moving fields, such as digital marketing, the instructor does not know everything and that the curriculum can and perhaps should be extended into the unknown zone (see Barnes, 2008).

Although it must be recognised that pure, unstructured discovery learning has been criticised (e.g. Mayer, 2004), as part of a diverse diet of assessment there is a place for less tightly scripted and more open-ended assignments. Rather than requiring a safety rope-guided regurgitation of a digitised SWOT, PESTEL or Porter's Five Forces analysis, treading the same boringly predictable furrow that previous generations of business school students have followed, discovery learning uses a more flexible, non-linear approach. For example, immersive, experiential open space learning (OSL; Monk et al., 2011) workshops that utilised text-free images to develop a grounded analysis of the good and bad of social media, or a gamified escape room competition, where clue solving against the clock unlocks an amusing Rick Rolling video surprise, whilst familiarising students with new analytical tools. The final, real world audit assessment

emboldens students, like a fledgling's first flight, to choose to take to the air of their own accord, in their own way, rewarding scholarly endeavour more than for reaching any pre-ordained destination. This is an approach, which very much embodies Royal Holloway University of London's motto; *esse quam videri*, 'to be rather than to seem' (Royal Holloway, n.d.).

The discovery learning concept, seemingly successfully trialled on a second year digital marketing module, used a combination of extraordinary seminars, significant industry plenary conversations (not lectures) and a provocatively unstructured final assessment. The aim was to address dissatisfaction amongst the more engaged students, who were resentful at the failings of a flipped classroom approach, namely inconsistent and inequitable pre-class peer preparation. In the same way that innovative Dutch towns have enhanced road safety by controversially removing street signs (Hamilton-Baillie, 2004), discovery learning encourages students, like nervous drivers approaching a signless junction, to take risks and explore their ambiguous environment.

In so doing, students not only developed resilience but the confidence to take on extreme problem-solving challenges, where the answer and the process to get there are both unknown, a skill that is highly valued by employers (Barnes, 2008). Non-spoon feeding instruction facilitated students through an array of innovative and provocatively ambiguous exercises, where the instructor is a facilitating river rather than a fountain of knowledge (Wong, 2009). A term ending multiple choice test was used to incentivise students to read and, counter-culturally, learn the whole core text and wider Virtual Learning Environment (VLE) content, with no question banks to commit to heart, past papers to memorise or cheat sheets to revise with. Repeated messaging emphasised the connection between in- and beyond-class participation and the achievement of successful grade outcomes. Heightened anxiety amongst some of the student body was a predictable bedfellow of this novel, deep learning innovation, as elucidated by Talbert (2018). Some hyper-connected students were found to vent their concerns a little too easily, mostly mis-perceptions pertaining to their performance in the multiple-choice test.

A three-pronged intervention was adopted to wrap around the flipped classroom concept; initial ice breakers to help start to build study tribes (or groups), a varied active learning seminar format that recognised assignment season demands, and challenging assessments were used to motivate deep engagement with the classes and freely available core electronic text book and learning support materials hosted on the virtual learning environment (VLE).

Inspiring extraordinary seminars

The inspiration for taking a fresh approach to designing seminars came after attending the medieval castle-hosted College of Extraordinary Experiences, a LARP (Live Action Role Play) infused business conference that was focused on co-creational experience design (Extraordinary College, n.d.). The conference, which banned death by PowerPoint

presentations, used arts-inspired experiential learning that was anchored by the principles of design thinking (co-creation, rapid prototyping and flexible focus) (Dorst, 2011). The digital marketing lead instructor sought to infuse the teaching design with the energy and positivity they had experienced at the conference, which had been co-created with a heady blend of creative performing artists, academics, industry practitioners and event designers, and powerfully underpinned by Pine and Gilmore's (1999) experience economy framework.

A flying faculty, international teaching week in France had revealed a key insight, that large cohorts of management students in seminars were often complete strangers. Even in the final year of their programme, randomly assigned classes were just not peppered with friendly faces. Whilst this is to be expected in the first year, it was a surprising revelation for the instructor, who was able to validate this insight on other programmes in both Singapore and the UK. Rather than talking to each other, students were more often found with their heads down on their phones, no one was talking in real life, but communicating virtually!

A number of effective ice-breaking activities adapted from an MBA induction programme were repurposed to encourage name learning and introduce a sense of unexpected fun. It was considered desirable to design and implement a varied seminar diet that was stimulating to deliver (repeated six times over two days) and make students want to attend and actively participate. A strong, interwoven, triad of sticky themes were engineered into the programme comprising: theoretical engagement (e.g. academic journals and core text), real world applicability (e.g. process mapping using dating website analysis) and study skill bites (e.g. analysis, academic writing structure). Second-year undergraduates were found too often to be underperforming because they lacked vital analytical skills and research rigour.

Students studied award-winning industry exemplars, edgy WARC case studies (WARC, n.d.) written by persuasive advertising professionals and elevator pitched (one minute summary presentation) high quality journal papers to reinforce familiarity with these too often overlooked electronic library sources. Students who arrived under-prepared were invited to take time out to catch up and drop into a later seminar, which enhanced preparation noticeably. To address tactical attendance during assignment season, students were promised low and no preparation seminars in the second half of term, which included a Twitterstorm debate and an Escape Room inspired challenge. The open space learning visual analysis exercise co-created a surprisingly impactful reflection on structuring effective essay writing, which was a serendipitous success. Attendance exceeded expectations and the instructor very much enjoyed the novelty of walking out of class behind enthusiastically chattering and energised students.

Seminar series outline

In line with Flynn (2015), a markedly different format was used every week, with more student preparation required at the beginning of the term and little or none during assignment

season. Teams often jump too quickly to the assigned task before taking the time to form powerful alliances; developing social ties, building trust, and establishing effective collaborative processes (see: Smith et al., 1994 on team process and social integration). So rather unorthodoxly, social interaction exercises were prioritised (the how) in the first three weeks, with less focus given to expected academic content (the what), which was emphasised later.

Week 1: Social engagement

Unconventionally, the first seminar was designed to build a strong circle of trust within the group by focussing not on content, but on group dynamics. The session started with everyone in a circle playing name pop (individuals were identified as 'popped' when their name was called three times, shown by either standing up or crossing their arms) and name catch (identifying the next catcher for an invisible ball or energy). The instructor then plays a notional spin the bottle 'ask me anything' game that encourages students to take turns putting difficult, challenging and revealing questions to get to know the instructor on a more human level, breaking down the instructor-student power-distance divide. The class is concluded by explaining the flipped classroom philosophy using a question and answer discussion, which is likely to be different to others they have attended, by underscoring student expectations; to read the assigned textbook and to be prepared for active seminars. Students are then encouraged to meet up after class for a purely social activity using the "start with a party" (O'Brien, 2012) mantra, emphasis being put on strong groups proactively seeking to move down Tuckman's Form, Storm, Norm, Perform curve (Bonebright, 2010).

Week 2: Elevator pitching

Using the employability-inspired "imagine you had to sell your idea orally without any visual aids to your time-poor boss in a short, corridor or elevator encounter", students were invited to introduce themselves and offer a pithy one-minute summary of a digital marketing academic journal paper they had found to be of interest. To ensure there was no duplication, test effective Harvard referencing capability and encourage timely preparation, students were required to post their reference only (not summary) on a Moodle forum in the virtual learning environment. This highlighted the activity to the entire cohort (particularly if entries generated an email notification to all) and for the enlightened, provided a co-created contemporary digital marketing reading list reflecting the interests of the students (rather than the instructor). Well-prepared students often achieved the 60 seconds cut off, whilst others either took just 30 seconds or needed shutting down. With a short brief and transitions, larger groups would use 30 minutes, leaving 20 minutes for a group discussion on topics raised and reflection on their presentation skills performance. Instructors might draw out the groups' strengths and weaknesses and emphasise the noticeable impact preparation can make.

Week 3: Process mapping

The session started with a shortened version of name pop (as detailed above). Email marketing uses automated workflow tools to systematically lead a customer through the engagement funnel. The instructor sketched a simple process chart on the whiteboard to explain the symbol meanings; ovals (start/stop), rectangles (activity), arrows (flow direction), diamonds (yes/no decision points) and parallelograms (input/output). A favourite design challenge invites consideration of a fictional tooth brushing service, but nail or shoe polishing would also work. Using large paper sheets, Post It squares and thick pens, small student groups were invited to create a flowchart for an email marketing campaign that has a clear goal (e.g. email address capture). To encourage question forum posting, students were asked to take a photo of their final version and share it with the cohort via the virtual learning environment. Where physically possible, students were invited to move around the room to look at the other groups and reflect on key points of difference. The workshop was closed with a discussion of the challenges that were faced in completing the task and explaining that process mapping was used as a work design and performance management tool. Lucidchart (n.d.) is a useful briefing package.

Week 4: SAP Scenes (2016)

Cartoon storyboards are often used by professional user experience designers to visualise potential design solutions. By applying personas or avatars (typical customer profiles) to particular cut out and named characters, a number of digital customer journey scenarios can be created and performed, to help identify potential pain points and uncover emotional dimensions. Sequential image capture of typical scenarios (e.g. the screens for a sign-up process) can be used to create evocative, comic book-like storyboards. The projection of student-improvised dialogue onto an often humorous, lower risk role-playing situation using a mini theatre 'scene' makes for an engaging small group classroom encounter. Consider using live screen interaction (position cartoon cut outs around a physical screen) with the sign-up process for a range of dating apps and summarise in plenary discussion, to analyse key points of difference (e.g. intuitiveness, data privacy concerns, time taken). A free starter toolkit can be accessed from SAP (n.d.), just add your own scissors.

Week 5: WARC advertising agency awards

This seminar sought to encourage students to critique warc.com hosted advertising agency awards (subscription required). We selected reasonably current campaigns which hosted rich video exemplars and a social agenda (e.g. #likeagirl and P&G's Proud Sponsor of Mom) to include some ethical focus, juxtaposing the overtly commercial context of this FMCG (fast moving consumer goods) heavy database. The discussion sought to compare and contrast advertising agency awards with academic journals, to encourage exploration of more critical analysis required in the final undergraduate year (level 6). The conversation should cover source credibility and persuasive writing,

WARC authors (advertising copy writing experts) look to win the competition and position their work favourably. We used this exercise to highlight critical comparison link words as a tell tale sign of analytical writing (see: Compare and Contrast, n.d.).

Week 6: Escape room

This jeopardy-inspired concept draws on the collaborative gaming trend for experiential group puzzle experiences, where the themed room and props are replaced with a series of exploratory research challenges. Use a projected internet countdown timer to start the session, focusing on the finite time window to attempt to inculcate urgency and a degree of shared voluntary suspension of disbelief. Working in small groups, clues point students at websites where they need to retrieve specific answers. Groups competed to crack the code before the end of the 50-minute seminar to be able to exit the room. Of course, health and safety rules prohibit real door locking and students know they will leave the room whatever happens. A range of free analytical websites were used, e.g. Social Blade, Social Bakers, SimilarWeb, SEMrush, all exemplars of the sorts of tools students should use for the terminal assignment.

The seven clues each provided a single letter or number that combined to complete the URL (<https://youtu.be/dQw4w9WgXcQm>) to be Rick Rolled, the internet joke phenomenon of blind linking to a video of British singer Rick Astley performing 'Never gonna give you up' (with its 500m+ views). Analogous to real escape rooms, satisfactory experiences come from most groups successfully navigating all the clues and being able to open the virtual treasure chest in the last five minutes, which necessitates active facilitation by the instructor, using some helpful steers to correct erroneous answers and lead strugglers.

Week 7: Case study

In this seminar, students were set two case studies to link to one of the week's lecture topics, 'trust', Airbnb 'never a stranger' (Perrin, 2016) and Wu and Yuan's (2016) 'Helping Chinese Consumers Making the Informed Choices: the Challenge of Trust'. In self-selecting groups, students were invited to discuss one of the papers and then present back their discussion in plenary. Many students had used Airbnb and were able to relate to the key issue of stranger danger, both as a host and guest. The video 'How Airbnb designs for trust' from one of Airbnb's co-founders (Gebbia, 2016) is a useful additional resource.

Week 8: Live Twitterstorm discussion

Sharing failures is not commonplace as discussed above. This activity failed spectacularly, despite being one of the more exciting and potentially engaging concepts from the design phase (Chamberlin & Lehmann, 2011). Essentially, it was conceived as a social media-based balloon debate, using the module code hashtag to host the exchange of opinions and ideas via Twitter. It aimed to generate a multi-seminar,

beyond class discussion on a range of topics that students found interesting, and deliver the kind of digital innovation that features in leading pedagogic journals. Despite the ability to create an impersonal handle (user identity) the majority of students were found to be extremely reluctant to participate in this activity. They were concerned about creating digital content that might come back to haunt them later in their career, although online privacy and fear of being indelibly flamed were also major hurdles. Plan B for this seminar was to host a discussion about contemporary digital marketing, and emphasise the value of signing up for specialist marketing media channels such as Gartner's L2 and Mark Riston's Marketing Week.

Week 9: Social media: good or evil? using open space learning

The assignment question inherited with this module invited students to write an essay addressing whether they thought social media was a force for good or evil. This challenging question was repurposed into a seminar activity, drawing on a standing, group activity inspired from Monk et al.'s (2011) open space learning. Fifty contemporary images were collated on double side, colour printed on A5 paper (for desk top, but A4 laminates worked better for a floor-based activity if there is enough open space for this). Puzzling, text-light pictures of: influential religious and political world leaders, social influencers, current news items including data privacy, and dark social media stunts were selected. In small groups, students were given half the seminar time to organise the images into a story, with no further instruction, beyond identifying what some of the more left field images were depicting. Without being guided (honestly!), three different formats of answers usually emerged in each of the six workshops: (1) an entirely fictional story with made-up protagonists using a page turning narrative, (2) two groupings of images showing the good and evil side of social media, and (3) a model-like circular framework that sought to describe and explain social media systematically. Where there was limited floor space, two rectangular desks pushed together provided an optimally large working space. To bring the session together, students were invited to vote for their favourite by physically moving next to the preferred collection of images and invited to explain their choices. The instructor asked students to recommend which of the three approaches would deliver the best assignment outcome. The given answer was that a strong essay would have all three elements; a strong narrative, clear analysis and a coherent framework.

Week 10: Assessment Q&A

At this point in the term, students were very comfortable and the last, additional session was used as an unstructured opportunity for students to ask questions about the upcoming digital audit case study assignment. This was unequivocally a provocative and ambiguous assignment, where the instructor encouraged students to deploy discovery learning, formulating both their own process and content. Frequent student requests for exemplar model answers and step-by-step scaffolding were politely declined,

with an accompanying rationale that sought to explain the higher order problem solving process they were being challenged to engage with. Students were invited to identify and use new, free data scraping tools, create original, layered graphical analysis in Excel and use a grounded evaluative approach to explore a range of complex digital marketing metrics. Many engaged students seemed to excel, whilst surface learners, many of whom had missed the in-lecture briefings, often failed to address the question appropriately.

Results and conclusions

By way of imparting an inspiring impression of the flip fix innovation, that has been dubbed 'discovery learning with extraordinary seminars', this paper concludes with a summary of student and instructor reflections.

Student feedback

Student testimony ascribed significant value to the practical, real world nature of discovery learning and extraordinary seminars, a key institutional priority:

The opportunity to explore and engage with real-world scenarios was great because it made our learning much more tangible and understandable than just abstract theory.

Honestly, I have never learnt so much theory as well as practical life skills in any module and [this was] better than I ever thought it would be in terms of practical application for real life.

However, there was some initial apprehension to this innovative, less structured approach in line with Talbert's (2018) findings:

I was apprehensive as to how the teaching style would impact me as an individual and a learner, [the instructor] committed to keeping workshops different and insightful, [introducing] controversial topics [and] pushing us to think critically.

At the start, I found this difficult, as normally there is always a right and wrong answer for tutors, but [the instructor] wanted us to dig deeper, to push the boundaries and to question everything we read.

I found it very challenging but insightful, as normal assignments have a concrete structure and a checklist for students to go through when writing, but [we had] the freedom to develop as writers outside the normal structures.

Students recognised the benefit of individual and collaborative group development (Waldrop, 2013), and Marozzi (2012) highlighted the positive relationship between increased in-class interaction and enhanced student satisfaction ratings:

During the audit I got frustrated as I could not find any examples, thus did not know if I was on the right path or not. This pushed all [the] students to work together, exchanging ideas and applications.

[Discovery learning] helped me make connections within my class as it made people communicate.

I am sure I will take forward to other modules... learning how to get the best out of people in a team.

Student reflexivity after the module highlighted deep learning:

I was pushed to think for myself, ...[questioning] all aspects of the surrounding topics, which helped me see things from different perspectives.

By creating a never done before assignment [we were pushed] to think outside the box.

Rather than the typical fall off in attendance, numbers actually grew in the early weeks of term, seminars averaging 90% for the term, at the top end of the department's distribution. This outcome supports the findings of Parslow (2012) and Bergman and Sams (2012), indicating that flipped pedagogies can boost engagement and improve attendance. Students were observed smiling and chatting with each other as they left seminars and were markedly more prepared for and engaged in the seminar learning activities. One visibly surprised student, noting that all the chairs were occupied, remarked "but this is two classes together, right?" (It was just one.)

Instructor reflection and conclusion

Peer reflection highlighted the potential for extreme instructor anxiety from adopting these sorts of highly experimental techniques (even informally dubbed 'winging it'), that did not adhere to tightly scripted and rigid lesson plans. Implicit is perhaps supreme teacher confidence to be able to adapt and respond in real time, in an environment where some of the control of the formal learning encounter has been ceded to the students. Additionally, the importance of developing trust and a powerful rapport between students and with the lecturer was identified as a critical success factor when deploying such varied and unorthodox approaches. In truth, not every seminar was truly extraordinary, but innovating seminar formats and learning to be comfortable with more open-ended, flexible and co-created learning was profoundly rewarding and certainly worth any perceived risk.

This innovation experience was found to be quite liberating, a bit nerve-racking and not without the odd bump in the road, particularly around the 'engage in deep learning or underperform' messaging and trying to find the sweet spot in Vygotsky's zone of proximal development (Chaiklin, 2003), positioning the learning challenge as neither too difficult nor too easy (DeLozier & Rhodes, 2017). Flipping the classroom and overweighting delivery with industry guest

speakers allowed for a more flexible, contemporary and non-linear lecture series that could concentrate on bringing alive the most appropriate and relevant subjects, rather than jogging through all the driest content from the index of a door stopping text book. Waldrop (2013) highlighted the terrible learning experiences offered in passively listening to lectures, emphasising the need for innovation. Talbert (2018) surmises that although there was only very modest quantitative evidence to support learning gain from flipped pedagogies, it had a positive impact on both student satisfaction (increasingly important for university rankings) and attendance, which is clearly evidenced in the student testimonies above. Building students' confidence to be able to flap their wings and soar, to operate confidently in a scaffolding free zone by clearly linking the skill of higher order problem solving (that is highly valued by employers) was something that several successful students also remarked on following their summer internship or year in business placements. Go on, give the flipped classroom another try.

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