Flipping the Classroom to Enhance Opportunities for Differentiated Instruction

DEANNA SAUNDERS
University of Roehampton

This paper will consider how flipping the classroom can enhance opportunities for differentiated instruction (DI) in Higher Education. DI is a potentially problematic concept, especially when differentiating learning and teaching can result in both the inclusion and exclusion of learners. Moreover, if differentiated learning and teaching is not carefully considered, it can perpetuate and enhance existing inequalities, promoting a type of ‘Matthew Effect’ in education (Westwood, 2001). A reflection will be presented on how flipping the classroom has been utilised for the purposes of DI on a compulsory ‘Communication for Academic Purposes’ module on the foundation year of an extended degree programme. In particular, this paper will look at the implementation of a ‘partial’ flip and how the inversion of content delivery enhanced the potential for DI at the levels of ‘process’ and ‘environment’ (Tomlinson and Moon, 2013). In light of the Covid-19 pandemic, and a shift to remote learning and teaching, I will conclude by commenting on how this pedagogical strategy might now be more attractive in an era of remote/blended content delivery.

Introduction

In Higher Education (HE), inclusive practice has involved a range of recommendations and alterations to teaching, learning and assessment, with the purpose of ensuring and supporting equal and equitable access for all students (DfE, 2017a). This has been both in response to and in association with more proactive efforts to widen participation to HE (Jones and Thomas, 2005; Vignoles and Murray, 2016; Gibson et al., 2016). With the expansion of education to a wider demographic, academic and support staff have worked to ensure appropriate provisions are in place for students with disabilities, specific learning difficulties and mental health conditions (Masterson, 2010; Hackl and Ermolina, 2019). Furthermore, course content and module aims and outcomes have also been revised to reflect students’ diverse backgrounds, to understand their lived experiences, and to ensure that the academic voices they hear and read are more representative of the identities they encompass, which may be at the level of ‘race’, ethnicity, culture, religion (or belief), gender, sex, sexual orientation, age, social class and disability, or at the intersections of these (Jehangir, 2010; Case, 2017; Glazzard, Jindal-Snape and Stones, 2020).
For example, in many institutions, curricula are undergoing what may be described as a ‘decolonising’ process (Bird and Pitman, 2019; Arday, Belluigi and Thomas, 2020). Moreover, a large aspect of inclusive practice has been about listening to students, empowering student voices, and engaging with students collaboratively as partners in learning (Carey, 2013; Healy, Flint and Harrington, 2016; Bassel et al., 2019). In many respects, this has been and continues to be achieved without comprising academic standards, integrity and excellence, as is sometimes feared (Wright, 2014).

Nevertheless, inclusive practice in HE is work-in-progress. It is an ongoing, changing, responsive and proactive model, with the newest phase of this being the implementation of appropriate learning technologies, especially with a rapid transition to remote learning and teaching in light of Covid-19. With this, however, comes a series of difficulties and barriers that both students and staff face. Although widening participation initiatives have helped recruit students from a wider array of backgrounds, the presence and persistence of concerning attainment gaps, such as the BAME attainment gap (Universities UK and NUS, 2019), reflect an acceleration of growth which does not necessarily mirror the implementation of fully inclusive approaches. As Quinn (2013: 72) has highlighted in a report on drop-out and completion rates of students in HE from under-represented groups across Europe, there has been “massification...without change to the system that would actually widen participation”. Additionally, the HE sector continues to be strained, evident through the casualisation of contracts, stretched workloads and pay devaluation and inequality (UCU, 2020), which is set to worsen as a result of the UK government’s Covid-19 lockdown measures, limited support, and the subsequent recession in the UK.

Considering these challenges, I wish to add to and build on inclusive practice discussions by considering a strategy that is utilised in primary and secondary teaching in the UK but is not as common within the HE sector: Differentiated Instruction (DI). It is my contention that DI can enhance inclusive practice, but not necessarily in the sense it is applied within UK schools. Moreover, this paper argues that DI can be enhanced through the adoption of a flipped learning model of teaching and learning, which will now be outlined in further depth.

**Flipped Classroom Model**

The goal of the flipped learning model is to move the students’ initial exposure to course content, i.e. the lecture, outside of the classroom, so that contact time in class can be used for activities and further interaction with peers and the teacher. It is underpinned by an active learning theoretical framework, where a ‘traditional’ lecture style of delivery is inverted, and practical activities and an application of knowledge is possible within the classroom. A helpful definition of this model is provided by Bishop and Verleger (2013), where the flipped model is seen “as an educational technique that consists of two parts: interactive group learning activities inside the classroom, and direct computer-based individual instruction outside the classroom”. Attention should be paid to the latter part of this definition, as broader views of the flipped model may also see pre-class readings as an instructional component. For the purposes of this article, the instructional element of the flipped model would constitute a video or recording designed by teacher/lecturer to introduce and explain a topic. A related reading could be part of an in-class activity or a homework task but would not fit the criteria for a pre-class instructional resource.

The practical application of the flipped classroom is often attributed to Aaron Sams and Jonathan Bergmann, who began recording their classes in 2007, in response to a large number of absent students. However, when they realised that students had access to everything online,
they began to question: “What is the value of class time if a student can access all the content while not attending class?...What do students really need a physically present teacher for?” (Bergmann and Sams, 2014: 13). Subsequently, they started to understand the value of teacher-led support and facilitation within the classroom, a classroom that allows for whole group activities and the opportunity to provide “individualized teacher attention” (ibid). Tasks that would usually be set as ‘homework’, were now completed in-class; homework, on the other hand, constituted a series of pre-class videos, where the topic would effectively be ‘taught’.

Although Bergmann and Sams are often labelled as pioneers of the flipped learning classroom, this model is a direct response to wider educational shifts towards student-centred learning inspired by social constructivist pedagogical philosophies (Vygotsky, 1978; Bruner 1983) which highlighted the significance of peer, collaborative, active and problem-based learning environments. Writing about the differences between the constructivist model and a more traditional ‘transmittal’ model, King (1993: 30) argued that the role of the teacher/lecturer should move from “sage on the stage” to “guide on the side”. The transmittal model encourages students to become “passive learners” whilst the teacher/lecturer transmits knowledge, but the constructivist model requires students to actively participate in tasks and, “when students are engaged in actively processing information by reconstructing that information in such new and personally meaningful ways, they are far more likely to remember it and apply it in new situations” (King, 1993: 30).

With a rapid rise in the availability and accessibility of suitable technologies over the past decade, the flipped learning model has become increasingly popular. A growing body of literature now exists which provides insights into its advantages and disadvantages. Teachers/lecturers are drawn to this approach not only because it provides more opportunity for embedding activities into class time, but also because students have tended to view it positively; students feel better prepared for class and like the convenience and flexibility of accessing videos at their own time and pace, including that videos can be paused and rewound; attainment/performance has been shown to increase; student satisfaction and engagement has risen; students have reported feeling more comfortable about raising questions without fear of interrupting the tutor; and students like being able to work towards assignments in class (Bishop and Verleger, 2013; Findlay-Thompson and Mombourquette, 2014; Ryan and Reid, 2016; Hao, 2016; McNally et al., 2017; Akçayır and Akçayır, 2018; Burgoyne and Eaton, 2018). However, much of this evidence is derived from small case-studies and larger, more extensive, comparative and longitudinal studies are yet to appear (Findlay-Thompson and Mombourquette, 2014).

There is also a range of challenges or problems with this model that scholars have identified, including that some students have reported feeling as though watching videos constitutes extra work; students need to be incentivised in order to engage with pre-class videos; problems arise in-class when students fail to prepare appropriately; a digital divide which potentially disadvantages students without suitable internet connection and/or devices; the flipped model goes against student expectations, with students believing their role should be as a ‘passive’ learner within the classroom; larger workloads and preparation for teachers/lecturers; minimal training opportunities for staff; and a lack of funding for appropriate software to ensure professionalism of content (Bishop and Verleger, 2013; Findlay-Thompson and Mombourquette, 2014; Ryan and Reid, 2016; Hao, 2016; McNally et al., 2017; Akçayır and Akçayır, 2018; Burgoyne and Eaton, 2018).

Despite some of these challenges, issues may be mitigated by making small changes to the implementation of the model. For example, studies have reported increased engagement if videos are short and if the information is presented in ‘chunks’ (i.e. up to 20 minutes as a maximum) (Bishop and Verleger, 2013; Ryan and Reid, 2016). Burgoyne and Eaton (2018) discuss the possibility of adopting a ‘partial’ flip in order to manage workloads and to provide variety.
Findlay-Thompson and Mombourquette (2014: 69) have also compiled a list of lessons to be learnt, after implementing the flipped model in an undergraduate Business course, which include: 1) “student understanding of the purpose of the flipped classroom must be properly communicated and students given the opportunity to express concerns about their responsibilities”; 2) “student buy-in must be gained so they will be committed to the learning process”; and 3) “the instructor must be willing to let go of traditional teaching practices and be fully trained”.

I was inclined to adopt the flipped classroom model after receiving my first round of student feedback for a new module I convened in 2018-2019 entitled ‘Communication for Academic Purposes’¹ (or CAP). Over 200 students study this module in their foundation year of a range of Extended Degree (4-year programmes) at the University of Roehampton. The extended degree foundation year caters to 33 different degree pathways across most departments at the university, including Social Sciences, Humanities, Life Sciences, Business, and Media, Culture and Language. As all students are required to study this module, regardless of subject pathway, the challenge for me as the module convenor is to ensure all students are appropriately challenged, even in instances where topics may initially be perceived as too easy or too difficult. CAP covers similar topics to most other ‘English for Academic Purposes’ and/or ‘Study Skills’ modules, meaning it is inclusive of academic reading and writing, referencing, critical thinking, planning and structuring assignments etc. This module, in particular, includes an explicit focus on grammar, where students are encouraged to be consciously aware of accuracy, precision and appropriateness.

Although the grammar component of this module is only taught for only a 15-20-minute segment of a 3-hour class, student feedback I obtained from the 2018-2019 cohort suggested that grammar was boring and simplistic, and not what students wanted to study at university, especially during class time. Although students understood the significance of grammar, particularly notable was the idea that it was the instruction of grammar that caused dissatisfaction, because students wanted to do ‘more interesting’ things during class time. I therefore decided to explore how I could make this subject more engaging and interesting. At the same time, I was increasingly concerned about how I could appropriately differentiate topics, particularly grammar, to attend to a diverse range of abilities and learning needs and varying levels of English proficiency, with English as a first language for many but not all students.

**Differentiated Instruction**

Differentiation or differentiated instruction (DI) is an approach to teaching and learning that is adopted explicitly in primary and secondary schools in the UK to ensure inclusive practice (Suprayogi, Valcke and Godwin, 2017; Bearne and Kennedy, 2018; Titchmarsh, 2019). From my experience working in schools, DI is something which is deeply embedded in the infrastructure, with most schools choosing to adopt streaming or setting, and scaffolding or tiering activities, with the aim of facilitating an environment that attends to students’ individual learning styles and needs. Furthermore, DI is a core aspect of the teachers’ standards framework, set out by the government (DfE, 2011). Thus, the framework explicitly states that teachers must “adapt teaching to respond to the strengths and needs of all pupils” and, as part of this, they should “know when and how to differentiate appropriately, using approaches which enable pupils to be taught effectively” (ibid: 11).

¹ This is essentially an English for Academic Purposes module, renamed to reflect and emphasise the difference between this module and ‘traditional’ or ‘functional’ English taught in secondary schools and FE colleges.
Many higher education institutions/courses do not follow these patterns and are not under the same obligations as schools, particularly when it comes to differentiation in teaching. Students are generally taught in the same classes and have access to all of the same lectures, content and material (although there will undoubtedly be exceptions). This does not mean that differentiation is not present, as it is very much connected to inclusive practice, including the provision of ‘reasonable adjustments’ under the Equality Act (2010), the need to evidence fair and widening access to HE in order to be considered for the Teaching Excellence Framework (TEF) and other charters (DfE, 2017b), and also the extensive amount of work and research that goes into student-centred teaching and learning practices and assessment technique. However, DI within the classroom itself, especially where a traditional lecture style of delivery is expected or followed, is not always as routinely visible or even possible.

According to Tomlinson and Moon (2013), differentiation can occur through content, process, product, and environment. When we plan and deliver a lecture, we may be able to consider differentiating content (the information and ideas), and in some instances the product (how students show what they know, understand and can do), but the process (how students take in and make sense of the content) and the environment (the climate or tone of the classroom) are not so easily differentiated, especially in lecture style delivery. It is therefore my contention that the flipped classroom model can enhance the possibility for DI during timetabled classes within HE.

Nevertheless, changing the content, the processes involved in learning, the final products students produce and/or the environment and delivery, for the purposes of inclusive practice, may seemingly maximise the learning experience for some, whilst at the same time limiting it for others. Research into differentiation in schools ultimately leads to inconclusive results on the grounds of whether DI and associated practices are ultimately ‘inclusive’ (Titchmarsh, 2019), and Taylor (2019) has also critiqued the term ‘differentiation’, highlighting that it can actually lower teacher/lecturer expectations of students, lessening opportunities for progression and attainment. Thus, I acknowledge that there are dangers with DI and concur that when DI is implemented uncritically, this can enhance and perpetuate existing attainment gaps and inequalities (Westwood, 2001).

Moreover, where curriculum content, or expectations of what students should or should not produce (i.e. what they should do in their assessments), are simplified or modified, there is always the danger of a ‘Matthew Effect’. Although this term is most often applied in an economic sense to explain processes of the rich getting richer and the poor getting poorer, in an educational context, differentiation can perpetuate a similar effect, where the less able are expected to do less and therefore achieve less, and the more able expected to do more and, therefore achieve more. Furthermore, DI should not be about giving or expecting any less of students. As Westwood (2001: 6) states “any approach that suggests giving ‘less’ to students is open to criticism under principles of equity and social justice”.

Where DI occurs through content and product, not only can attainment gaps persist and be perpetuated, but students can also become acutely aware of such practices and become demotivated or discouraged. However, with caution, and with an emphasis of differentiation at the level of process and environment, students can gain access to the same content and produce the same assignments but with differentiated assistance and feedback, facilitated not only by the teacher/lecturer in the classroom, but also via peers through group work, discussion and collaborative learning. With this in mind, it is my belief that DI can and should have a place in HE classroom and this can, in turn, be supported and realised through the adoption of a flipped

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2 Same at the level of student learning aims and outcomes, which does not always mean the exact same assignment type or question, as reasonable adjustments may be necessary and student choice in terms of assignment question or topic will of course lead to differences in product.
classroom. Thus, the inversion involved in the flipped classroom allows for teachers/lecturers and students to work on and consider a range of higher-order thinking skills within class time, other than only remembering/knowledge and understanding/comprehension, which are most often associated with the ‘transmittal’ or ‘traditional’ model of lecture delivery. This can be further visualised by looking at the flipped classroom model through the lens of the revised Bloom’s taxonomy (Anderson et al., 2013) (see Fig. 1).

As is evident from Fig. 1, in a traditional lecture the teacher/lecturer imparts information to the students which encourages the remembering and understanding components of Bloom’s taxonomy. However, when the students leave class, it is their responsibility to seek out opportunities to practise and evidence skills in applying, analysing and evaluating content, ideas and research in order to create and succeed in their assessments, usually without much further expert input or support. Alternatively, in a flipped classroom, the remembering and understanding components are completed at home, prior to class, and this enables time for application, analysis, evaluation and creation to occur within the classroom, facilitated by the teacher/lecturer, supported by peers and, ultimately, providing ample opportunities for DI to occur at the level of process and environment.

Reflection: The Flipped Model in Practice

I will now turn to some reflections on my own experience implementing a partially flipped model in the academic year 2019-2020. This section will start with my motivations and reservations before moving onto the processes and challenges of video selection and creation. Student responses will also be considered, and I will present my view on how the flipped model enhanced opportunities for DI.

When I made the decision to transition to the flipped model, I did so out of curiosity and a determination to seek out a pedagogical method that would enhance the instruction of grammar, whilst at the same time enabling enhanced possibilities for DI. However, I was also doubtful and questioned: would I be able to flip my class without extensive training on suitable technologies? Would it be exhausting and time consuming? Would students see value in this approach and benefit from the change in terms of attainment and engagement?
Initially, I had a desire to create all of my own content, as I believed this would ensure consistency across the course. However, I was slightly overwhelmed by the sheer number of applications and programmes available. With many of these previously unfamiliar to me, I found myself lost in a sea of possibility. It was also clear that several of these platforms had paywalls associated with them; therefore, I needed to manage cost, time and suitableness. With guidance from my institution’s e-learning team, and with previous experience using Panopto, I created videos based on PowerPoint presentations. However, I had visions that went beyond PowerPoint, leading me to explore other options. I found an online tool called Animaker which allowed me to make short animated videos that I could then post as unlisted to YouTube. I added links to Moodle and was able to observe user analytics through my YouTube account. All videos were two minutes or less based on my understanding of potential engagement problems when shifting to a flipped lesson design. Students were required to watch these videos prior to class, and I designed a range of related in-class activities to complement the topics covered. The benefit of these short grammar videos was that students had control of the instructional component (and in a sense this allowed for self-differentiation prior to class). They could pause and rewind if and where a grammatical item proved challenging; alternatively, if the item was something the student already felt they were competent with, the short video acted like a revision tool or reminder of that particular grammatical rule. Thus, this aspect of the course could be more sufficiently differentiated at the level of process.

I found video creation challenging at the start, not only because it was a very different way of structuring my lessons, but because it was time consuming. Upon reflection, however, it was not the creation of content that took time; rather, it was mastery of the programme/technology. As I became more confident and comfortable with learning technologies, I found a rhythm which was not entirely different to my usual approach to lesson planning. Nevertheless, there was still a slight increase in workload at the start, although this was mitigated by my adoption of a partial flip. This certainly eased the transition for both my students and me. Moreover, I learnt that consistency is necessary, but there is value in providing students with a variety of videos, materials and activities. Thus, I also utilised a wealth of pre-existing online resources available from sites such as Khan Academy, Grammarly, TED Talks and ROB Roehampton.³

I learnt that communicating expectations to students is essential to ensure engagement. Although Findlay-Thompson and Mombourquette (2014) advise that students should understand the purpose of the flipped classroom, I chose not to go into extensive detail about the pedagogical shift, and instead outlined that watching pre-class videos was an expectation of the course, just as reading and other pre-learning activities have traditionally been in the HE sector. With students watching videos prior to class, they were able to make sense of the content in their own time and self-pace their learning. It therefore gave us time in-class to discuss the application of grammatical items and common errors more fully, for students to ask more questions, that they had time to form in response to the instructional component, and for me to respond to queries and misconceptions during class time. As this environment became more interactive, it became the norm for students to ask a multitude of questions. This enhanced the prospect of students as partners in learning, as one of the barriers that sometimes prevents students from asking questions, teacher talk time, was reduced. Students therefore had some control in determining the direction of the in-class discussion. As I teach this same module to five different groups per week, I was often surprised at the very different directions that discussions took. In this sense, the flipped method also resulted in the possibility for differentiation at the level of environment alongside process, especially during class time.

³ The University of Roehampton’s video streaming platform.
In our sessions, I gained greater insights into the students’ knowledge and understanding of grammatical topics and, based on these observations, I was able to facilitate individualised and differentiated feedback that was immediate. As a result, I was able to witness improvement in students’ understanding of grammar, their writing ability and even their confidence in speaking within the classroom. This environment also encouraged more opportunities for students to self- and peer-assess their work, and I observed students self-differentiating when accessing materials inside and outside of class. For example, this was evident in the way students practised exercises like paraphrasing and self-selecting extracts to re-write, based on their enhanced awareness of what would be an appropriate challenge.

Furthermore, I learnt that making a lesson task-based and adopting a flipped element did not mean that content was not or could not be delivered. To my surprise, I found that content delivery occurred quite naturally when providing individual and/or small group feedback; the only difference being that delivery was individualised according to student need and not the one-size-fits-all approach that usually occurs during a lecture monologue. Once tasks and activities were completed, a plenary discussion also allowed an opportunity to revisit the topic and re-explain any difficult or challenging areas, which was again, another chance for my input.

In the standard mid-term and end of term feedback forms that were administered, students commented positively on aspects of the flipped learning method (despite the fact that this was unprompted in the design of the questionnaire). Students said they wanted the course to retain the in-class activities and video tutorials, finding them helpful resources for both learning and revision. When asked what the course should ‘add’ or ‘start doing’, students said they wanted more time for in-class activities, more opportunities for interaction and more videos available related to other topics covered in the module.

My partial adoption of the flipped method occurred prior to the Covid-19 pandemic and the subsequent shift to lockdown and remote teaching and learning. Since this time, both students and lecturers have, necessarily, become more technologically resilient, and a range of platforms, applications, software and opportunities for training have, in most instances, been made available. This resultant paradigm shift, combined with my experience of the partial adoption of the flipped classroom, has led me to redesign the ‘Communication for Academic Purposes’ module for September 2020 delivery, and the module will now utilise the flipped classroom method in its entirety. Students will be required to watch three or four, 15-20 minute, videos per week prior to a 2-hour task-based seminar. A suggested time for watching videos will appear on students’ timetables to assist with time-management and organisation, but also to act as a reminder that these videos are a core component of the course. If and where students have immediate questions, a Padlet will be made available and will be monitored for queries (which students can post anonymously if preferred). Further research will be conducted into the implementation and success of the flipped classroom in light of these modifications.

Conclusion

The Flipped Classroom and Opportunities for DI

This paper’s main aim was to consider how opportunities for DI could be enhanced within HE, and it was argued that this can be facilitated through the adoption of the flipped classroom method. DI is not a strategy or technique that should be considered uncritically, as there can be dangers surrounding its implementation, potentially risking the inclusion of some students to the detriment and exclusion of others. However, it was suggested that where it is employed at the level of process and environment, DI can be more effectively incorporated as an inclusive
strategy within HE classrooms. Although there are reservations surrounding the adoption of the flipped method, I have highlighted that this pedagogical strategy does not only help with individualised feedback, but also allows for higher order thinking skills to be addressed during timetabled classes. Transitioning to this method can be challenging and time-consuming, but this may be aided by the adoption of a partial shift and through the utilisation of the wealth of pre-existing online resources. Video creation does take time, but Panopto and other web-based platforms (such as Animaker) are user-friendly and, once content is produced, it can be easily disseminated and monitored. Students can access this content as and when required, both pre-lesson and as a revision tool; they can also access it at a time and place suitable for them, including on the train during their commute, or during a break at work.

**Pedagogical Shifts in a Pandemic**

Although research into the flipped classroom is mostly inconclusive when it comes to an assessment of its effectiveness and success, many of the uncertainties associated with this pedagogic strategy may now be mitigated due to the changing landscape of HE and a shift to remote and/or blended learning environments. Moreover, there may be additional benefits to the adoption, or partial adoption, of the flipped method. Firstly, providing flexible learning opportunities has never been as crucial as it is now during a pandemic. Therefore, creating, finding and embedding a series of instructional videos helps to populate virtual learning environments with asynchronous content, enabling students to self-pace their learning and revisit/revise content. Secondly, with many universities transitioning to at least some proportion of remote delivery to ensure safe, socially distanced campuses and classrooms, students and teachers/lecturers are now also learning to adapt to virtual learning environments and cultures. Although synchronous online lecture delivery and platforms such as Zoom, Blackboard Collaborate and Microsoft Teams (amongst others) are designed to emulate, as far as possible, face to face experiences, a new set of challenges present themselves because we are no longer in the physical learning space we are used to. This includes the omission of social and paralinguistic cues that so often provide teachers/lecturers with insight into student engagement and comprehension. If the flipped method is adopted and students are able to access content prior to class, remote sessions can be made more interactive and task-based, allowing for opportunities to check understanding verbally and through other means such as polling and break-out groups. In an age of diminished ‘physical’ face to face interaction, finding ways to encourage active participation in remote classes will be fundamental to tackling and mitigating any experiences of social isolation, helping students to build and forge working relationships and friendships with peers, and ensuring a sense of belonging in HE.

**References**


About the Author

Deanna Saunders is a Lecturer in English and Academic Skills on the Extended Degree programme at the University of Roehampton, London. As a lecturer on the foundation year, Deanna’s research and teaching interests involve student retention and engagement, widening participation, the flipped classroom and blended learning methods. As an applied linguist, Deanna’s research interests lay broadly around critiquing discourses about immigration and uncovering latent racist ideologies, particularly within (social) media texts. She recently completed her PhD at Canterbury Christ Church University, which utilised critical discourse analysis to examine racist representations and evaluations of Romanian and Bulgarian citizens in online newspapers and public comment threads.