

[DOI: 10.20472/IAC.2017.029.032](https://doi.org/10.20472/IAC.2017.029.032)

CHARLES WILD

University of Hertfordshire, United Kingdom

FLIP THE SCRIPT: USING THE REFINED FLIPPED CLASSROOM MODEL TO REDUCE THE BAME ATTAINMENT GAP

Abstract:

Higher Education (HE) within the UK faces a number of significant challenges, including the need to rethink the way in which degree programmes are delivered to an increasingly culturally diverse cohort wherein white students no longer represent the majority of students but, in many instances, account for only the second or third largest ethnic group of students enrolled on a University course.

Both Banks (2006) and Pewewardy (2008) observe that minority students differ in the ways they learn and communicate. However, as Morgan (2010) notes, these students only differ "from what a given culture considers appropriate or normal." Consequently, within the UK Higher Education sector, where the assumed norm has traditionally been based on provision of an education strategy targeted at a predominantly white student cohort, the concept of 'appropriate or normal' is now, rightly, being questioned. Indeed, it is an issue which HE institutions must address in order to respond effectively to this changing cultural environment. In this regard, the National Union of Students (NUS, 2009) noted that "Black students are less likely to be satisfied with their educational experience and to attain first-class degrees in comparison to their White peers', going on to observe that 'a simple explanation for the attainment and satisfaction gap of Black students does not exist'".

The author argues that despite a number of NUS and HEA reports over the past decade that have highlighted the BAME attainment gap, few sector-wide initiatives have been undertaken so as to address these concerns. The underlying pedagogy of many HE institution liberal arts programmes has remained largely unchanged for decades. As such, the author suggests that courses which were originally designed for a cohort predominantly comprised of white students, remains the underlying model despite a distinct change in the cultural diversity of current HE student bodies.

This paper examines the use of a refined flipped-classroom model across an entire undergraduate programme which has resulted in a significant reduction in the BAME attainment gap. Pioneered by Bergmann and Sams, the traditional flipped-classroom is not a 'model', as such, but a means by which time may be saved (Tucker, 2012). It allows students to watch lectures on multiple occasions and at times that suit the individual. It also provides students with a cache of stored information to refer back to when it is time to revise. When refined, this approach provides an effective and inclusive mode for teaching and learning.

Keywords:

Refined flipped classroom
BAME students
Critical reasoning
Attainment gap

Student experience

JEL Classification: I23, I24

Introduction

Pioneered by Bergmann and Sams in 2008, the flipped classroom inverts the traditional model of teaching students via a lecture and subsequent learning by way of homework to that of emphasising active forms of face-to-face learning in the classroom by delivering course content outside of the lecture theatre (Mason, Shuman & Cook 2013). Typically, the course content is delivered online through recorded lectures complemented by extended reading and other modes of content delivery (Bishop 2013).

Advantages of the flipped classroom approach include the flexibility afforded to students as to when, where and how many times they view lectures so as to move forward at their own pace (Fulton 2012; Berger & Wild 2016), making students responsible for their learning (Felder & Brent 2003) as well as using technology that is flexible, accessible and appropriate for the 21st Century (Fulton 2012). In this regard, Freeman Herreid & Schiller (2013: 62) observe that “*the approach seems to have singular appeal to students in this electronic age where videos in particular have found a special place in the heart of the ‘Awesome Generation’.*” Online lectures may be distributed effectively and efficiently via virtual learning environments, personal computers and mobile devices (McGarr, 2009). Consequently, rather than a student listening to a lecture on Corporate Governance or Legal Risk Management and subsequently attempting to answer a series of assigned questions outside of the classroom, students view lectures and read material before coming to class and then engage in active learning through the use of assigned questions, case studies or group problem scenarios (Wild, Weinstein & Santora 2017).

By bringing traditional homework exercises back into the classroom, it provides lecturers with a more effective insight into student progress and difficulties, enabling them to remedy weaknesses or misconceptions (Bergman & Sams 2012). Online lectures are no longer the primary mode of instruction; they are simply used to support traditional face-to-face, in-class activities (Freeman Herreid & Schiller 2013: 64). Finally, the fact that students work in the classroom, often in groups, is thought to reinforce their understanding of the course material through active and co-operative learning (Maarek & Kay 2015: 1) with a cache of stored information to refer back to, when it is time to revise for exams or write coursework (Berger & Wild 2016).

There is extensive literature that highlights the effectiveness of the flipped classroom in increasing student engagement and academic performance in subjects as diverse as mathematics (Moore et al, 2014), pharmacology (Pierce and Fox, 2012) and multimedia studies (Enfield, 2013). There are also examples of its adoption at programme level, as opposed to simply at module / course level. Wang & Lee (2015) note that a study conducted by the Yale Centre for Teaching and Learning and the University of Massachusetts Amherst, indicated that the flipped classroom led to significant improvements in student comprehension, “*especially among female*

students, underrepresented minority students and students with lower grade point averages”.

In this respect, Zappe, et al (2009) adopted the flipped classroom on a large undergraduate architectural engineering programme. Student feedback indicated that the cohort regarded this method of teaching as more effective than traditional lecturing and that they benefited from watching the online lectures outside of class. Similarly, Ruddick (2012) noted that the use of the flipped classroom concept for a chemistry course resulted in the cohort outperforming those students being taught via the standard lecture-based format. Several other studies have also reported improvements in exam scores and problem solving skills as a result of the adoption of the flipped classroom (Day & Foley 2006; Berger & Wild 2016).

The refined flipped classroom model

The author’s university has, since 2011, largely adopted the flipped-classroom model across its undergraduate law programmes. The decision to replace the traditional lecture and seminar format with that of the flipped classroom was influenced by students, who commented on the fact that traditional face-to-face lectures were not providing them with the necessary tools to progress from understanding legal theory and case law through to a state of being comfortable with either evaluating or analysing the subject matter. In other words, students wanted a greater opportunity to develop their critical thinking skills.

The challenge centred on the traditional lecture frequently being used by lecturers, who are acutely aware of the time constraints of university modules, as a vehicle to cover material in the curriculum. The inadvertent result of this being that students are encouraged to absorb the theory before moving on to the next portion of knowledge to be covered in the lecture. This, in turn, encourages many students to fall into the trap of simply accepting the lecturers’ views on the subject matter as qualitative instead of quantitative. In other words, the model that had developed overlooked the need to provide students with the opportunity to form their own views of the course content. This vital part of the learning process was either being lost or, at the very least, subdued by the lecturers’ focus on time constraints, curriculum content that students need to learn and ensuring that they have complied with assumed university expectations of defensible curriculum delivery.

This situation is frequently compounded by the fact many lecturers are, understandably, grounded in their specific subject matter, whether that it is engineering, economics or law, which they feel their students need to learn and, ultimately, know. Consequently, *“the process which lecturers refer to as being the Socratic Method is not the same as that described in Plato’s dialogues”* (Berger & Wild 2017). As Berger & Wild (2017) go on to note, there is nothing wrong with this approach, simply that it is not the Socratic Method, as it introduces a subject-specific element with the ultimate goal of ensuring that students confirm that they ‘know the

answer'. It seeks to provide students with a specific knowledge-base and the ability to interact with others within that particular discipline.

However, without additional input the traditional flipped classroom may replicate the same weakness of a live lecture, with students accepting their lecturer's views as qualitative instead of quantitative (Berger & Wild 2016). In other words, students continue to be taught WHAT to think, rather than HOW to think. Consequently, at the end of the course, many students understandably replicate the taught course content as outlined in their lectures. This is due to the fact that they have not been given the opportunity, or encouraged, to undertake critical reasoning; a key component of any higher education course.

As such, a third stage was introduced to the process; the Skills Based Lecture. The 'skill' to be developed, and to be applied throughout the programme within this aspect of the classroom environment, is that of critical reasoning. As noted earlier, it is important that lecturers and their student resist the temptation to cover ground that has already been dealt with, or assumed to have been dealt with, in the online lectures or further reading assigned before class. It is also important to avoid using the time to work through example problem scenarios which is to be covered in greater depth within the workshop component of the course. Rather, in order to develop students' critical thinking, it is essential that lecturers are prepared to go 'off topic', to leave behind a tutorial plan or restrictive curriculum, and to embrace the fact that the answer is less important than the logical reasoning or the process of critical thinking being developed by their students (Berger & Wild 2017). In this regard, the author suggests that one of the most effective ways in which critical reasoning amongst students may be developed, and encouraged, is through adoption of the Socratic Method within these Skills Based Lectures.

The Socratic Method transcends subject matter as it seeks understanding through deep questioning; the questioner as the unknowing bystander. However, as Berger & Wild (2017) observe, the fact that it isn't restricted to one particular field or topic, means that it can be extremely difficult to use in the classroom with any true success, especially within a sector such as Higher Education that is focused on specific educational goals, (by the end of this class you will understand X, or Y), and in measuring a student's knowledge at pre-determined intervals via paper-based assessments.

As such, the three elements of the refined flipped classroom model are:

- (i) online lectures which are viewed outside the classroom;
- (ii) the skills based lectures which are delivered face-to-face in groups of 40-50 student; and
- (iii) workshops which are delivered face-to-face in groups of 12-15 students.

Within this refined flipped classroom model, the online lecture is accepted by both staff and students as an information repository which simply aims to provide a body of knowledge accompanied by external reading sources intended to extend students' cache of information and to provide contrasting perspectives on the subject matter. The skills based lecture is then intended to provide a forum for debate and the critical analysis of the topic (Berger & Wild 2016). The Skills Based Lecture element of the curriculum provides the opportunity for students to engage in a qualitative debate regarding the course content, facilitated by the lecturer. The closer that this activity can move towards a Socratic Method environment, the greater the opportunity for critical reasoning to be encouraged and developed amongst the student cohort. In essence, by delivering the Skills Based Lecture in this way, there will never be repetition of the online lecture content with students being taught HOW to think, not WHAT to think.

Finally, the workshop element ensures that students lead the debate and seek to apply both the foundation knowledge and critical analysis points of the topic to complex decision making scenarios (Wild, Weinstein & Santora 2017). The role of the lecturer is to keep students on-course to best practice. By delivering the programme in this way, students are encouraged to engage with all three unique parts of the course.

Variations in Learning Style

As noted earlier, both Banks (2006) and Pewewardy (2008) observe that minority students differ in the ways they learn and communicate from their white peers. Crozier et al (2008) also highlight that curricula, learning, teaching and assessment practices impact significantly on student engagement and experiences (See also: David et al., 2009; Roberts, 2011; Burke et al., 2013) and ultimately on outcomes. However, Mountford-Zimdars et al (2015) warn of the potential dangers associated with 'targeted intervention' (supposedly designed to eradicate bias against whole demographics), which may in reality create a 'self-fulfilling prophecy' by reinforcing stereotypes. Equally, as Morgan (2010) notes, minority students only differ "*from what a given culture considers appropriate or normal.*" Consequently, within the UK Higher Education sector, where the traditional norm has been based on the provision of education to a predominantly white middle-class student cohort, the concept of 'appropriate or normal' needs to be reviewed so as to respond to an increasingly diverse cohort.

Indeed, Morgan (2010: 114) notes that one reason that minority students are likely to encounter more problems than their mainstream counterparts relates to incomplete knowledge of minority students' learning and communication styles. Dunn and Dunn (1993) go on to highlight that students from a particular culture are likely to perform poorly academically and regard their educational experience negatively if teaching styles do not match the ways they communicate and learn.

For example, Aronson & Gonzales (1988) found that African American and Latino students tend to improve academically when cooperative learning methods of teaching are utilised. Similar research on Native American Indian and Alaska Native students indicates a similar preference for cooperative learning amongst students (Pewewardy 2008). Morgan (2010:116) goes on to note that Native American cultures “*greatly respect people who share*”, placing less value on possessions than Anglo cultures. This underlying cultural norm translates into the classroom, making Native American students “more likely to help other students and less likely to show that they know an answer if others do not.” Judging such students as lacking motivation because they do not raise their hands may unknowingly discriminate against them (Morgan 2010: 116).

In contrast to African American and Latino students who tend to be *field-dependent* – (a preference to work together) – Banks (2006) notes that Anglo-American students tend to be *field-independent* – (a preference to work alone). As a result, they are more likely to be detached, goal oriented, competitive, analytical, and logical (Irvine and York 1995; Pewewardy 2008). Morgan (2010: 116) highlights the fact that it is also easier for “*such students to break down a whole subject or topic and understand that its parts added together can re-form the whole.*”

In this regard, Mountford-Zimdars et al (2015) recommend the adoption of an inclusive ‘post-racial’ approach, stating: ‘*There is some caution about targeted interventions among some in the sector for fear that they may reinforce a model of student deficit. The notion of a ‘post-racial’ pedagogy...is to avoid labelling people (acknowledging that notions of diversity should not be restricted to particular issues such as ethnicity, faith or immigration status). A post-racial approach acknowledges a broad meaning of diversity and positively values all students’ social and cultural capital, rather than requiring them to adapt to a dominant ideal. Overall, a positive trend was observed in the research of a move from approaches that aim at ‘integration’ of non-traditional students towards a broader concept of ‘inclusive’ HE.*

However, whilst such an inclusive approach should treat all members of the cohort as equals, this must be balanced by the recognition of individual variations within this class. Consequently, whilst teachers may believe that they avoid discriminating against any specific group by treating all students the same way, in reality this practice is, in itself, discriminatory (Banks 2006; Gollnick and Chinn 2009). For example, requiring all students to follow one style of teaching can, inadvertently, benefit the group or groups of students who are most comfortable with that approach (Morgan 2010: 117).

The author suggests that it is the ability to strike a balance which must be achieved if HE institutions are to effectively close the BAME attainment gap. Bennett (2007) observes that teachers should not be underestimated in their ability to bridge cultural gaps but also notes that to do this they need to reflect on their own teaching styles and understand the learning styles of their students without making generalizations. In

this regard, Bennet (2007) highlights the fact that many teachers tend to replicate the approach they experienced when learning unless they are deliberately challenged to teach in another manner. In this regard, Morgan (2010) suggests that one of the best teaching strategies in a culturally diverse society is to use as many modes as possible (Morgan 2010: 118). For students weak in certain skills due to cultural norms, introducing the needed skills gradually allows students more time to learn new ways of accomplishing tasks (Morgan 2010: 119)

For this reason, the author suggests that use of the Socratic Method of learning and teaching – an established means of eliciting critical reasoning from individuals in a group setting - works well as part of the refined flipped classroom. Moreover, it appears to work effectively as a part of this refined model in reducing the BAME attainment gap. Indeed, when used appropriately by the lecturer, the Socratic Method may support many minority student groups within a cohort who are field dependent to enhance their academic performance through cooperative learning within the classroom. The process of challenge and subsequent understanding through the use of deep questioning may also prove helpful in engaging many Chinese students whose cultural norm is to accept, rather than challenge, a lecturer's knowledge (Morgan 2010). Socio-cultural characteristics may also be seen as enriching a diverse session, with the championing of divergent views seeking to add depth and perspective to in-class debates. Finally, if institutions, and their staff, appreciate how to deliver these sessions, what they are intended to achieve, and assess consistently and objectively, this should mitigate against the interplay between macro, meso and micro level problems within HEIs, which Mountford-Zimdars et al suggest contribute to the existence of the BAME attainment gap.

Conclusions

The refined flipped-classroom model was adopted across an entire undergraduate programme and, during this time, the School has noted a significant reduction in the BAME attainment gap.

When the academic performance of Home / EU (as opposed to overseas) students was compared during the period 2012/13 through to 2014/15, the following pattern of student achievement was noted. This has been broken down according to the broad ethnic groupings used by the University and focuses on the percentage of students who graduated from the School with a good honours degree. The 2012/13 academic year acts as a baseline since the refined flipped classroom model was introduced the preceding year:

Ethnicity	2012/13	2013/14	2014/15
White	79	79	75
Asian	67	73	75
Black	55	58	69
Chinese	50	100	100

Source: Own institutions data

A significant improvement in the academic achievement of BAME students is clearly highlighted, with a marked and sustained reduction in the attainment gap of Asian, Black and Chinese students when compared with their White peers. It is also interesting to note that there has been a relatively consistent level of achievement by White students during this period, tailing off slightly towards the end of the period analysed.

It is also worth noting that for the period in question that students entering the University possessed similar UCAS tariff rates – 340 – which indicates that despite the improved graduate performance, the student cohorts in each of these years possessed similar incoming educational capability.

As noted earlier, this model is not restricted to use within legal education but has wider application to any subject which seeks to encourage and develop its students' critical reasoning skills. Indeed, at the time of writing, the University is seeking to extend and embed the refined flipped classroom model across a number of programmes and disciplines. The author hopes that this collaborative, cross-disciplinary approach will further enhance the model.

Reference

- Alpay, E. & Gulati, S. (2010), Student-led podcasting for engineering education, *European Journal of Engineering Education*, 35, pp415–442
- Aronson, E. & A Gonzalez (1988) "Desegregation, Jigsaw, and the Mexican-American Experience", in *Eliminating Racism: Profiles in Controversy*, ed P A Katz and D A Taylor, p301–314 New York: Plenum
- Banks, J A (2006), *Cultural Diversity and Education: Foundations, Curriculum, and Teaching*. New York: Pearson Education
- Bennett, C I (2007) *Comprehensive Multicultural Education: Theory and Practice*. New York: Pearson Education
- Berger.D & Wild.C, (2016), Refining the traditional flipped classroom model to optimise student performance on undergraduate degree programmes, *Journal of Commonwealth Law and Legal Education*, 11(1) pp50-70

- Berger.D & Wild.C, (2017) Nevermore: A case study examining how the Socratic Method may be used to enhance student engagement and reduce the 'attainment gap' of black and minority ethnic (BME) students, Higher Education Review
- Bergmann J & Sams A. (2012), Flip your classroom: reach every student in every class every day, International Society for Technology in Education
- Bishop JL. (2013), A controlled study of the flipped classroom with numerical methods for engineers, PhD Dissertation. Logan, Utah: Utah State University
- Burke, P.J., Crozier, G., Read, B., Hall, J., Peat, J. & Francis, B. (2013), Formations of gender and Higher Education Pedagogies, National Teaching Fellowship Scheme Final Report.
- Crippen, K. J., & Earl, B. L. (2004) Considering the effectiveness of web-based worked example in introductory chemistry, Journal of Computers in Mathematics and Science Teaching, 23, pp151–167.
- Crozier, G. and Reay, D. (2008) 'The Socio-Cultural and Learning Experiences of Working Class Students in HE' ESRC Full Research Report. Swindon: Economic and Social Research Council
- David, M., Bathmaker, A., Crozier, G. et al. (2009) Widening Participation Through Improving Learning. London and New York: Routledge.
- Day JA, Foley JD. (2006), Evaluating a web lecture intervention in a human-computer interaction course. IEEE transactions on education. 49(4) pp420-431
- Dunn, R. & K Dunn (1993), Teaching Secondary Students through Their Individual Learning Styles: Practical Approaches for Grades 7–12. Boston: Allyn & Bacon
- Enfield, J. (2013) 'Looking at the Impact of the Flipped Classroom Model of Instruction on Undergraduate Multimedia Students at CSUN' Tech Trends, 57(6), pp14-27.
- Felder RM, Brent R. (2003), Designing and teaching courses to satisfy the ABET engineering criteria. Journal of Engineering Education, 92(1) pp7-25
- Freeman Herreid C & Schiller NA, (2013) Case Studies and the Flipped Classroom, Journal of College Science Teaching, 42(5), pp62-66
- Fulton, K. (2012). Upside down and inside out: Flip your classroom m to improve student learning. Learning & Leading with Technology, 39(8), pp12–17
- Gollnick, D M , and P C Chinn (2009), Multicultural Education in a Pluralistic Society. upper Saddle River, N J : Pearson Prentice Hall
- Irvine, J J , and D E York (1995) "Learning Styles and Culturally Diverse Students: A Literature Review " In Handbook of Research on Multicultural Education, ed J A Banks and C A M Banks, pp484–497 New York: Macmillan
- Maarek, J.I., & Kay, B. (2015). Assessment of performance and student feedback in the flipped classroom. 122nd ASEE Annual Conference & Exposition, Seattle, WA. June 14-17, 10.18260/p.23602, <https://peer.asee.org/assessment-of-performance-and-student-feedback-in-the-flipped-classroom>

- Marek JMI, Kay B, (2015) Assessment of performance and student feedback in the flipped classroom, 122nd American Society for Engineering Education (ASEE) Annual Conference & Exposition, 14-17 June
- Mason GS, Rutar Shuman T, Cook KE. (2013) Comparing the effectiveness of an inverted classroom to a traditional classroom in an upper-division engineering course. *IEEE Transactions on Education*. 56(4) pp430-435.
- McGarr, O. (2009) A review of podcasting in higher education: Its influence on the traditional lecture, *Australasian Journal of Educational Technology*, 25, pp309–321
- Moore, A. J., Gillett, M. R. and Steele, M. D. (2014). 'Fostering Student Engagement with the Flip', *The Mathematics Teacher*, 107(6), pp420–425.
- Morgan, H (2010), 'Improving Schooling for Cultural Minorities: The Right Teaching Styles Can Make a Big Difference', *Educational Horizons*, pp114-120
- Mountford-Zimdards, A., Sabri, D., Moore, J., Sanders, J., Jones, S. and Higham, L. (2015) 'Causes of differences in student outcomes', Report to Higher Education Funding Council for England (HEFCE) by King's College London, ARC Network and The University of Manchester
- Pewewardy, C (2008) "Learning Styles of American Indian/Alaska Native Students" In *Classic Edition Sources: Multicultural Education*, ed J Noel, pp116–121 New York: McGraw-Hill
- Pierce, R., and Fox, J. (2012). *Vodcasts and Active-Learning Exercises in a "Flipped Classroom" Model of a Renal Pharmacotherapy Module*. *American Journal of Pharmaceutical Education*, 76(10), pp196-208
- Roberts, S. (2011) Traditional practice for non-traditional students? Examining the role of pedagogy in higher education retention. *Journal of Further and Higher Education*, 35(2), pp183-199
- Ruddick, K. W. (2012). *Improving chemical education from high school to college using a more hands-on approach*. Unpublished doctoral dissertation, University of Memphis
- Tucker, B. (2012) 'The Flipped Classroom' *Education Next*, 12(1), pp82–83
- Vajoczki, S., Watt, S., Marquis, N., & Holshausen, K. (2010). Podcasts: are they an effective tool to enhance student learning? A case study from McMaster University, Hamilton Canada. *Journal of Educational Multimedia and Hypermedia*, 19, pp349–362.
- Wang.V & Lee.J (2015) Study shows flipped classrooms benefit female students, *Yale Daily News*, 2 October, <http://yaledailynews.com/blog/2015/10/02/study-shows-flipped-classrooms-benefit-female-students/>
- Wild.C, Weinstein.S & Santora.J, (2017), "Enhancing the development of Law Students' critical reasoning skills through the use of Complex Decision-Forcing case studies", *European Conference on Education*, 30 June – 2 July.
- Zappe, S., Leicht, R., Messner, J., Litzinger, T., & Lee, H. (2009). "Flipping" the classroom to explore active learning in a large undergraduate course. *Proceedings of the 2009 American Society for Engineering Education Annual Conference and Exhibition*