ENHANCING ENGAGEMENT WITH MANDATORY MODULES: FORENSIC SCIENCE STUDENTS AND LEARNING THE LAW

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Abstract

This article investigates the lack of engagement which forensic science students have demonstrated with seminars in law, taught by the author at the University of Central Lancashire. With the students' seminar performance accounting for 25 per cent of their overall module grade, the second year undergraduate module is a requisite for their course and covers the foundations of criminal and civil law as well as the role and scope of forensic science within the legal system. In exploring this issue and its implications for the student experience and assessment, motivational theories and literature, proposals for more creative teaching practices and ideas for curriculum development are discussed, in the hope that feasible solutions can be formulated to aid the planning of engaging lessons for this module in future academic years and improve the learning and teaching experience for both students and lecturers of law-science, interdisciplinary or requisite modules.

Keywords: forensic, science, law, legal, education, interdisciplinary, motivation, engagement, requisite

1. Introduction

When discussing higher education teaching, Ericksen states that 'effective learning in the classroom depends on the teacher's ability to maintain the interest that brought the students to the course in the first place' (1978:3). But how is the teacher supposed to counteract their students' lack of motivation and enthusiasm for a module which did not bring them to the course, but is a compulsory requisite?

Such is the experience I have encountered in delivering law seminars to students from forensic science courses. The module is designed to acquaint students with the

foundations of civil and criminal law, the contributions of forensic science within the legal process, the role of the expert witness, how the reliability and fairness of evidence is tested and the provisions available within law to assess novel scientific evidence. The problems faced on this module include a lack of student engagement with the reading material designed to aid in preparation for classroom discussions, as well as reluctance of students to actively participate in the discussions themselves. From my own experience and through consultation with colleagues, it appears that the students are unmotivated to learn the legal procedure and legislation underpinning the practical science which attracted them to their course. According to Savery, this is a common problem for teachers of required subjects, who 'often encounter students who appear less motivated to learn' (1999:33).

As a graduate of a forensic science degree, I can appreciate that forensic science students may have a keener interest in the practical science aspects of their course, as that is what they chose to study, and with this in mind I have tried to relate the law to forensic scenarios. In addition, I have incorporated strategies to make the seminar experience more interesting in general, such as using pair work, group work and debates to increase discussion. Debates in particular have worked well in terms of engagement, for example dividing the group in half and getting them to argue for the positive and negative aspects of an issue, such as a nationwide DNA database. However these are often successful due to the students utilising their own opinions on the matter, rather than reading the background literature and legislation.

This lack of motivation is an issue for three reasons. Firstly, the crux of forensic science is its association with the law, given that the word "forensic" 'literally means 'pertaining to the law'' (Roberts 2011:12). Because the two subjects are so closely linked, I disagree with Latham's statement that 'ignorance of fields outside one's speciality is inevitable' (2010:34); the law is what differentiates forensic science from other sciences and cannot be overlooked.

Secondly, as well it being beneficial for them to understand the interplay between forensic science and law, the students are also continually assessed on their participation in seminar discussions. If they do not engage with the materials or contribute in the discussion, their grades will also suffer, as they are assessed on the criteria of preparation, understanding, sensibility and contribution.

Finally, from a more selfish perspective, I find it disheartening to deliver a lesson which I am enthusiastic about and have dedicated time to preparing, only to be met with disinterest from students. I do not want this issue to affect my enjoyment for teaching and thus impact upon my teaching practice; as McMahon (2007) states, 'motivated students make the teaching experience more enjoyable for the teacher, and this generates more teaching enthusiasm which rubs off on student motivation'.

The following discussion will explore the literature relating to student motivation, the ideas generated from this and their implications for practice.

2. Motivational theories

Schunk, Pintrich and Meece define motivation as 'the process whereby goal-driven activity is instigated and sustained' (2008:4).There are many different theories relating to student motivation, ranging from behavioural, cognitive, humanistic and instinctive (Schunk, Pintrich and Meece 2008:17). Many theories focus on the student themselves as the deciding influence on their motivation, for example their personality, expectations and maturity, whilst the 'effect on students of the...university environment is not normally considered' (Beard and Senior 1980:31). It could be easy to dismiss motivation as a factor which students either do or do not possess, but as an educator I am not satisfied with this conclusion and I believe the effect of teaching delivery on motivation requires further exploration.

A predominant perspective on student motivation is the concept of intrinsic motivation, which focuses on the internal motivational state of the learner (Ames and Ames 1985:2). This may derive from the student's personal goals or their interest in the subject area, and culminates in them "wanting" to learn (Race 1998:47). In contrast, extrinsic motivation describes when the student is motivated by an external incentive or "need" to learn, for example a reward or fear of failure (Entwistle 1998:16). However, this 'reward/punishment approach doesn't work well enough for the majority of students' (Sullo 2009:36) and intrinsic motivation is seen as 'the strongest and most persuasive driver' (Pink 2010:23). This is the type of motivation I aspire to develop in my students, so that they develop an interest, that is 'liking and willing engagement' (Schunk, Pintrich and Meece 2008:237), in the law. Being

motivated intrinsically also leads to a deeper understanding of the subject, as opposed to a surface approach commonly resultant from being externally motivated (Entwistle 1998:16).

Ryan and Connell (1989) describe the transformation of a "need" to learn into a "want" to learn as a continuum of self-regulation; from extrinsic regulation (that is being praised or disciplined by a teacher for completing or not completing a task), to introjected regulation (approving or disapproving of oneself for completing or not completing a task) to identification (the student identifying their own learning goals and desires and pursuing them). Whilst intrinsic motivation is inherent to the student themselves, several scholars have explored the ways in which teachers can encourage this continuum and 'create a thirst for learning' (Race 1998).

3. Teaching delivery and motivation

Intrinsic motivation can be increased by students having autonomy over their learning, a perception of mastery or competence in an activity and a sense of purpose to the learning (Pink 2010:85-146, Ames and Ames 1985:3), all of which must be facilitated by the teacher and the learning environment.

Autonomy, or a sense of ownership, in the classroom can be fostered by the teacher providing structure and guidance, as opposed to neglect and control, to allow students to complete tasks competently under their own direction (Ames and Ames 1985:53). By the student having more control over tasks, they are able to develop their self-direction and self-regulation skills, which also provides a sense of personal mastery and competence.

Mastery over learning can also be encouraged by offering novel, engaging tasks, in which the student should be required to actively participate as 'passivity dampens students' motivation and curiosity'(Gross Davis 2011:2). Incorporating challenges, curiosity and inquiry into learning can develop a student's competence as they seek to fill the gaps in their knowledge (Schunk, Pintrich and Meece 2008:265). With regard to teaching law to forensic science students, the tasks should include questions of fact, analysis and be related to legal processes and procedures, as

opposed to the substantive law of traditional law degrees, to accommodate their analytical style of thinking (Roberts 2011:14).

As Beard and Senior note, 'it is ineffectual to engage students in an activity of which they do not see the point' (1980:55) and it is importance to demonstrate the purpose behind the learning, particularly when teaching mandatory modules where this purpose may not be obvious to students. Students must see the relevance of what they are learning to their chosen field of study in order to appreciate its meaningfulness, that is how it will enable them to accomplish a goal or satisfy a need (Jackson 2011:28). An effective way of achieving this is to relate the task to its real life applications (Pink 2010:175) as well as the broader context and future employment (McMahon 2007, Beard and Senior 1980:57).

The importance of legal applications for forensic science students is encapsulated by Roberts, who states that 'good science with no scope for legal applications can never be good *forensic science*' (in Cassella and McCartney 2011:87). The primary purpose for studying law, which should be communicated to forensic science students, is the need to understand the role, duties and expectations of a forensic scientist within the investigative process and legal context (Cassella and McCartney 2011:86). This is especially prudent given that the avenues of forensic inquiry will almost always be dictated by the law, for example the proof required for a particular criminal charge will affect what evidence is sought.

Other delivery factors which can promote intrinsic motivation include providing clear direction, goals and feedback, a range of teaching styles, media and stimuli to incorporate variety into the classroom and accommodate different learning styles, involvement of student's contributions, enthusiasm and a friendly, open teaching style (Beard and Senior 1980:63, Ames and Ames 1985:80, Jackson 2011:38)

It is imperative that the students' attention is engaged in order for them to benefit from any strategy to enhance autonomy, mastery or purpose (Ames and Ames 1985:32). Entwistle notes that approaches used to engage students are what differentiates 'teaching to encourage understanding' and 'teaching to transmit information', with the former requiring an interactive 'theatrical element' rather than rote learning (1998:22). Gross Davis agrees with this, stating that the use of a variety of activities 'reawakens students' involvement' with learning (2011:4).

4. Motivational ideas for practice

Gross Davis suggests several ideas to encourage students to engage with preliminary reading material, such as having them submit the notes which they have compiled whilst reading the material, a short summary of the key points contained within the material or their preparation for an answer to one of the seminar questions (2011:6). Students could also be asked to prepare in other ways, such as bringing relevant newspaper cuttings to the lesson (Habeshaw, Habeshaw and Gibbs 1992:67). From my perspective as a tutor, this would be an easy way of encouraging student preparation and, by extension, ensure students are equipped to contribute to discussion, however the quantity of paperwork to be submitted would need to be considered in relation to the time I have available to review it.

In order to encourage active participation, games, simulations and case studies can be powerful tools for student-centred learning which allow for autonomy and mastery; being able to link subject areas as well as promote communication, creative thinking and decision-making (Brandes and Phillips 1990:5, Ellington and Earl 1998:11). Games can also provide a sense of focus to a topic which may be unachievable through general discussion (Brandes and Phillips 1990:5), while case studies can demonstrate the real-life applications and thus relevance of a topic. Simulations can also achieve this, though in a more flexible style than case studies, as the scenario can be tailored to the topic without having to stick to the facts of a case (Ellington and Earl 1998:10). These activities can be applied to legal teaching through having students explore forensic matters within case law examples, as well as conducting mock-court scenarios where students can practice presenting scientific evidence as an expert witness (Cassella and McCartney 2011:87), learn about courtroom etiquette and experience the cross-examination process which forensic scientists are subjected to (McCartney and Cassella 2008:1). I have utilised such case studies with the students and have found their engagement to be higher than during a typical "question and answer" lesson.

In addition, Eastwood *et al* (2009) propose many ideas for creative activities to actively involve students, some of which they have specifically tailored to law. These include problem-solving scenarios which can be viewed from different practitioners'

perspectives; "true or false" style games for facts; having the students hold cards and physically arrange themselves into the stages of court proceedings and role playing as actors in a legal scenario. Ommundsen (1999:25) advocates problem-based learning (PBL) activities especially to overcome the lack of interest or enthusiasm which students may display for compulsory core modules. These activities, such as small group work to investigate the problems deriving from case studies, can increase the subject's relevance and meaningfulness to students, particularly when the activity is 'anchored' in a real-life context (Savery in Fallows and Ahmet 1999:40). PBL activities also encourage students to cooperate with others and direct their own learning, providing a sense of ownership over the task, with the teacher acting as a facilitator. Small group work can also provide more opportunities for learning-by-doing and receiving teacher feedback (Race in Brown, Armstrong and Thompson 1998:53), which can help to foster an environment of experimentation, an element which Beard and Senior (1980:72) believe can be inhibited by continual assessment. From my experience, students also often feel more comfortable expressing ideas in small groups rather than individually to the whole class, and this can prompt them to join in with further class-wide discussion.

Assessment can provide incentive to work for some students and Leach, Neutze and Zepke (1998:204) believe continuous informal assessment can be motivational in itself, by providing more regular feedback, dialogue and stimulation than staggered assessments over the year. In contrast, Beard and Senior have found continuous assessment to be inhibiting as the students may 'feel they cannot afford to experiment' due to every learning opportunity being graded (1980:72). This may be counteracted by taking the emphasis off formal summative assessment; instead making it clear to students that mistakes are part of the learning process and helping them to monitor their own progress by encouraging them to regularly critique and analyse their work (Gross Davis 2011:4). Jackson *et al* suggest that this can be developed further by implementing student self-assessment, which they believe can significantly increase motivation (2006:169).

5. Synthesis of theory and practice

Much of the aforementioned research into motivation can be applicable to the teaching of law to forensic science students, as it focuses on activities which require the active participation of the learner which many students of my module, attracted to the very practical elements of their courses, often require to interest them rather than passive rote learning.

I believe Gross Davis' (2011:6) idea of having students submit a hard copy of their seminar preparation is particularly inspired. I have previously used this in a situation with a student with communication difficulties, as a substitute for their contribution to discussion, and believe it could be easily implemented on a classroom-wide scale. I think it would be a good incentive for students to engage with the reading material, as well as providing an additional means of formative assessment for me to evaluate their understanding as well as the module as a whole and whether I need to cover any topics in further detail. In addition, by asking them to synthesise or summarise the material, as opposed to just copying from the text without processing it, their understanding is likely to be improved. I intend to pursue this idea as a link to their assessment, as it would contribute towards the assessment criteria of evidencing preparation and understanding.

I am also interested in the idea of using games, case studies and simulations. I have used the latter two techniques before and do feel they make the material more relevant to forensic students. However, I have previously used these techniques by only describing the case or scenario and asking the students questions about it. I think utilising resources such as the Law School's Moot Court Room would prove more engaging for recreating court cases or simulations, by incorporating a more interesting and active learning environment, as well as vividly illustrating the forensic scientist's role in court as Cassella and McCartney (2011:87) suggest.

Similarly, I find the concepts of physical games appealing, particularly Eastwood *et al*'s (2009) card sequence game, and can envisage using it when discussing dynamic processes such as the crime scene investigator's role from crime scene to courtroom. However this would require consideration of inclusion strategies for students with physical disabilities or impairments. I think problem-based learning is also an effective technique which I have used for small group work in the past, as it is flexible and it can be easy to manipulate a seminar question into a problem

requiring investigation. My current use of PBL tasks could be developed by allowing students to choose how to present their findings, for example verbally, by poster or by diagram, and I believe this would increase their sense of ownership over their learning.

With regards to assessment, I disagree with Leach, Neutze and Zepke (1998:204) in their belief that continuous assessment can be motivating. From my experience, the "threat" of being graded provides no extra incentive for students to participate and, as Gross Davis states (2011:4), can stifle their willingness to express ideas, as they fear saying something incorrect which will affect their grade. In agreement with Gross Davis, I think it would be beneficial to create opportunities for students to monitor their progress, which would place more emphasis on the process of learning than the product of a grade. This could be as simple as asking them to complete a short self-evaluation log over the course of the year, which I have used successfully in other modules, with regular entries to explain what they feel they have learnt or improved on; allowing them to assess whether they are meeting the Learning Objectives and to see the relevance and importance of the law to their future forensic science profession.

6. Implications for practice

The main challenges for feasibly implementing the above ideas would be related to the organisation of and time available in the curriculum. The seminars are only 50 minutes long each, so the creative approaches to delivery would have to cover the core knowledge required within this time frame. Whilst curriculum and creativity are sometimes discussed as separate and distinct elements (Mourant 2006), the two could be interwoven effectively into a "creative curriculum"; by using interesting activities which are underpinned with subject knowledge.

I feel that developing a more creative curriculum would not cause a large impact on the organisation and administration of the module, as the existing core material would not need extensive rewriting. Rather, the lesson plans would require restructuring with the material manipulated into games and PBL activities, as opposed to, for example, questions and answer sessions. However, due to the time

constraints of seminars, it would be necessary for students to undertake the required reading before the lesson in order for them to get value from these activities and this is why the submission of preparatory notes may require enforcing, to ensure they do the reading.

Requesting that students submit evidence of their preparation would likely also enhance assessment, rather than having a negative impact. Rather than replacing the verbal participation in seminars (as the criteria for contribution and sensibility of verbal answers would still need to be fulfilled), written submissions would supplement the students' demonstrations of preparation and understanding. This would be particularly useful for less confident communicators who may be overshadowed by dominant students in discussion, a problem I have encountered at the other extreme of engagement on this module.

The resources required for implementing games, case studies and simulations into the seminars would not be difficult to source or produce, consisting of mainly cards, flipchart paper or printouts, though specialist rooms such as the Moot Court Room require booking in advance as they can be sought after by many teachers.

Such changes to a module could be more easily implemented with increased staff collaboration and communication between forensic science and law departments in Higher Education institutions. As Latham (2010:34) states, "Instead of melding the two cultures, we need to establish conditions of cooperation, mutual respect, and mutual reliance between them." By developing contact channels between the two departments, the existing knowledge base of the forensic science students would be clearer when they begin learning within law departments and the students would develop an understanding of the law-science interface which is not restricted to the boundaries or isolation of either school, enabling cross-disciplinary educational aims to be met (Cassella & McCartney 2011:85).

7. Conclusion

The purpose of this investigation was to explore ways of increasing forensic science students' motivation in order for them to engage more with a mandatory module in law, specifically their participation in seminars. After researching theories on

motivation and the potential solutions posed by others, I discussed the feasibility of synthesising teaching and learning methods into my teaching practice given the time and resources available on the module. These ideas included the submission of preparatory notes as an incentive for students to undertake the preliminary reading for seminars, the introduction of games, case studies and simulations to add variety and demonstrate the real life applications of the law and increasing the focus on formative, rather than summative, assessment.

This investigation has increased my consciousness of how responsible I feel for student engagement as an educator, the need to think more flexibly and spontaneously about how I deliver seminars and to feel more confident in straying from the structured plans and materials I was initially presented with in my career. It has allowed me to realise that such a rigid approach will not necessarily work when crossing disciplines; particularly when forensic science courses incorporate, and may foster students' expectations of, a lot of practical elements. I feel that communicating the relevance of the subject material is of particular importance to students on mandatory modules, as whilst this may seem obvious to lecturers it may not be initially apparent to students, and forensic students need to see how the law can be applied to the practical science which attracted them to their course.

In addition, I have learnt that I can afford to be more fun and creative in my teaching practice, and it will not mean that my students will not learn as effectively as they would from intense legal discussions. To the contrary, by implementing the identified ideas and approaches they may actually learn more, by providing the purpose, autonomy and mastery opportunities which make them intrinsically motivated to learn.

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