

Case Studies

Flipping Wounds

Adele Atkinson

Kingston University & St George's University of London

Introduction

Nurse educators need to develop more flexible approaches to learning in order to meet the needs of future healthcare workers (HEE, 2014). Using a 'Flipped Classroom' is one such strategy. This case study explores flipped learning in this context and reflects upon both the student and facilitator experiences.

The author runs a 'Wound Healing & Tissue Repair Module' (Wound Module) for post-registration (qualified) healthcare professionals, including nurses, paramedics and podiatrists. This was converted into a Blended Learning module several years ago (Atkinson, 2003) and has now been restructured, allowing students to access the module content outside the sessions and then discuss it in face-to-face, problem-based learning (PBL)/ enquiry-based learning (EBL) seminar sessions.

During the six-week (one day per week is face-to-face) module, students explore online content and apply it to a specific online virtual patient. The Week 1 introductory day sets students up for the EBL process: they each select, from a choice of five, a virtual online patient, thereby determining the EBL session group that they will be in. The morning sessions of Weeks 2-5 are 'protected time' for students to explore the online content; the afternoons are for face-to-face EBL discussions. The final day in Week 6 is given over to a morning session to complete the EBL activities and an afternoon session for students to share their learning with the whole group (see Diagram 1). The assignment for this module is based on the EBL process.

Diagram 1: Module Structure

Week One: Study Day 1	Weeks Two-Five: Study Days 2-5	Week Six: Study Day 6
All day: Introduction to the module, use of EBL and setting the scene. Choosing a virtual online patient.	AM – Self-directed study PM – Face-to-face EBL seminars (groups are linked to a virtual online patient)	All day: Finish off EBL and present EBL findings to whole group.
Assessment: Linked to one aspect of the EBL discussions.		

Flipped learning

There is a lack of consensus regarding what constitutes a flipped classroom. Examples in the literature range from small amounts of online videos to be accessed in students' own time (Prober and Khan, 2013; O'Flaherty and Phillips, 2015) to directed online instruction outside the classroom (either with or without use of videos) with interactive group activities during face-to-face sessions (McLaughlin, Gharkholonarehe and Esserman, 2014). What does seem to be common is the notion that students do what traditionally was done in class outside the classroom in their own time, and what was seen as 'homework' is now done in class time. This aims to ensure that the students understand the subject through a variety of active learning strategies (Herreid and Schiller, 2013; Bishop and Verleger, 2013; McLaughlin, Gharkholonarehe and Esserman, 2014).

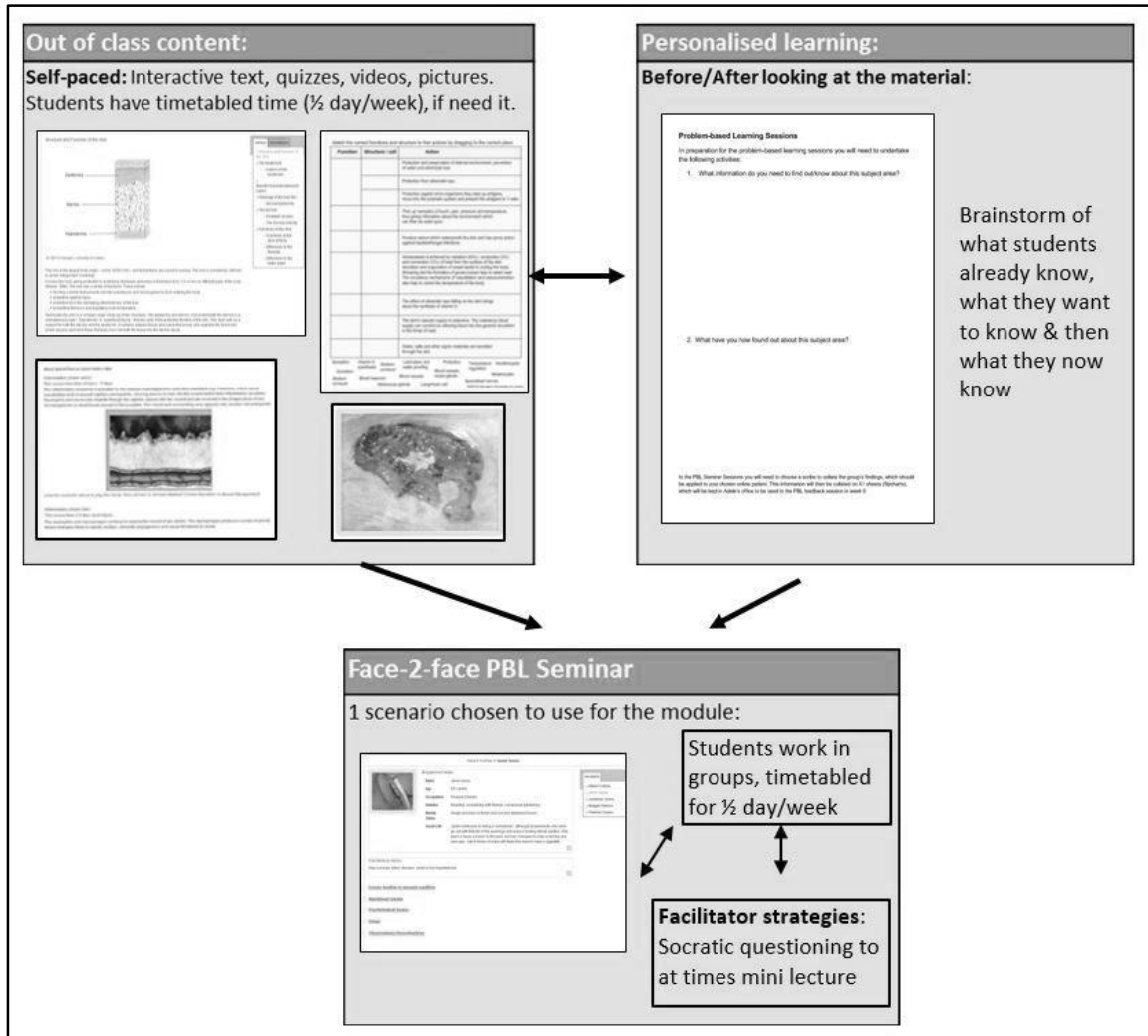
Flipping for the Wound Module aims to ensure that students have equal access to the breadth and depth of specialist interactive content. The module content is online and is made up of videos, images of wounds, reading lists, quizzes, crosswords and drag-and-drop exercises which had been updated from the blended learning module. Students can go through the content in their own time, to be ready for discussion in the face-to-face sessions. The material is presented in weekly sessions. For example, session one looks at the structure and function of the skin, physiology of wound healing and factors affecting wound healing; session two focuses on nutrition and wound healing and altered body image in wounds. Students thus have the scaffolding to enable them all to have the same content and therefore start at the same level. Ensuring that all students had access to the content material also means that they can concentrate on learning (and applying theory to practice in face-to-face sessions), rather than becoming frustrated over trying to source their own learning material (Kirschner, Sweller and Clark, 2006).

Before exploring the online material, students fill in a form (for their own use) which identifies what they already know about the topic and what areas they need to explore further. Then, after exploring the material, they add what they have learned and how they think it relates to their online patient. This helps them personalise their learning and gets them ready for the face-to-face sessions (see Diagram 2).

The content is then applied to practice in face-to-face seminars by means of a PBL/EBL approach. It is important that online activities and face-to-face activities support each other, to increase student motivation and help with students' learning (Ginns and Ellis, 2007; Khanova *et al*, 2015).

The summative assessment further provides the student with an opportunity to demonstrate an ability to solve problems and apply theory to practice by critically discussing one issue of wound management identified from one of the module's online patients, using the discussions from the EBL process as a starting point. This helps them to see the relevance of what they are learning to practice and motivates them to learn via the online activities outside the EBL sessions.

Diagram 2: Flipped Learning Process



Problem-based learning

Since the NHS demands professionals who are able to solve problems, PBL is one way of learning to do this (Amos and White 1998).

Core to PBL is the use of real-life problems presented to students, who have to work, in small groups, through the situations presented in order to reach their conclusions. A problem constitutes the starting point of a subject area, rather than knowledge (Engel 1991). However, in the context of this module, the idea is for students to learn, linking their learning to their own experiences of practice, using an online patient scenario merely to give some commonality as a basis for discussion. EBL is similar to PBL in that a problem is the starting point and knowledge is used to explore solutions. For example, in this module, the students' starting point for the wound-healing session is to ask why the patient's wound looks like this, what stage of wound healing the wound is in and what patient factors have influenced the

healing of the wound. The key difference between EBL and PBL is that in EBL the facilitator is a facilitator of learning as well as providing knowledge, if necessary, whereas in PBL the facilitator does not provide knowledge (Savery, 2006).

The EBL process

From several fictional online patient profiles written by the author, students choose one and are put in face-to-face PBL/EBL seminar groups, to explore and apply to practice the theory that they have been learning. The patient can be seen as the 'trigger' needed to start discussions (Kirwan and Adams, 2009).

Working together also forms the basis of collaborative and cooperative learning, thus encouraging deep learning through the solving of problems (Greening 1998). There are some key differences between collaborative and cooperative learning that may feature here. According to Panitz (1999), collaborative learning is more student-centred, with individuals self-selecting, for example, groups and their roles. However, in cooperative learning, these areas are designated by the facilitator/teacher. Within this module, student groupings depend on their having chosen the same online patient.

As there is evidence that a lack of guidance hinders student learning (Kirschner *et al*, 2006), the author and a colleague (who also had expert knowledge in the subject) facilitate the EBL seminars. The use of facilitators can also help students learn (Bergmann and Sams, 2012, cited in McLaughlin, Gharkholonarehe and Esserman, 2014.) Facilitation strategies range from Socratic Questioning Techniques to, at times, information giving. The latter tends to happen if groups misunderstand key concepts. What is difficult is knowing how much information to give. This has also been found by Khanova *et al* (2015) and may be because the facilitators are seen as experts and students want reassurance that they are learning. At times, it is also noticeable that some students have not looked at the material online and these students typically ask very basic questions of the facilitators. Skill is required to ensure that the students themselves answer these questions. As the assessment is designed to try to motivate the students to explore the online material, this is disappointing.

In the first EBL session, students are generally hesitant about discussing what they have learned and seem confused as to what they are to do. Having been brought up in a passive learning culture, they may not be used to this type of active learning and consequently might find the lack of structure a challenge (Strayer, 2012; Kirwan and Adams, 2009). However, once they experience the first EBL seminar, their hesitation disappears and evaluations show that these sessions are enjoyed. The EBL sessions are timetabled to run over the six weeks of the module and, in the final week, the students present to each other their findings from all the weeks. As they are used to discussing concepts and ideas with each other in their groups, the ensuing whole-group debate over their findings also helps in the learning process.

Evaluation

Best features of the module/most valued:

During the verbal evaluation of the 2015 cohort, students frequently said they liked the online activities, the EBL sessions and working with students from other disciplines. This is consistent with findings discussed by Strayer (2012). Students enjoyed being able to

discuss with peers working in other hospital trusts and areas differences in practice, stating that they learned from the other students. Again this is consistent with some of the literature, e.g. Kirwan and Adams (2009). Khanova *et al* (2015) mention that students valued the ability to look again at the online material as many times as they wanted, something that students on this module also valued.

Interactions with lecturers during the EBL seminars were another positive area, although this did cause slight tension with the lecturers. However, the fact that students saw this as a positive feature and felt they could ask questions suggests that both lecturers created a safe environment, crucial for learning (Raghallaigh and Cunniffiee, 2013).

Though some students enjoyed the flexibility of the afternoon seminars and the lack of structure (Interestingly, Strayer (2012) reports that this was an area that students found frustrating.), not all of them appreciated this (see below).

There was overwhelming support for the use of online patients. Students enjoyed being able to select one from a small number, allowing them to choose one that linked to their own area of practice. This was important and in accord with the findings of Knowles (1984) and Raghallaigh and Cunniffe (2013), viz. that adults learn best when they can see the relevance of what they are learning. Students also commented that each group's having one online patient scenario helpfully provided a common goal for their discussions.

Factors that hindered learning

Students found several aspects unhelpful. Although they enjoyed the format of the module, it was initially seen as confusing. This may have been because they were not used to this type of learning, something consistent with findings from Kirwan and Adam's (2009) study, where students reported that lack of guidance made them feel nervous.

One student did not like the fact that the group came in only for half a day and felt that this was a waste of travelling time; this student also wanted more formal lectures. This might have been because she had not 'gelled' with the group and had become isolated, thus not enjoying the whole process (Case, 2007) or it might have been that she was not yet ready for the amount of self-directed learning (Brockett and Heimstra, 1991; Chan, 2001). Certainly Knowles (1984) sees self-direction as part of a continuum, with directed learning at one end and self-directed learning at the other, and part of the facilitator's role is to help students to move along the continuum.

Some students also felt that they were expected to do quite a lot of work in their own time. Though this is echoed by Khanova *et al* (2015) and Herreid and Schiller (2013), this module was different in that all the students were working and, whilst some were given time off for study days, others were undertaking the module in their own time - hence the rationale for 'protecting' study time for the half day in the morning. The importance of scaffolding and ensuring that the students have enough time to go through all the activities in a flipped learning environment cannot be overestimated. This may account for the fact that some students did not look at all the online material and, therefore, more time should be given to introducing this approach on the first day (O'Flaherty and Phillips, 2015), even though the assessment linked to this.

Lessons learned

This module was developed from a Blended Learning module, in which most of the content had already been developed and just needed the addition of quizzes and more interactivity. Nevertheless, this took time and such 'lead-in' time is something mentioned in the literature (O'Flaherty and Phillips, 2015; McLaughlin, Gharkholonarehe and Esserman, 2014). For new approaches such as this, lecturers need to be able to invest time in re-thinking old models.

A good working knowledge of digital media to ensure that students get the best out of the online materials is essential. Khanova *et al's* (2015) experience showed that the quality of the online material seemed to be important. Simple things, such as spelling mistakes and poorly-organised material, could prevent students from understanding what was meant. It is similarly vital to exploit digital media to ensure provision of a variety of different ways of learning, such as video, quizzes and pictures (in the case of wounds), so that students see these as something a bit different to engage with.

As the facilitator is crucial to the EBL process (Bebb and Pittam, 2004), the ability to use questioning skills and to be the 'guide on the side' rather than the 'sage on the stage' is important.

The literature suggests a variety of strategies to motivate the students to undertake the online activities. Strategies that would be appropriate in this type of EBL environment range from using clickers to check out learning in the classroom sessions (Schlaret *et al*, 2013; Flahery and Phillips, 2015) to reflective pair-and-share questions posted online twenty-four hours before the session (McLoughlin *et al*, 2014). Pair-and-share questions allow students to provide a structured answer to specific questions and the teacher shares selected ones. Within the context of this module, it might be that students share online the notes that they prepare for the personalised learning sheets (see Diagram 2) and these are discussed within the EBL sessions.

The way forward

There is no doubt that students enjoy learning and learn more when they are actively engaged in this process. Mostly, however, students' prior learning has been passive, which makes it difficult to facilitate the adoption of an active approach in such a short module. The author intends to persist with flipped learning, but to spend more time during the first study day on introducing and explaining the rationale for this approach. She will use clickers for some sessions and ask students to upload their 'personalised learning sheets' twenty-four hours before the session. Finally, facilitators also need time to adjust to the different skills required in flipped learning and the author intends to work with colleagues to practise techniques such as Socratic Questioning and other ways of helping students that do not rely on traditional lectures in face-to-face seminars.

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