The impact of assessment and feedback practice on the student learning experiences in higher education

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Abstract

Sound knowledge of the learning process and connectedness of assessment in higher education is imperative. Assessment is essential for both learners and teachers to ensure, and to provide evidence, that learning outcomes/objectives against set competency levels have been achieved for the chosen programme of the study. However, many coming into higher education are often unaware of the rules of the game. In this perspective, we will highlight the reasons why assessment is important, how assessment and feedback affect students’ learning process and why the process of assessment can often affect students’ mental wellbeing. We will appraise the different methods of assessment with a specific example (OSCEs) and highlight why it is important that we adopt a holistic approach towards fostering assessment know-how and student well-being.
Background

Student assessment in teaching and learning in higher education has been the focus of much scholarship and research over the last couple of decades [1–4]. In this perspective, we will discuss the purpose and types of assessment used in higher education and highlight specific examples from the School of Pharmacy, University of Lincoln. We will also analyse and reflect on ways assessment and feedback practices impact student learning and their general well-being.

Why is assessment important?

Student assessment constitutes a critical aspect of the teaching and learning process. At both undergraduate and graduate levels, instructors must evaluate the effectiveness of their teaching through various forms of assessment. For students, it is equally important that they provide evidence of achievement of specific learning outcomes via successful completion of these assessments. In their handbook for course-based review and assessment, Stassen et al. define assessment as “the systematic collection and analysis of information to improve student learning” [5]. This definition truly captures the true essence of student assessment in higher education. Student assessment enables instructors to measure the effectiveness of their teaching by linking student performance to intended learning outcomes (ILOs) [6]. Through an effective assessment strategy, teachers can establish effective teaching choices and revise or reform ineffective ones in their pedagogy. Students tend to learn both from assessment activities and the feedback they receive from staff on their performance. The feedback often constitutes two elements: a focus on their learning and how that has been demonstrated through the assessment, and an emphasis on furthering their learning which is often referred to as feedforward [7]. In addition to aiding effective student learning, assessment also needs to be able to measure the achievement of standards (e.g., to create a body of evidence for external accreditation) and the award of qualifications. Preferably, these two purposes should be served hand in hand, but there is often a conflict or lack of harmony. Changing discourses of academic standards often lead to contrasting decision-making processes when it comes to assessment design and execution [8,9]. Since staff and students spend a significant amount of time and energy on matters linked to
assessments, it is vital that we understand and therefore appreciate the reason or purpose of assessment.

One of the primary goals of assessment is to foster students’ development. Effective assessments help students identify any weaknesses they might have in learning a particular topic or subject, and through timely feedback, students can learn to diagnose errors or weaknesses and rectify mistakes. Through continuous assessment, students can use those learning opportunities to check out how they are developing their study skills and can make necessary adjustments. Another crucial purpose of assessment is to enhance student engagement. Though deep learning often does not require validation through assessment, it has been shown that students more often than not engage in learning when preparing for their assessment [10]. The assessment also serves as a means of self-introspection and development for the academic. Significant gaps in student achievement often reflect on deficiencies in learning that has happened, and sometimes point toward inefficient teaching practice. Through assessment outcomes, instructors can reflect on their teaching and make necessary adjustments [11]. At an institutional level, assessment outcomes have their role to play. Educational institutions need to provide funding bodies and quality assurance agencies with data about student achievement and progression, and as such assessments need to be able to generate meaningful statistical information for the quality ombudsmen and league-table editor [12].

**Different forms and types of assessment**

There are broadly two forms of assessment that are prevalent in higher education. The first, 'summative assessment', is often implemented at the end of a course or module, or through continuous coursework contributions, and its main function is to measure or 'sum up' student learning through evidence of achievement. Summative assessment is precise and is fundamentally designed to align with intended learning outcomes [13]. Though summative assessment often provides useful information about patterns of student achievement, it fails to provide students with an opportunity to reflect on and demonstrate growth in identified areas for improvement [14]. It is, however, worth noting that carefully designed summative assessment can be integral to student development if implemented wisely. One of the primary purposes of summative assessment is to summarise the achievement status of a student and is
designed for validation, rather than as a tool for encouraging deep learning. Since it directly contributes to the final grade obtained at the end of a semester or year of study, summative assessment is often high stakes for students. The second, ‘formative assessment’, is normally used for continuous evaluation of student learning. Formative assessment can either be conducted informally in-class or can be included formally as part of module coursework. Formative assessment does not count towards module marks or grades. The most essential element of formative assessment is quality feedback, where instructors help students to “understand their strengths and weaknesses and to reflect on how they need to improve throughout their remaining studies” [15]. More importantly, formative assessment can be used as a practice session for subsequent summative tests. They help to condition students with assessment criteria and provide critical feedback which is valuable for student learning. Formative assessment can also encourage and support students to reflect on their learning. Thus, it often becomes an inclusive approach to assessment, particularly when the assessment format is new or unfamiliar. It minimises students’ anxiety and helps develop their skills to tackle a variety of assessment needs [16]. It is, however, important to recognise that when we talk about summative or formative assessment, they demonstrate the purpose of assessment and not the method [17]. Varied methods of assessment could be used for both summative and formative purposes and are often dependent on how the instructor would design a particular assessment [18].

In some nomenclature, summative and formative assessment are classed under types of assessment, but we deliberately chose to categorise them under forms of assessment which is more aligned to its core function or purpose, than the methodology used for execution. Assessments can be as varied as a diagnostic assessment to authentic assessment, and in between, we have a norm-referenced and criterion-referenced assessment. Diagnostic assessment only assesses student’s strengths, weaknesses and prior knowledge before instruction. It produces a baseline for the instructor to work from. Two major approaches are (a) deficit assessment, which identifies the weakness of the student, and (b) error analysis, which highlights the kind of errors the student commits. However, such assessments are often light touch low-stakes tasks and exclude any critical thinking or focused engagement from the student [19]. Authentic assessment on the other hand allows students to
demonstrate their learning through real-life scenarios. Examples include conducting research, case studies, essay writing etc where students are required to be “effective performers with acquired knowledge” as opposed to ‘one-answer’ conventional tests [20]. The norm-referenced assessment compares a student’s performance against a pre-defined cohort of students. Whenever an assessment or test gives a percentile rank, it is norm-referenced e.g., SAT, IQ tests. However, such assessment does not always measure achievement of intended learning outcomes and can often pit one student against another. High scoring students are allowed to displace others below them who may then receive lower grades. On the other hand, criterion-referenced assessment measures students’ skills and knowledge against a set standard, learning goal, or other criteria. In criterion-referenced tests, the performance of other students does not affect a student’s score [21].

During the COVID-19 pandemic, the best methods for delivering assessments and feedback have been highly debated, especially in medical education. For example, the assessment of clinical competence of pharmacy students is normally judged objectively and reproducibly using the Objective Structured Clinical Examination (OSCE) [22]. However, this has been very challenging due to practical reasons such as travel restrictions and social distancing [23]. This situation gave the impetus for instructors to switch from oral OSCE based assessments to virtual platforms. In the case of OSCE, there were multiple levels of assessments for instance with pharmacy students, simulated patients and assessors being coordinated on a virtual setting. The assumption for the instructors has been that using a virtual platform would be useful and informative in preparing the students towards the essential clinical skills needed for practice [24]. Using virtual-based practice OSCE turned out to be a successful method to assess Pharmacy students for their clinical competencies and in terms of achieving the learning outcomes. The first notable impact was reduction in mental stress that is often associated with in-person OSCEs [25,26]. OSCEs traditionally are high-stake assessments where students get one chance to provide evidence towards their clinical competencies acquired during the pharmacy course. The viva voce style of assessment invokes unnecessary mental stress and an acute fear of failure amongst students [27]. Moving the entire exercise online with simulated case studies and formative assessment bypassed those challenges effectively. Nevertheless, recent studies show that there is a need for the constant development of patient-
centred counselling techniques and the gathering of further evidence from a wider range of studies regarding different healthcare settings is hence imperative. This is important as it addresses any of the limitations that had been observed using virtual formats for summative OSCEs [24,28].

**Effect on students’ mental wellbeing**

Assessment and feedback have a profound effect not only on students' learning but also on their health and well-being. Growing concern around student well-being is a major talking point in higher education [29]. As evidence suggests, 29% of students suffer from clinical levels of distress [30]. Students’ mental health is often affected by their learning environment, and conversely, their state of mind dictates the overall learning experience [31]. Keeping these facts in mind, there is now a renewed emphasis on adopting a holistic approach towards fostering the wellbeing of the entire university community [32]. The effect of assessment practices on student wellbeing, be it mental health or physical and social wellbeing, is an area of growing research [33,34]. Over the last decade or so, some hard evidence has emerged as to how different forms of assessment and feedback affect student experience and their general wellbeing during their time at university in the UK. Historically there has always been a disparity between how challenging the instructor wants the learning process to be, and consequently the assessment criteria fitting into that 'idealism' model, and the student’s ever-increasing fear of failure [35]. Students acknowledge the value of the challenges and tend to normalise some of the stress and anxiety that comes along with that. However, the consensus is that students often feel high-stakes assessment practices threaten their wellbeing through fear of failure [36]. Students have highlighted that this overbearing sense of pressure can make them disengage from their learning experience at the university. Scenarios, where students set a very high bar for themselves, can lead to unwanted competition-driven anxiety, and numeric result gradations over binary ‘pass or fail’ in criterion-referenced assessments only exacerbate that process [37,38]. Another conflict that we often come across in higher education is between traditional and novel assessment. Traditional in-class examinations like any other assessment still invoke fear and anxiety particularly on the day of the exam. But students prefer them to unknown newer methods of assessment because over the years they have mastered the art of 'doing an exam'
On the upside, research shows that students have begun to favour variety and flexibility with assessment choices as opposed to conventional in-class exams throughout their primary and secondary education. Qualitative responses from a recent study show that 44.8% of students (total 91 respondents) thought that a flexible assessment regime has allowed them to scaffold their learning throughout the semester, encouraged critical thinking and most importantly reduced mental stress [40]. The assessment also involves social anxiety in students with special learning needs. It happens primarily with a collaborative assessment where students work in a team or pre-assigned group towards the successful completion of an assigned task. Although staff acknowledges some benefits of collaborative work mainly towards developing key employability skills [41], students with inherent anxiety issues find them challenging. For students who have learning difficulties or mental health issues, managing the dynamics of group work is often stress-inducing since it poses the extra hurdle of social interaction [42]. Under the Equality Act 2010, universities have a legal duty to make ‘reasonable adjustments’ for students with learning difficulties [43]. Ideally, these adjustments should be configured into the designing of the assignment to make it as inclusive as possible and not applied as an ad hoc. Adjustments should enable students with mental health issues to fully demonstrate their academic ability or else they have the potential to create stigma or perceptions of unfairness amongst the student communities [44,45]. It’s not just the assessment that invokes anxiety in students, the feedback that follows often has a profound impact. However, there is no question that feedback on assessments is a valuable formative tool for student learning [46]. Staff in higher education often appreciate the need for giving feedback, which is timely, constructive, clear and sufficiently detailed thus helping students to understand their work better and learn from their mistakes. However, research shows that a student’s achievement outcome, relative to their preconceived expectation level, often determine their emotional reaction and subsequent feedback utilisation - a concept called ‘emotional backwash’ [47]. For students who engage with feedback, there is always a tension between appreciating feedback as a learning and development tool and an underlying threat to mental health and wellbeing [48]. This stems from the fear of failure and being judged and can lead to a sense of disenchantment, where students become upset or defensive, affecting their future work or assignments [49].
Assessment and student motivation

Motivational theories like goal orientation theory [50] and self-determination theory [51] advocate the ideal learning scenario where educators strive to make their curricula enjoyable and/or interesting to optimally motivate students. Hence alignment between learning objectives and assessment tasks plays an important role in student’s motivation. If there is perfect alignment, all objectives are assessed in an equitable fashion [52]. However, there is often a certain degree of misalignment of the assessment with the cognitive processing aspects of the objectives [53]. Accordingly, students master certain learning objectives to pass certain assessments and thus a clear distinction arises between assessed and unassessed learning in higher education [54]. Since many students are focused on their assessment performance than on actual enjoyment in learning [55], the likelihood of performing well on assessments is higher when students concentrate their effort solely on the assessed learning, while the unassessed part of curriculum fails to motivate them enough [56]. As such, it is the educators’ responsibility to adapt the curricula and shape their students’ motivational context [57].

Radically overhauling and re-designing assessment and feedback in higher education is a time-consuming and daunting task. There is no ‘one size fits all’ solution to mitigate the overarching issues of student wellbeing stemming from assessments. However, having a clear idea of the discord between what assessment is meant to achieve, and how it affects student wellbeing should provide us with enough insights as to how and more importantly why we should start to reform our assessment practice in higher education.
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