The benefits and challenges of peer and self assessment in a formative and summative context Literature review
Hazera Ali (LEaD Intern)

Abstract

This literature review aims to explore peer and self-assessment method as an alternative form of assessment practice. Both methods can supplement learning by encouraging students to engage with assessment criteria and actively seek to fulfil learning objectives. This paper will begin by concentrating on peer-assessment, outlining its purpose and aims, the benefits and challenges it holds as well as how it can be developed to maximise its effectivity. Thereafter, self-assessment will be explored with a focus on what it is, how it can be used to enhance professional skills, the benefits and drawbacks of self-review and grading and how it can be improved in general.

Introduction

Peer assessment is students assessing their peers against assessment criteria. This can either be carried out in a summative or formative context. In general formative peer assessment is preferred as it is a good opportunity to deliver and receive feedback, without any issues over validity or reliability. However, monitoring each other to determine whether certain criteria and standards have been accomplished comes with its limitations such as

peer pressure to mark well, which will be explored in this paper. In conjunction to peer assessment, peer feedback is used as a method of communication that encourages constructive dialogue between peers about performance, to help improve the quality of one another work.

Self-assessment is students reviewing their own work to determine their own strengths, weaknesses and areas of improvement. This independent judgment making can help students to progress in a programme, and later on in life. This paper will discuss how encouraging self-awareness develops autonomous learning skills that can help students transition more easily into professional life (Taylor, 2014).

What is peer assessment

Peer assessment is students judging the work of their peers (Falchikov and Goldfinch, 2000) and providing feedback orally or in writing which may be focused on general aspects or include grading them against assessment criteria (Liua and Carless, 2006). The principle of peer assessment is to encourage active learning, which can lead to greater retention of learning and thus deeper understanding. Orsmond et al (2000) stipulates various methods of arranging

peer assessment including written reports, group projects and oral presentations. Although peer assessment may not be appropriate for all types of assignments or programmes, when it is utilised, it can aid reflective learning. Peer assessment has pedagogical benefits that coincide with assessment for learning, by enabling students to identify their strengths and weaknesses when actively participating in tasks. As a result, peer assessment stimulates the development of higher cognitive skills (Bouzidi and Jaillet, 2009) whilst strengthening team building skills through collaboration.

Good peer assessment should be accompanied by good peer feedback, which can be as effective, if not more, than tutor feedback. Good quality feedback should be constructive and highlight what students have done well, what they have not done well and how they can improve. Lu and Law (2012) suggest that providing feedback is more productive than simply assigning grades to students as it means they have concrete comments that they can use to develop their work.

Peer assessment and feedback can develop personal skills of being able to give and accept criticism objectively. Bose and Rengel (2009) highlight that students put themselves in the role of an assessor, which can open up their perspective when critiquing their own work, thus they become more aware of how their work could be improved to match the assessment criteria. Additionally, they suggest that student feedback is beneficial as the language used is a more accessible format of communication in comparison to tutor's feedback which can be challenging to decode.

Challenges and benefits of the peer assessment method

This section addresses difficulties surrounding validity and reliability, time management, and practical experience with the peer assessment process. There is also exploration of the advantages of working collaboratively, such as developing deeper learning, becoming a continuous learner and saving marking or feedback time.

Benefits

Peer assessment has substantial benefits such as promoting lifelong learning as students become captivated in the process of learning, which increases engagement and dialogue. An increase in collaborative dialogue means that students are able to understand what the role of an assessor and assessee require, which they can their implement into their own work as autonomous learners (Ballantyne et al, 2002). Additionally, the cognitively demanding task of peer assessment is a result of having to make students use their knowledge and skills to review and critique the work of others. Whilst this is a demanding practice, new skills are developed such as time management, communication, and negotiation skills. Kaufman and Schunn (2011) therefore suggest that peer assessment can raise student confidence over time as they accumulate new skills and talents. Vickerman's (2009) supports this view, as confidence can be seen to increase when students begin to understand and appreciate the complexities of assessment practice. Therefore, although peer assessment can be socially uncomfortable for some students, it can still be a useful method of improving the quality of students work and encourage autonomous learning. To incentivise students, they could be rewarded for accuracy in grading work that is similar to a tutors marks (Sadler and Good, 2006).

A key advantage to implementing peer assessment and feedback is that a greater amount of support can be given to students throughout the programme. Peer feedback can be offered immediately after assessment takes place, allowing it to be more impactful and memorable. Students can benefit from a range of comments that are immediate and easily understandable as opposed to tutor comments which are filled with academic jargon and take a while to be relayed. However, Ballantyne et al (2002) argues that although peer assessment should help speed up the assessment process, in reality, time management is devalued

through the additional time needed to organise the administrative aspects of the assessment process. Aspects such as organising peer sessions, teaching students about assessment criteria and how to peer assess, as well as monitoring the assessments to ensure fairness can undermine the objective of saving staff time. On the other hand, as the practice becomes more common, gradually less time will be spent on training and monitoring, as peer assessment will be a familiar format to both students and staff.

Furthermore, peer assessment allows students the opportunity to work within a team, and form team building skills (Miao and Koper, 2007). Feeding back to one another develops student's analytical abilities. In order for this to be effective, students should be placed in well balanced groups. If students are placed in groups where all the students are high achievers, or just low achievers the group may face difficulties in collaborating (Lan, 2011). Students will be better suited where they can learn from a range of abilities as this encourages interaction and deeper learning. Weaker students in Tseng and Tsai's (2010) study show lower self-efficacy in reviewing peer's work and receiving feedback. They argue that stronger self-efficacy means more motivation to engage in the peer assessment process, therefore a balance of abilities is required to ensure the best possible outcome from peer assessing. Mo Ching Mok et al (2006) strengthens this argument of self-efficacy by reiterating that the feedback from peers informs learners about themselves, developing greater awareness of their own thinking and learning patterns.

Lu and Law (2012) have produced research from undergraduates that show that although peer grading is difficult, the benefits outweigh the challenges if effective learning takes place. From this it can be seen that by clarifying to students what they can gain out of participating, and by incorporating peer assessment in a summative method, students may begin to recognise the opportunities for cognitive development, greater interpersonal skills,

critical thinking and continuous learning. Increasing awareness of peer assessment, and how to accurately mark will result in greater accuracy, validity and reliability.

Challenges

As the use of assessment methods are increasing in diversity, peer assessment has become increasingly popular as a form of formative assessment and feedback. However, there is potential for peer feedback to be summative if students are providing grades to one another (Li, Liu and Steckelberg, 2010). It is arguable that a formative method is preferred when implementing peer assessment, as there are issues surrounding validity and reliability when students award one another grades. A further rationale for reluctant implementation of summative peer assessment may be that academics are unwilling to diversify assessment practices and incorporate innovative methods as they are more focused on ensuring formal procedures of accountability are accounted for (Orsmond et al, 2000).

Bouzidi and Jaillet (2009) argue that validity is demonstrated when similar marks are attributed by both peers and tutors. Students often lack familiarity with the assessment criteria therefore their results are less valid in comparison to a tutors' marks, who have a deeper understanding of the learning outcomes and criteria. Little experience with the process of peer assessment coupled with a lack of understanding in how to utilise assessment criteria is a plausible justification for why peer assessment has struggled to be used. Vickerman's (2009) study demonstrates that students find it easier to tackle technical aspects as opposed to subject content. This reflects that greater guidance is needed to show students how to apply assessment criteria. Vickerman (2009) continues to suggest that although the process is challenging for students, the purpose of peer assessment is to demonstrate how making mistakes is an opportunity to improve, particularly in a summative setting, rather than just simply a failure.

However, it can be argued that continuous practice and independent study can develop a deeper understanding of learning outcomes. Practice leads to the assessment criteria being internalised by students, thus being successfully applied when peer assessing. (Orsmond et al, 2000). Van Der Pola (2008) also explains that feedback is effective both when it is provided and when it is received. This is because students become accustomed to applying the assessment criteria, and feel motivated when they receive good quality feedback as it means the time they have invested in providing feedback is returned.

Studies suggest that students have a tendency to both under-mark or over-mark their peers, which can result in a lack of accuracy. Brindley and Scoffield (1998), assert that students often have a personal bias towards favouring their friends, particularly to maintain friendship groups and through the worry of being marked down themselves if they mark others down. Falchikov (1995) further reinforces the idea that students dislike awarding grades because of social reasons such as causing disruption amongst friends, particularly in smaller groups. These findings reflect how students are sometimes placed in a difficult situation to produce fair marks towards their peers due to social reasons as well as lack of understanding of the assessment criteria.

Development of peer assessment and feedback

By using peer assessment online, this could open up opportunities for learning and reflection, particularly if the format is anonymised (Lu and Law, 2012). An anonymised peer feedback and assessment system means that there is greater focus on producing high quality work as opposed to falling into social pressures of dishonest assessment to maintain relationships (Cheng et al, 2015). This will force a decrease in bias, and therefore strengthen reliability and validity of peer assessment (Chena and Tsaib, 2009). On the other hand, Yu and Wu (2011, pp. 8) insinuates under the theory of deindividuation that anonymity leads to a "loss of sense of self

awareness and individual accountability". Although this is possible, this weakness would outweigh the potential for increasing validity and reliability through anonymity.

Additionally, Wen and Tsai (2006) suggest that there is a need for guidelines and rules to assist students on how to provide feedback, as increasing clarity will improve the quality of work. Without training students on how to provide effective feedback, it is unlikely that well thought through criticism will be produced. Students are likely to include generalised or vague comments without training, which can be unhelpful as they do not highlight mistakes nor direct students on how their work can be improved. If feedback that is less meaningful is produced, the main aim of peer assessment i.e developing deeper learning strategies and encouraging lifelong learning, will not be fulfilled.

Self assessment

Boud (1999) outlines that self-assessment is where students establish what criteria is required to produce a good piece of work, and how to apply them to their own work.

Self-assessment is similar to peer assessment as it encourages reflection and higher order thinking (Topping, 2009). Self-assessment involves being honest and critical of one's own work, to develop the skill of self-reflection. Nulty (2011) explains that by using peer assessment to inform others, self-assessment builds on this further by developing the ability to inform oneself about the application of standards and assessment criteria. Fallows and Chandramohan (2001) suggest that an internal perspective is often different from an external perspective, which can shape and develop personal learning. Boud's (1990) view is that self-assessment is fundamental to every aspect of learning as it is only the learner whom can implement any decisions about their own learning. Nulty (2011) also clarifies Boud by specifying that self-assessment is where students evaluate their work, and from that adjust their future behaviours.

Falchikov and Boud (1989) have argued that self-assessment is an explicit way of achieving learning comes and objectives. Students are able to consider the effort they have put into a task, which often a lecturer does not see or take into consideration (McDowell, 1995). However, this poses an issue of inaccurate grading which creates uncertainty in the validity of the self-assessment process. The pressure on students to perform well may tempt students to provide themselves with higher marks when self-assessing in order to gain a positive result at the end (Stanton, 1978). Arguably grade inflation demonstrates that students are lacking the skills required to set personal goals for learning, which is something tutors would need to set more guidance on (Starling, 2013).

Furthermore, being critical of one's self is a difficult task. This can result in misapplication or neglecting some aspects of the assessment criteria (Gavin et al, 2015). It is possible that this is done intentionally as Vickerman's (2009) study suggests that students are reluctant to show that they are rewarding themselves too easily, thus mark themselves harshly. Comparatively, peer assessment may be more advantageous as multiple readers can detect more problems that may have been missed. Whereas self-assessment can result in some aspects of work not being commented on, particularly grammar and spelling. (Cho and MacArthur, 2010). Additionally, participation issues may also arise if self-assessment is kept as a formative method of assessment, to minimise issues of validity and reliability. Students often struggle to be motivated by assessments that are not marked by tutors, and see a lack of value in assessments that are not weighted for formal purposes (Boud, 1989).

On the reverse side it can be said that self-grading is a good way to maintain the privacy of grades (Sadler and Good, 2006), whereas with peer assessments other students see the mark. This could encourage some students to be more open and honest when reviewing their work, particularly because they (and potentially their tutor) are the only people accessing their work. Moreover, if self-assessment is carried out in a formative format, students will be more likely to focus on reflecting on their work as to develop and enhance this. Andrade and Valtcheva (2009) suggest that this could mean reflections are used to improve their revision for later summative assignments. The more involved the student is with the task, the more likely they are to develop a better understanding of what counts as good quality work. Creating a sound understanding of the assessment criteria is beneficial for both tutors and students as it ensures that learning objectives are being considered, understood and met. Andrade and Valtcheva's (2009) study reports that if students are aware of what the tutor expectations are, they are more likely to self-assess.

A core benefit to self-assessment is that it generates transferable skills of self-awareness and self-management which can be invaluable tools in the professional work space. Applying this skill to a professional setting, means being able to identify one's own capabilities and apply those strengths whilst working (Freeman and McKenzie, 2002). Similarly, being able to identify one's own weaknesses ensures that these can be improved. Lew et al (2010) stipulates that self-assessment can result in more responsible learners who have better problem-solving skills, which is yet another proficiency that can be carried through to the working world.

How to improve self-assessment

Through removing self-grading, students would be able to focus more on the quality of their work (Andrade and Du, 2007). This ensures that students are focusing on improving their work rather than on marking themselves a high grade, thus removing issues of truthfulness in self-assessing (Gavin et al, 2015). Andrade and Valtcheva (2009) support this through claiming greater self-regulation is achieved when students are more aware of the goals of a task. This demonstrates how the focus of self-assessment should be on understanding one's own learning strategies to achieve positive outcomes

rather than on marking or grading. Students who believe that they can complete a task are more likely to be engaged and motivated to establish goals and learning targets (McMillan and Hearn, 2008). Moreover, once self-assessment has been practiced over time students can better their evaluation techniques, which is a fundamental to self-regulated learning (Lew et al, 2010).

Overall, self-assessment is seen to be the core enabler of becoming an autonomous learner and develops metacognitive skills. Studies indicate that self-assessment is conducive to learning (Gibbs and Taylor, 2016). If students are informed about the benefits self-evaluation can bring to future learning, it is possible for better quality self-assessment to take place.

Conclusion

Peer assessment involves reviewing other student's assignments against assessment criteria and then provide constructive commentary as a review of the work. Peer feedback is the process of delivering constructive criticism from students to students, to highlight their competencies, and signpost their improvements. This initiates dialogue and discussion over assessment criteria, which can clarify ideas (McConnell, 2005) and stimulates a deeper understanding of subject knowledge. Additionally, collaborative tasks can develop communication skills and creates an understanding of how to work with other people, which is an essential skill for professional practice. Despite this, there are several limitations to the peer assessment process including lack of validity and reliability, grade bias and the time consuming training that is required to familiarise students with the process of peer assessment.

Self-assessment is a method of judging one's own assignments against the assessment criteria, and then using this to inform future work. Self-reflection can be beneficial in that students gain transferable skills that can be carried through to the work place. Despite this, self-assessment remains a challenging

task as it is often difficult to be critical or harsh towards one's own work, especially if students are unfamiliar with how to apply the assessment criteria. Additionally, self-assessment faces issues of validity as students are able to easily manipulate marks and comments in order to obtain the best grade possible.

Both peer and self-assessment encourage students to be active participants, whom take responsibility for their own learning, through reduced supervision. The overall consensus is that both methods of assessment support educational goals of helping students to become autonomous, lifelong learners.

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