Peer learning: Student-centered instructional strategy for the development of critical thinking and generic skills

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Abstract

Recently new demands are being placed on higher education providers, with an increased emphasis on student-centred pedagogy and developing a range of generic skills to assist employability, in addition to domain-specific outcomes. These requirements are fuelled by socio-economic and technological advances, as well as requirements from industry for generic and critical thinking skills. Yet, while there are calls from many quarters for the development of these skills in students, there is a shortage of Irish studies or theoretical models to assist providers in their development. For this reason, the paper examines peer learning as an engaging instructional strategy in Higher Education Institutions, to enhance both critical thinking and generic skills. It investigates student’s experiences and perceptions toward peer learning and how it influences learning outcomes; in particular the development of critical thinking and generic skills. The research applied a qualitative approach and conducted semi-structured interviews among third level students, at Shannon College of Hotel Management. Results from this study confirm that peer learning is an engaging instructional strategy that greatly enhances learning outcomes. A key finding is that peer learning appears to have a significant impact on the development of a range of critical thinking and generic skills. The findings further suggest a need to apply peer learning strategies for engagement and the development of these skills. It is proposed that the theoretical model presented as a culmination of the findings, should be utilised by providers of higher education, to develop these skills and to enhance learning outcomes from peer learning.

Keywords

Student-centered learning, engagement, peer learning, critical thinking, generic skills.
Introduction

This paper explores peer learning as a student-centered learning strategy and its influence on a range of learning outcomes, including critical thinking and generic skills. Recent studies have shown that significance is now being placed on various generic skills due to rapidly changing global economic, social and technological demands (ERSI, 2014; 2010; DES, 2011). The ramification of these changes is that it has intensified the need for critical thinking and problem-solving skills in graduates to aid employability (JCES, 2010; DES, 2013). In addition, significant increases in Ireland’s internationally traded services sector (EI, 2014) mean that graduates coming from Higher Education (HE) must possess communications skills and be capable of working in teams.

In regard to instructional strategies, traditional teaching methods are now being criticised for shallow learning outcomes (Mayes, 2012b) while research has shown a student-centred approach to teaching assists in engaging learners and can provide more than domain specific knowledge (Hilsdon, 2013, pp.1-11; Herrmann, 2013, pp. 175-187). To this end, peer learning is viewed as such a strategy (Falchikov, 2012). With this in mind, a central focus of this paper is exploring peer learning as an instructional model, for enhanced critical thinking and generic skills development, in higher education institutions.

Literature Review - Peer Learning in Higher Education

Peer learning is a form of student centred pedagogy that surpasses traditional methods of teaching and encourages deep engagement in learning (Mayes, 2012f). Peers have been seen by many as one of the greatest influences on undergraduate education and a catalyst for successful learning outcomes (Newcomb, in Falchikov, 2012, P.21). The term ‘‘peer learning’’ essentially refers to the practice of students learning both with and from one another, as fellow learners without having implicit authority to any one person (Galbraith & Winterbottom, 2011, pp.321-332). Although collaborative learning has been around for centuries in community activities, in recent years there has been emphasis on a more structured, systematic approach in the form of peer learning (Hilsdon, 2013, pp. 1-11; Falchikov, 2012, p7).
Over the past couple of decades, this term peer learning has greatly expanded to describe a variety of interaction between peers in the context of education. Peer-mentoring and peer-assisted programmes have come to the forefront in recent years. With peer-mentoring an experienced student becomes a peer mentor to a new student, in for example a new subject or new school (Parsloe and Wray, 2000). A similar concept is peer-assisted learning programmes (PAL), designed to foster support and collaborative learning between students in the same course, under the guidance of trained students, usually from a year above (Edwards and Bone, 2012; Parkinson, 2009, pp.381-392). It stems from Vygotsky’s social constructivist theory termed the “zone of proximate development” (ZDP). It can be described as the gap between the individual’s actual performance and their potential development which is determined by problem solving with support from either an adult or a more capable peer (Pritchard and Woollard, 2013).

Peer learning provides students with the opportunity to get more practice than traditional methods of learning; therefore it assists in deep learning and reinforcement of concepts. In addition, it allows students to take more responsibility for their own learning (Falchikov, 2012, p.241). Recent studies show that peer learning provides social and emotional support for learners (CASEL, 2008) and an opportunity for formative feedback through peer assessment. Yet studies emphasise that scaffolding the learner (assistance/input from the teacher) is an essential component for effective PL practices (Hilsdon, 2013, pp. 1-11).

**Influence of Peer Learning on Critical Thinking and Generic Skills**

Through detailed interaction with their peers, learners modify or accommodate their current understanding and develop their critical thinking skills (Falchikov, 2012, p.94). Moreover, the process of critical enquiry has led to incredible success in problem-based learning, where students discover principles through their own investigation (Mayes, 2012b). Nevertheless, recent studies in the medical profession highlight the fact that it is most effective when students are explicitly informed of its benefits and when peer-assessment practices were monitored by teachers (Hodgson et al., 2012, pp.10-30).
Current literature suggests a vast range of generic skills are developed through peer learning. This includes self-management skills, team-work, transferable skills, communication and enhanced self-esteem (see for example Hilsdon, 2013). It is also suggested that meta-cognition or simply put “thinking about thinking” which is associated with critical thinking, can also be enhanced through enhanced through a form of peer learning termed as cognitive apprentice i.e. assistance from a more competent peer (Falchikov, 2012, p.58). In addition, experiential learning with peers provides an opportunity for reflection thus uncovering tacit knowledge; a process where an expert’s skills and knowledge are seamlessly integrated into their performance through cognitive apprentice (Jordan et al., 2008, p.201-202). Moreover, when students reflect on their learning with other students, it can lead to transformative learning, which is when new perspectives are gained from experiences (Mayes, 2012d).

Educational Reforms and Policy
Recent educational reforms and policies are calling for explicit focus on critical thinking and generic skills to aid employability. The National Strategy for Higher Education to 2030 recommends changes to the existing system and highlights the need for generic skills (DES, 2011, pp. 56-57). This is corroborated by the Joint Committee on Educational Reform who have appealed for “generic and employability skills” and “critical thinking” to be embedded into the curriculum (JCES, 2010). However, a review of current policy reforms and documents highlight the fact that there are few mechanisms in place in higher education to cultivate these essential skills (see for example DES, 2011). Moreover, there is a need to find instructional strategies in HE that could assist in filling this gap.

Most recently, there has been a shift away from traditional didactic instruction to more student-centred approaches to learning, for example corrobative or peer learning (JCES, 2010). This has also facilitated a move away from terminal exams to more varied forms of instruction such as experiential learning (Jordan et al., 2008) and alternative assessment methods such as peer assessment (Race, 2010). Many of
the reforms and issues in Irish HEI’s are echoed in global reforms with countries such as Australia embedding critical thinking and generic skills into their national framework of qualification with great success (AQF, 2010).

➢ Social Constructivism

While peer learning promotes learning outcomes that are not easily achieved through other learning strategies (Hilsdon, 2013, pp. 1-11; Mayes, 2012b) some authors have highlighted the danger in new instructional strategies that are introduced without detailed research and theory (Falchikov, 2012). It is for this reason that the paper draws on social constructivism as a framework to inform this study since Falchikov (2012, pp. 92-97) argues that it can “illuminate many aspects of peer-assisted learning”. Furthermore it is associated with critical thinking and various generic skills (Pritchard and Woollard, 2013, p.45).

The characteristics of social constructivist pedagogy include scaffolding the learner, the zone of proximate development management and error correction by the teacher (Pritchard and Woollard, 2013). In addition to cognitive apprenticeship (assistance from a more capable peer), social learning (i.e. peer learning), constructive conversation and modelling (Falchikov, 2012; Pritchard and Woollard, 2013). Theories on social constructivism show that strategies used in peer learning should focus on the social construction of knowledge, critical enquiry, reflection and a constructivist teacher (Pritchard and Woollard, 2013).

Research Design and Methods

This study design applied qualitative methodology, conducting ten semi-structured interviews which was the primary method of data collection. The philosophical approach applied was derived from the interpretivist paradigm. It was adapted in the belief that it provided personal insight into student’s perception of peer learning where the use of a scientific method using statistics or numerical data could not (Bryman, 2008, pp. 3-18). In support of this, interpretivism holds the viewpoint that human behaviour is affected by interaction in the social world and that people
construct meaning though their interpretation of experiences or events (Wisker, 2008, p.69).

A specific sample population type was required for this study. The participants needed to be adult learners, enrolled in a degree program and currently engaged in peer learning at Shannon College of Hotel Management. Due to these very specific requirements, non-probability sampling was deemed to be the most suitable procedure. This form of sampling targets a particular participant and implies that certain people are more likely to be selected than others (Bryman, 2008, p. 541). Since it was essential that candidates selected had experience with peer learning in Higher Education, Shannon College of Hotel Management was deemed an appropriate college in which to conduct this study as all participants selected met this criterion.

The interview sample group consisted of students aged from 18 to 25 years old, consisting of 4 males and 6 females, 6 of whom were Irish nationals and 4 being international students. There was a mix of culture, age and gender which was deemed to be beneficial to the study, in that it was not bias and represented the viewpoints of a varied group. The use of semi-structured questions allowed a degree of flexibility to probe further where required (Saladana, 2012). Questions were designed to give students the opportunity to express their feelings on peer learning and how they felt it influenced learning outcomes. After the interviews with participants, an examination of the data collected was carried out through thematic analysis (Guest, 2012, p.11). The analysis focused on examining, identifying and recording themes or patterns within the data set (Guest, 2012). Through this analysis of themes in the data, patterns on how peer learning influenced various learning outcomes in addition to critical thinking and generic skills emerged.

Findings and Discussion

- **Engagement and Student-Centered Learning:**
  Initially the study set out to explore student perceptions of peer learning to see if they felt it assisted their learning. This was of particular interest to the study, as if it were to be further utilised as a means to enhance critical thinking and generic skills then to begin with students would have to feel it was a catalyst for successful learning outcomes. The conclusion drawn was that PL was viewed by students to be a more
An engaging form of pedagogy that transcends traditional lecturers and is consistent with recent literature (Herrmann, 2013; Hilsdon, 2013). This is shown in comments such as: “it is different than learning with a lecturer because you are listening to someone your own age, studying the same course as you, so you can like chat and like learn things so I prefer working with other students” (Respondent No. 2) and “it is easier to ask questions to your peers rather than ask your teacher” (Respondent No. 4). It could be seen that active participation in the social environment led to the construction of meaning and learning. This corroborates with Piagetian and Vygotsky theories on social constructivism (Prichard and Woollard, 2013). Through this process deep learning and deep engagement occurred, moreover it appeared to crystallise learning: “it affected my learning as well because I recapped what the problem was… and keep it in my mind and never forgot it” (Respondent No. 2). Students felt they could more openly communicate their knowledge to peers, allowing learners to articulate their understanding of concepts and is in support of the finding of Ray and Ray (2012). On this note it was viewed as a social and emotional support to learners. However the analysis seemed to show that this was only true if activities were monitored to ensure equitable outcomes for all parties involved which was also observed by Falchikov (2013).

From the analysis of current literature and schools of thought on pedagogical practices it is suggested that educators should adapt peer learning as a student-centred approach to learning (Hilsdon, 2013; Macualay and Nagley, 2008). Nevertheless, it seemed apparent from the analysis that the salient point for successful outcomes from peer learning is that instructional strategies needed tutor support and scaffolding if conflict or difficulties were to be avoided: “if the lecturer picked who would be compatible together I think it would be better” (Respondent No. 3). This confirms a core element of Vgotskian’s social constructivist theory (Prichard and Woollard, 2013). The findings revealed that tutor feedback seemed to ensure that incorrect or inefficient methods would not be passed on to another student. Along the same lines was the management of activities within the “zone of proximate development” (Prichard and Woollard, 2013). It was from this analysis that it was realised that there appeared to be a lack of structured PL practices in place at Shannon College of Hotel Management. This valuable finding was essential to the development of the
theoretical model proposed in this paper. The model presents a number of tutor support and scaffolding strategies which could be utilised in higher education institutions.

- **Critical Thinking Skills Development**

A considerable finding was that there was a strong link between PL and problem solving skills: *we were solving problems in only a few minutes*’ (Respondent No.6). The results showed it also benefited reasoning, judgement and decision making: ‘’I would think you do it this way, then someone would show you how to do it easier and better, and you’re like oh yes, and that would make sense to you’’ (Respondent No. 7). It was deducted from the findings and current literature that this was due to the process of critical enquiry through peer learning. This is where learners modify their current understanding to achieve new understanding (Prichard and Woollard, 2013, pp.10-14). Another key finding was that there appeared to be a connection between PL and transformative learning. The results from both the findings and Mezirow’s theory (Jordan et al., 2008) are that this is a result of constructive conversation between peers which leads to reflection in the learners. Furthermore, PL also seemed to have an effect on meta-cognition [regulating one’s own thought process] which Falchikov (2012, p.58) holds is associated with critical thinking. It was the implications of this finding that led to the inclusion of peer tutoring programmes in the model which have also been shown by Brown et al.,(Falcikov, 2012, p.58) to be highly effective in this area.

Another relevant finding associated with critical thinking was the influence of PL on critical consciousness. It could be seen that critically reflecting on leaning through PL had an influence on critical consciousness: ‘’it can enlighten you into a different perspective as well’’ (Respondent No.1). The value of this is that students could possibly gain a better understanding of the world and develop better tolerance for others though critically reflecting on their learning. It is for this reason that the model presented from the study has suggested that opportunities should be provided for reflection through constructive conversation. Overall the body of findings on the topic of critical thinking development through PL can be seen as significant and presents a
real opportunity for the use of PL to enhance these skills. Particularly in light of the shortage of Irish studies available to providers in HE on this topic.

**Generic Skills Development**

Conclusions drawn from the findings and recent literature (see for example Hilsdon, 2013; Falchikov, 2012) provided considerable support for PL benefiting communication, negotiation, team-work, co-operation and transferable skills: ‘It teaches us how to work as a team in a positive way to help benefit each other’ (Respondent No.3) and ‘you see it their way and then you see it my way and then you kind of come to a compromise’ (Respondent No.5). This key finding from the study led to the inclusion of programmes and instructional strategies within the model to enhance these skills. On this note, it was observed that Shannon College is not making full use of technology and that collaborative platforms could enhance generic skills development. This corresponds with Laurilard’s (2008) recommendations for the use of educational platforms such as Blackboard or Moodle for example.

Another generic skill that was seen to be enhanced through PL was self-regulation and self-management skills: ‘when you are helping the weaker student you really come to the forefront and take charge of the situation’ (Respondent No.5). Since it is important to equip students with these skills for the workplace, it was suggested that programmes such as peer mentoring or peer assisted learning should be implemented since they have been shown by Falchikov (2012) to be effective in this regard. Yet, it was noted that training would need to be provided for students on these programmes. Findings also showed that ethnic and cultural understanding benefited from PL which is highly relevant in light of the increasing international mobility of students (AFQ, 2010). Another significant finding was that experiential learning with peers benefited students understanding of concepts and appeared to result in tacit learning through practice with a more competent peer.
The findings and literature have culminated in the presentation of a theoretical model for peer learning and displays instructional strategies that could be utilised to enhance learning outcomes from PL. It is designed as an informative guideline for use by educational providers engaged in Higher Education. It is argued from the analysis of findings that when these programmes are effectively supported and scaffolded by educators, the effect is a range of hugely beneficial outcomes from peer learning which includes the development of critical thinking and generic skills.

Fig. 1 Theoretical Model for Peer Learning and the Development of Critical Thinking and Generic Skills

Conclusion and Future Work
It would appear that peer learning as an instructional strategy has the potential to make a substantial contribution to learning outcomes and to the development of critical thinking and generic skills, in Irish Higher Education Institutions. Perhaps most importantly, the theoretical model presented in this paper displays educational strategies and a pragmatic solution for enhanced outcomes from peer learning which can be utilised by providers of higher education. Moreover, it provides a framework and structured programmes for the development of these skills. It is supported by the study results and corroborated by much current literature and theory. What is essential to the success of the instructional strategies suggested for application in the model is tutor support and scaffolding. In addition, providers should educate students in the use of these programmes. While outside the scope of this research, it is noted that the next crucial piece of research needed in this area is a means to assess learning outcomes for critical thinking and generic skills through peer learning, such as a rubric or taxonomy for the assessment of these skills. It should be remembered that the model presented in this paper is not intended as an all or nothing approach, rather it can be viewed as a flexible tool where educational providers select and make decisions on programmes or activities to adapt, based on desired outcomes from peer learning.

➢ **Key recommendations:**

a. The model presented should be utilised for student-centred pedagogy and to encourage a range of positive outcomes which are: deep engagement, deep learning, social and emotional support, self-directed learning, formative feedback, reinforcement, and self-confidence.

b. The model presented should be utilised as a strategy to develop critical thinking skills in the following areas: problem solving, reasoning, judgment, greater understanding of concepts, transformational learning, meta-cognition and critical consciousness.

c. The theoretical model should be applied as a strategy to develop generic skills for employability in the following areas: self-regulation, transferable skills, communication, co-operation, team-work, negotiation, ethnic and cultural understanding, tacit learning.
d. Collaborative on-line platforms should be fully utilised as a means of developing both generic and critical thinking skills.
References


