The Role of Peer-learning techniques in enhancing and scaling Project-based Learning

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Abstract

In the domain of business education, conventional pedagogical approaches can prove inadequate in equipping students with the skills needed to tackle practical challenges. The speed of change means that education must keep pace with the job market and innovative educational frameworks are necessary to bridge the emerging gap. This original research reports on and analyses designs for an innovative 'virtuous learning cycle' in an MBA Extended Work Project (EWP) at a UK University. Gathering evidence from a mixed-method approach, this paper demonstrates the capacity to improve student engagement, enrich comprehension, and cultivate the very meta-skills in demand in today's workplace – notably those surrounding collaborative competencies. In evaluating the design, it champions the transformative potential of building this cycle through a purposeful amalgamation of project-based and peer-to-peer learning approaches.

Keywords: *Project-based learning, Peer-learning, MBA, Meta Skills.*

1. Introduction

Business education generally and MBA programmes, must remain current, developing the skills and competencies demanded by the changing professional workplace. Over many years now, several authors have warned that graduates lack the requisite job skills; that they are not 'job-ready' (Garcia-Alvarez et al., 2022; Bhatti et al., 2022). In the area of Business Administration this means a shift of focus from traditional, technical, business knowledge in favour of meta-skills, those high-end human abilities to think, create, problem solve and collaborate. These pressures are considerable and have consequently also meant an evolution of educational

techniques which de-emphasise didactic approaches and promote experiential learning experiences (Goulart et al., 2021; Barber, 2018).

The work outlined in this paper has been conducted amid these pressures. It describes and evaluates the extent to which integrating project-based learning with peer learning could transform the development of these meta-skills and competencies in MBA students preparing themselves for the workplace. Interestingly from a case study standpoint, this is a part of the programme which reported consistent overall student satisfaction meaning failure was not a driver of change. The catalyst was a form of horizon scanning supported by primary data collected by way of interviews with a range of business employers connected to the programme.

Reflecting the challenge, the MBA team set themselves, the research outlined here seeks to examine whether the integration of project-based and peer learning methodologies might improve the educational environment and perhaps cultivate students' meta-abilities to address difficult, transdisciplinary situations. It investigates if this strategy might enhance the scalability of project work for universities and corporations by facilitating more student involvement. The research assesses the prospective efficacy of this integrated approach in equipping students for professional settings that need flexibility, teamwork, and imaginative problem-solving abilities.

The central question of this study is to ask, to what extent does incorporating project-based learning and peer-to-peer interactions establish a beneficial learning cycle and prepare students for today's business environment? Consequently, this paper is organised by adopting theoretical and empirical approaches. Conceptually, it considers briefly the current understanding of Project-Based learning and Peer-learning before applying this understanding to a proposed learning design to be implemented in practice, evaluating the evidence generated through surveying students and businesses involved.

2. Literature review

Given the context and historic successes and potential of the MBA EWP, this section reviews the existing body of knowledge surrounding Project-based Learning and Peer Learning to identify conceptual crossovers supportive of the ambitions of the project. Project-based Learning is a pedagogical approach that involves students in the development of knowledge through the completion of significant projects and the creation of tangible goods (Brundiers & Wiek, 2013; Krajcik & Shin, 2014). Project-based learning is a teaching method in which students learn by actively engaging in real-world projects comprising real business and economic challenges resolved through a theory to practice style of learning. This approach aims to help students develop deep content knowledge as well as critical thinking, problem-solving, collaboration, creativity, and communication skills.

The latest research has surfaced benefits in improving student self-confidence (Safitri et al., 2024) and indeed developing these meta-cognitive skills (Wang et al., 2024). This experiential learning method not only improves practical skills but also enables the application of academic ideas in real-world contexts. It reflects workplace requirements, fostering time management and flexibility while enhancing motivation via concrete relevance.

This creation process necessitates collaborative efforts among learners to find solutions to challenges during knowledge integration, application, and construction. Instructors and community members, typically as facilitators, offer assistance and evaluation to enhance learners' educational experiences.

The approach that conceptually converges with PBL here is Peer Learning, a natural approach as old as humanity itself but which can be defined as "the acquisition of knowledge and skill through active helping and supporting among status equals or matched companions. It involves people from similar social groupings who are not professional teachers helping each other to learn and learning themselves by so doing" (Topping, 2007). This approach promotes learners to exchange views, provide comments, and assist one another's growth. Students acquire many views in collaborative settings, enhancing their capacity to express ideas while solidifying their comprehension via instruction. This approach cultivates leadership abilities and self-sufficiency by using collective knowledge. It appears to positively influence students' feelings of social isolation, enabling them to more effectively confront challenges within a secure and non-threatening educational environment (Christiansen & Bell, 2010).

Contemporary peer learning has progressed beyond the antiquated approach of using high-achieving students as surrogate educators. It currently emphasizes matching learners of comparable ability to foster reciprocal cognitive challenges. This method acknowledges that peer connections are fundamentally distinct from conventional teacher-student relationships. Encouraging "learning by teaching" benefits both participants, with the facilitator acting as a relevant role model. This transition optimizes cognitive benefits for all participants and cultivates a more interactive, cooperative educational atmosphere (Carvalo & Carlos, 2020).

The peer learning concept is a solution to mitigate challenges at universities and institutions, where the availability of preceptors and the quality of mentorship remain insufficient; furthermore, supervisors are not consistently present during clinical practice (Zhang & Bayley, 2019).

3. Methodology

Having briefly reviewed these two selected concepts; this study adopts an exploratory mixed method approach based on quantitative and qualitative analyses. The research refers to a project-based learning activity, developed by a London University as part of its MBA programme, to

assess the influence of the virtuous learning cycle on educational results. In the module, students are assigned to a real business case that a partner company has developed in collaboration with the teaching team and working in direct collaboration with the business partner, they must develop and present solutions to solve the issue. The students receive training at the beginning of the project and continuous support in the developing of the solution both by the university and the business partners. The digital tools utilized have been Moodle and Microsoft Teams.

The learning design, aligned to the learning outcome of the EWP module, includes two main data collecting strategies; a survey addressed to students enrolled in the MBA EWP program and semi-structured interviews with representatives from collaborating firms. This dual approach enables an extensive examination of viewpoints from both students and business domains.

The questionnaire aimed to assess students' opinions of the effectiveness of the project-based learning experience in fostering pragmatic abilities relevant to modern job requirements. The semi-structured interviews had two objectives: to analyze the effectiveness of project-based teaching methods and to evaluate the feasibility and possible advantages of integrating peer-learning strategies into the educational framework. Four semi structured interview were answered in January 2025 and 57 students fully answered the survey, relative to the 23/24 A/Y.

Semi-structured interviews are a widely used qualitative research method that combines predetermined open-ended questions with the flexibility to explore topics in greater depth (Lochmiller, 2021. Naeem et al., 2023). This approach allows researchers to guide the conversation while giving participants freedom to express their views and experiences (Qu & Dumay, 2011).

The data collected were transcribed and analysed using Leximancer software. Leximancer is an advanced text analytics software that employs machine learning techniques to conduct automated content analysis of qualitative data. It uses co-occurrence information to perform semantic and relational analyses of text corpora, identifying key concepts, themes, and their interrelationships (Biroscak et al., 2017).

Leximancer's thematic analysis capability is particularly noteworthy. The software automatically extracts main themes from the text and visually represents them in concept maps, providing researchers with a comprehensive overview of the data. These concept maps display themes as coloured circles, with the size and colour intensity indicating the theme's relative importance. Within these themes, Leximancer identifies, and groups related concepts, represented as smaller dots connected by lines to show their relationships (Gkevrou & Dimitrios, 2022).

4. Findings

The survey results indicated a degree of consensus on the programme's efficacy across essential parameters. Participants consistently reported that experiential learning activities markedly increased their acquisition of practical, industry-relevant abilities, indicating a heightened capacity to tackle real-world professional issues. Respondents emphasized faculty members' expertise in integrating theoretical frameworks with practical applications, especially acknowledging instructors' ability to interpret academic ideas within real-world commercial situations.

Participants saw quantifiable enhancements in problem-solving agility and collaborative cooperation skills, explicitly linking these advancements to the program's experiential approach. Respondents noted that the incorporation of peer-learning dynamics enhanced their adaptation to intricate professional settings, while confirming the program's efficacy in simulating genuine workplace requirements via its practice-oriented framework with an outstanding 100% satisfaction in knowledge development. The results confirm the programme's relevance to current business challenges, demonstrating its effectiveness in developing career-ready graduates via experiential and collaborative teaching methods. The total student satisfaction percentage for the EWP module for the 23/24 academic year was recorded at 93.7%.

The semi-structured interview methodology included seven main questions on the project experience, the student contributions to corporate goals, the participants' skills development, and the program's educational method. The interview also sought recommendations for project enhancements and assessed Peer-learning potential. This systematic methodology examined the program's industrial effect and the viability and potential benefits of peer-learning methodologies in education. The method was ideal for collecting rich, detailed qualitative data on participants' thoughts, feelings, and experiences (Kallio et al., 2016) and allowing for the exploration of emergent themes and unexpected responses through follow-up questions (Carruthers, 1990). This strategy was essential for getting detailed project perspectives from corporate representatives. The examination of comments about students' competencies used in the project indicated mostly favourable replies from host businesses (fig. 1).

Three key topics emerged from the analysis: The first is the Student-Focused Methodology; the host businesses exhibited recognition of the project's academic foundations and recognized their involvement in partnering with the university to enhance students' competencies. The second is Diversity as a Resource; the varied student population of the university was emphasized as a notable asset. One interviewee remarked: "When a diverse group of individuals from various regions of the world convene, they collaborate in groups, each contributing their own insights, (..) and they present particular ideas and solutions". Finally the Skill Development; the host organizations recognized students' current talents but noted that more training was essential for the efficient application of these competencies in a professional setting.

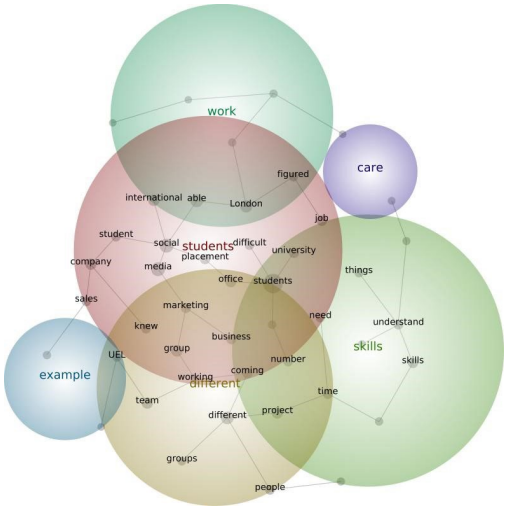

Figure 1. Thematic analysis: students owning skills. Source: our elaboration.

After this debate, the interview examined the prospective integration of Peer-learning with the conventional project-based approach (fig. 2).

The suggestion for peer-to-peer learning garnered fervent support. Host businesses envisioned this as learning via exemplification, with theme analysis suggesting it as a feasible and advisable improvement to the program. One commenter emphasized: "Indeed, the mentorship is exceptional." I would advocate including peer-to-peer learning for students from such background, since it enhances their learning speed more effectively than traditional instruction.

This response indicates that integrating Peer-learning may substantially improve the efficacy of the Project-based learning method, possibly expediting skill acquisition and information dissemination among students. One interviewee remarked: “The mentorship is fantastic. I think I would recommend having a student from there (the University) to build (the new student knowledge) because that will accelerate the way they learn, and peer-to-peer learning is faster than having somebody coming and teaching.”

The interview data also demonstrated a clear benefit of incorporating peer learning into project work: increased scalability. Respondents said that this method might allow for more student participation without increasing the burden on industry and university resources. Furthermore, respondents felt that peer-learning might possibly improve the learning experience for learners. Participants may benefit from varied viewpoints and collaborative problem-solving by drawing on their peers' expertise and experiences, improving their skill development and project results.

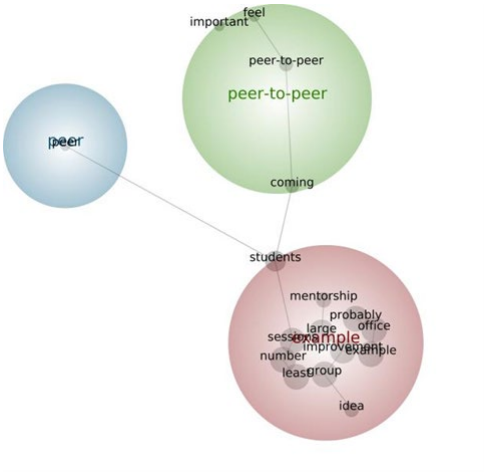

Figure 2. Thematic analysis: Peer-learning. Source: our elaboration

5. Conclusion

This paper lends weight to the significance of incorporating project-based learning and peer-to-peer interactions to establish a beneficial learning cycle and prepare students for today's business environment. Initial data suggest that the integration of project-based and peer-to-peer learning markedly could improve student engagement and satisfaction as well as develop the sought-after meta-skills. Peer learning could enhance project-based learning by promoting cooperation among participants. Especially in an MBA programme, where diverse backgrounds and experiences intersect, systematic peer-to-peer interactions has the potential to enhance the learning experience, allowing students to access fresh perspective on business challenges.

The MBA EWP case illustrates that this strategy has the potential to enhance educational outcomes and equip students with the meta-skills they need in professional life. Moreover, the scalability of the project-work learning integrated with the peer-learning is particularly valuable for expanding educational initiatives while maintaining efficiency.

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