

The Impact of Communities of Practice on Masters Dissertations: A Small Scale Case Study of MSc Project Management Students

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Abstract

Communities of Practice (CoPs) are known to increase knowledge sharing and personal development. In this pilot study in a UK higher education institution, we explored using CoPs with Postgraduate (Masters and PhD) students with a view to investigating the CoPs' impact on the Masters students' dissertation engagement and achievement.

We conducted action research, forming 4 CoPs, each including 1 PhD student and approximately 3 MSc students. We analysed the 11 MSc Project Management students' engagement, results and feedback and the 4 Project Management PhD researchers' feedback using mixed methods from questionnaires, feedback forums and quantitative analysis of dissertation results (marks). We found four categories of outcome: (i) MSc students' mode of communication with their CoP; (ii) MSc students' contribution to their CoP; (iii) benefits to MSc students; and (iv) impact on MSc dissertation results. Our outcomes show that the CoP had an impact on MSc student engagement and performance, and indicate CoPs as worthy of further investigation for enhancing students' learning experience.

Keywords: Community of Practice, Higher Education, Post Graduate students, Student Engagement, Student Performance

1.0 Introduction

The term 'Communities of Practice' (CoPs) has evolved over time, across various sectors, with Lave and Wenger (1991) defining CoPs as groups of people sharing goals, activities, and knowledge in the context of a given practice and Wenger et al (2002) extending this by stating that CoPs are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an on-going basis. CoPs are used to support social learning in EU funded projects (Wenger, 2009), organisational knowledge capture and knowledge management (Rivera and Carlos, 2011), and sustainable development enterprises (Bradbury and Middlemiss, 2014).

Somerville (2016) considers a CoP as a state of being in existence or togetherness, common attachment, belonging, ties or commitments; it is a distinct collection of people, who embrace and express their practice in communities. Increasingly, the concept of CoPs within education is suggested as a valuable and useful tool to support educational stakeholders in a collaborative and supportive environment (Kirschner and Lai, 2007). The Association for Project Management (APM) recognises the importance of the CoP by including it in their Body of Knowledge, 6th Edition, noting it assists in the dissemination of knowledge, motivates members, provides mutual support, allowing potentially isolated people to come together, and encouragement between members, and helps generate new knowledge (APM, 2017). Hence, the concept of Communities of Practice was considered to be a potentially useful tool to support our MSc Project Management students.

This study is the first stage of a longitudinal action research project, where the CoP concept was investigated through a teaching and learning project in the 2015-16 academic year, funded by the Centre of Learning Excellence (CLE) at the University of Bedfordshire Business School.

This study aims to investigate the impact of the CoPs on MSc Project Management students' dissertation experience by evaluating student engagement and results. This study begins by drawing on CoPs literature, identifying best practice for implementing CoPs and their strengths and limitations. This is followed by the research methodology and the research methods used. Next are the findings and finally, conclusions and suggested further studies.

2.1 Literature Review of Communities of Practice (CoPs) In Practice

Definition

The literature on CoPs spans the recent decades, with Lave and Wenger providing the early definitions and expounding them later. More recently, Yuan and Kim (2014) identify a CoP as providing access to up-to-date information, mentoring experience and the development of a symbiotic relationship between participants, based on a common goal. The definition sits well with the implementation in this study.

Implementing CoPs

Wenger et al's (2002) seven principles that successfully guide the cultivating of CoPs are:

- allow a CoP to evolve rather than imposing a rigid structure;
- invite information from outside the community into a dialogue, also supported by Probst & Borzillo (2008), and recognise different levels of participation;
- encourage one to one connections to build stronger relationships between individual members;
- build an easily accessed system of knowledge;
- combine familiarity, so members can seek candid advice and try out their prejudices without consequences, also supported by Probst & Borzillo's (2008) hierarchy free CoPs ;
- use excitement to maintain engagement ; and
- create an appropriate 'rhythm' of meetings/interactions for the community, which is not too overwhelming for members, nor so sluggish that interest is lost.

Probst & Borzillo (2008) highlighted 'Ten Commandments of CoP governance', which overlap with Wenger et al (2002), but also include:

- have a clear (strategic) objective for the CoP;
- get up a 'Governance Committee' to monitor the CoP activity;
- have a CoP leaders who are 'control agents' to steer the CoP to greater knowledge exchange and development of best practice; and
- highlight CoP achievements to members.

Many of these principles informed the CoP implementation in this study, with the VLE supporting the accessible system of knowledge, the APM providing information from outside the community and the PhD students providing a 'steer'.

Strengths and Limitations of CoPs

There are various benefits associated with CoPs. According to Lesser and Everest (2001), CoPs enable members to get a quick response to their needs and problems due to the expertise available within the community. A CoP allows expertise to be transferred across the community and encourages discussions of solutions to a range of problems (Wenger and Snyder, 2000). A CoP also creates room for innovation and encourages members to maximise opportunities because they understand the expertise within their community. The CoP is beneficial because students' individual goals overlap with the goals of the community in a way that meets most students' needs.

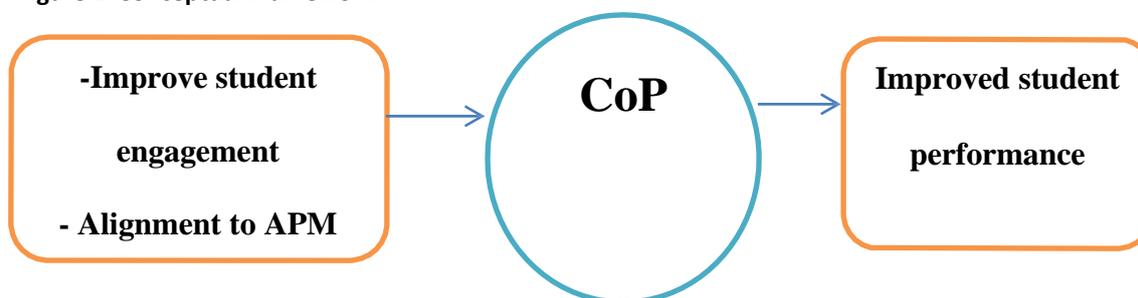
Scholars have highlighted a few issues with regards to CoPs, which include needing objectives with clear and measurable goals to encourage participation of members in the development and sharing of best practices (Bond & Lockee, 2014). They also emphasised the need for training and professional development of the members. Webber (2016) identified the need for CoPs to develop survival skills through self-sustaining and self organising techniques. This is an issue to re-visit later in the longitudinal study, to ensure sustainability.

Edmondson (1999) pointed out that there are trust and safety issues with CoPs. He highlighted in his study that lack of trust resulted in individual work with little collaboration, dissatisfaction, and team attrition. Also, Johnson (2001) added that the greatest problem with virtual communities is withdrawing, or attrition. Hence, student engagement is key to measure over our longitudinal study.

In summary, despite the challenges with CoPs in terms of trust and attrition, there are numerous advantages as indicated in the literature. These include: knowledge sharing, personal development

and access to other members with similar interests/objectives, which makes the CoP an interesting concept to explore in this study. Consequently, the conceptual framework (in Figure 1) indicates that the need to improve student engagement and align with the APM Body of Knowledge (BoK) motivated the need to explore CoPs as an approach to improve student performance.

Figure 1: Conceptual Framework



3.0 Research Design

An inductive approach to this study is taken, collecting relevant data, with a view to looking for patterns in the data, such that when sufficient data is available, we are working to develop a theory that could explain those patterns. This paper describes the first pilot stage of a longitudinal study that seeks to collect data over a period of 3 years. The empirical setting for this study is the University of Bedfordshire MSc Project Management course, involving 11 Masters students, with 4 PhD research students, each supporting a CoP.

McNiff (2013) identifies action research as when we intervene in our own practice with the aim of educational improvement. This study uses action research or practice based research to generate knowledge to improve our understanding of MSc student dissertation engagement and achievement, with the aim of improving the students' learning experience.

The objectives were: first, to examine how the students communicated and contributed to the CoP and secondly, to analyse the benefits and impact of CoPs on the students and their work. This study used both secondary and primary data; The secondary data included existing literature and archival statistical records of previous students' performance at the dissertation stage. The primary data is the MSc student engagement with the CoPs, MSc students' feedback on the benefits and issues with the CoP, MSc student dissertation results and PhD student feedback. The University's ethical approval process was used in the research design.

A mixed method approach was adopted; a method which ensures that there is a distance between the subjective biases of the researchers and the objective reality studied (Angen, 2000). The mixed method approach helps to enhance the findings of the study (Bryman and Bell, 2011). The data collection instruments used were qualitative and quantitative: questionnaires and statistical analysis of student engagement and results, compared to previous cohorts, not having access to a CoP. During the design of the instruments, careful consideration was given to Bryman and Bell's (2011) perception that the design of a data collection instrument must reflect the pre-determined aims of the research and only the data relevant to the aim is collected. Also, Gill and Johnson (2010) point out that the design of a data collection instrument should be drafted with clear questions and structures in order to enhance stakeholders' understanding of responses through suitable data for analysis.

The questionnaires included both open and closed questions, ascertaining how students engage with the CoP, at what stage of their dissertation they engage with the CoP, the benefits they saw and any issues/ways the CoPs could be improved.

All students' feedback, engagement and results were included in the analysis, given the small sample size. Questionnaires were completed anonymously in class to achieve a high response rate.

From an empirical perspective, the pilot project established CoPs around PhD students in project management subject areas. Four PhD students were involved and four respective CoPs established, which are: project management tools and techniques, project selection, stakeholder management and risk management. The eleven MSc Project Management students had to select which CoP to join, which was of most interest to them with respect to their planned dissertation topic.

The four CoPs were set up as Communities in the University's virtual learning environment, called BREO, which allowed students to communicate and build a shared research resource. The students were also allowed to use other platforms (such as face-to-face or by phone) to engage with the CoP. The PhD students led the CoPs in their research areas and supported their group.

To improve the quality of the study, participants were briefed before the project began. The briefing discussed the aim of the project, responsibilities, terms of reference, expectations and boundaries for both MSc and PhD students. Also, the quality of the study was enhanced by the qualitative findings enhancing the quantitative data.

4.1 Data Analysis

4.2 Profile of Respondents

For the pilot study, engagement, feedback and the dissertation results of the 11 MSc students were examined, while the 4 PhD students' experiences and assessment of Masters students' engagement were reviewed. The Masters students were full-time MSc Project Management students, 8 were international students and the remaining 3 were home students. There were 10 males and 1 female student, with an average age of 31. The PhD students were all full-time and international, all were male, and all were in at least the 2nd year of their PhD and had done some hourly paid teaching before taking part in this study. They undertook their roles in the CoPs voluntarily.

4.3 Modes of Communication and Contribution to the CoPs

From the survey, the MSc students communicated within their CoP via multiple means, such as: the BREO community, by phone, and in person: 9/11 respondents communicated through face-to-face meetings; 6/11 students communicated via telephone and 6/11 communicated within the BREO community. The mode of communication least used (1/11) was the social media platform i.e. WhatsApp.

In terms of students' contribution to the CoPs, 5/11 students indicated that they contributed resources to the CoP such as journal articles and references; 5/11 reported engagement by asking questions and 6/11 said they contributed to discussions.

4.4 Benefits of the CoPs

The empirical study showed that the CoPs were useful at various stages of students' dissertation. The students claimed that the CoPs helped: to clarify their dissertation title; in finding resources for the literature review; in the data analysis stage and also in the writing up. Few indicated that CoP was helpful in finding case studies.

Students reported that the CoPs provided 'advice and guidance' and 'improved (their) academic style and insight on critical analysis', whilst also helping them to use research articles in the BREO CoP and 'collect information and exchange valuable journals'.

After the MSc students had submitted their dissertations, the PhD students' interviews highlighted a number of benefits, namely: the development of symbiotic relationship between the PhD student and MSc students; the generation of a strong intellectual environment; the building of a bank of relevant academic journals and books for future students; the opportunity to relate with others during and after the project and the access to up-to-date literature not easily found.

4.5 Impact of the CoPs

The impact of the CoPs was analysed based on students' level of engagement with their CoP. The engagement level was categorised as High, Medium and Low; which represented a high level of proactive contact & contribution, some contact or contribution and minimal/no contact or contribution respectively. 2/11 had a High level of engagement and 6/11 had a Medium level of engagement and the remaining 3/11 had Low engagement.

Table 1: MSc Project Management Student Engagement with their CoP and Final Dissertation Result

Student	Engagement with CoP	Dissertation Result
1	M	Distinction
2	L	Pass
3	H	Distinction
4	M	Pass
5	M	Commendation
6	M	Distinction
7	M	Pass
8	L	Refer
9	H	Distinction
10	L	Pass
11	M	Distinction

Engagement with CoP

H = High - High level of pro-active contact & contribution

M = Medium - Some contact or contribution

L = Low - Minimal/no contact or contribution

Those students with a Low engagement achieved a Pass/Refer result in their Dissertation.

The final dissertation marks indicated that five students achieved Distinction ($\geq 70\%$) for their dissertation and all these students had High or Medium engagement with their CoP. The three students having Low engagement with their CoPs achieved Pass/Refer in their Dissertations.

Student results for MSc Project Management Dissertations were analysed over the last three years and are shown in Table 1. The CoPs were only in operation in 2015/16.

Table 2: MSc Project Management Dissertation results over 3 years.

	2013/14	2014/15	2015/16
Number of Students	21	19	11
Average mark	62%	59%	62%
Dissertation Mark <60%	48%	47%	45%
Dissertation Mark in Commendation Range	33%	32%	9%
Dissertation Mark in Distinction Range	19%	21%	45%

From Table 2, the significant improvement in the marks was in the Distinction range, compared to previous years. Nearly half of the students in 2015/16 academic year had 'Distinctions' compared to 21% in 2014/15 and 19% in 2013/14. Other points to note are that the average marks improved from

the previous year to 62% from 59%, but is the same as in 2013/14. However, the dissertation marks below 60% were the lowest in the 2015/16 compared to previous years.

5.0 Conclusion

A pilot study was used to investigate the impact of 'Communities of Practice' on MSc Project Management students' engagement and achievement in their dissertation. Both literature and empirical findings indicate that a CoP is a vehicle for knowledge sharing, personal development and seeking advice and guidance. The 4 CoPs created in this study were formed around a specific Project Management subject area, related to a PhD student's research area.

The guidance on cultivating CoPs from Wenger et al (2002) and Probst & Borzillo (2008) was noted and some elements were encouraged, such as one to one connections between members and the 'safe' environment in which to ask questions and have discussions. The BREQ Community tools provided an 'easily accessed system of knowledge' and information from outside the CoP was provided by APM resources.

The outcome of this study indicates that the MSc students found the CoPs to be helpful and the students who better engaged with their CoP achieved higher Dissertation classifications, which led to a higher percentage of Distinction grades, than in the previous years before CoPs were introduced.

Clearly the study is limited with only a small sample of students. There is also a need to identify ways to encourage greater participation in the CoPs.

6.1 Projections

This research is to be extended as a longitudinal study and a second cohort are undertaking their Dissertations and a 5th CoP has been introduced, with a further PhD student. This cohort's progress and results will be analysed to identify recurring themes and new issues in relation to the first cohort. In addition, the CoP project is to be extended across the Business School over 2016-18, involving 2 additional courses. Secondly, the investigation of CoPs as vehicles for professional development for the PhD students is to be investigated and thirdly, the involvement of the APM to identify subject specific resources which can be used in the CoPs will be exploited. Finally, evaluating the CoP concept across different faculties should be explored. There have been approaches from other Faculties within the University to extend this practice to them.

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