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How and with whom do educators learn in an online professional development microcredential

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ABSTRACT

A claimed technological advantage of online professional development (OPD) is the flexibility for educators to learn at a time and space of their convenience. However, the question of how, and with whom educators learn in OPD has received limited empirical attention. Using a participatory design approach, we explored the lived experiences and social networks of 19 educators following a formal OPD in a microcredential format. The mixed method study findings indicated that most (but not all) educators developed learning ties with their peers. This suggests that additional structural opportunities are needed to maintain social engagement in OPD. The findings will be of interest primarily to educators developing and delivering OPD, as well as current or potential professional learners who want to make the most out of OPD.

1. Introduction

In an ever increasingly complex, competitive, and demanding higher education (HE) sector, providing appropriate professional development (PD) is essential to ensuring educators have appropriate and sufficient skills, competences, and knowledge to support their students and embed equity into their practice (Bragg et al., 2021; Lantz-Andersson et al., 2018; Powell & Bodur, 2019). Increasingly HE institutions are using online professional development (OPD) to partially or fully replace face-to-face professional development (f2f PD: Lantz-Andersson et al., 2018; Rienties et al., 2013), particularly since COVID-19 (Bragg et al., 2021). We follow Bragg et al. (2021, p. 2) who define OPD as “structured, formal professional learning that is provided entirely online, resulting in changes to teacher knowledge, behaviour and practices”.

An obvious benefit of OPD is that it can provide flexibility and (potentially personalised) choices for educators regarding which elements of OPD they want to participate in, would find meaningful, and how and when they will study (Elliott, 2017; Yurkofsky et al., 2019). Another powerful reason to provide OPD is that it allows educators to participate in PD when they would normally not be able to do so, for

example, due to accessibility needs, geographical constraints, family obligations, financial constraints, etc. (Bragg et al., 2021; Elliott, 2017). Others suggest that OPD could be more cost-effective than f2f PD (e.g., Bragg et al., 2021; Mahat et al., 2022; Powell & Bodur, 2019).

At the same time there are multiple challenges when providing OPD in comparison to f2f PD (Bragg et al., 2021; Powell & Bodur, 2019), and the former can perpetuate socio-economic and gender-related inequity. For example, digital poverty is widespread and not all educators will have appropriate access to digital devices and the internet (Rienties et al., 2013), nor the skills, and competences to learn and work independently (Ma et al., 2020) and/or together online (Lantz-Andersson et al., 2018; Rets et al., 2023). OPD can therefore perpetuate inequity through ‘distanciation’ (Therborn, 2014). For example, Houlden and Veletsianos (2019, p. 103) argued that women, in particular, often have to ‘[work] through shared space and time’ when studying at a distance.

A recent systematic literature review by Bragg et al. (2021) of eleven formal OPD studies indicated some preliminary evidence that social engagement between educators is important for effective formal OPD. However, to the best of our knowledge no study exists that has specifically looked at how and with whom educators learn in formal OPD. This

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is important as a wealth of PD and OPD literature has indicated that online learning is often a complex and lonely experience for educators (Bragg et al., 2021; Rienties et al., 2023). With the increased prevalence of OPD it would be essential to establish whether (or not) such a formal OPD would allow educators to develop meaningful social relations and networks with others for their professional development. Using social network theory (Daly & Finnigan, 2010; Rehm et al., 2020; Roxå & Mårtensson, 2009) in this participatory design study (Cumbo & Selwyn, 2022) we used a mixed methods approach (Froehlich et al., 2020; Rets et al., 2023) to explore how 19 educators following the same formal OPD developed social network relations during the first four months of their program, and together with participants reflect on their lived experiences.

2. The importance of social networks in (online) professional development

According to a systematic literature review by Elliott (2017, p. 118), PD needs to “be interactive, be collaborative, be interest-driven and differentiated, be ongoing, provide resources, and should be implemented in day-to-day teaching”. In particular, Powell and Bodur (2019) argued that effective OPD needs to be relevant, useful, contain authentic tasks and activities, provide opportunities for reflection, and, in particular, provide interaction and collaboration opportunities for educators.

There is substantial evidence in f2f and blended PD that collaborative learning and social engagement between colleagues is helpful for motivation (Roxå & Mårtensson, 2009; Thomas et al., 2019), sharing of different practices and perspectives on teaching and learning (Bragg et al., 2021; de Lima, 2007), knowledge building and expertise sharing (Noben et al., 2022; Rienties et al., 2013), and network formation (Rehm et al., 2020; Rienties & Hosein, 2015; Rienties & Kinchin, 2014; Van Waes & Hytönen, 2022). Several scholars (Bragg et al., 2021; Lantz-Andersson et al., 2018; Lee, 2018) have used principles of Community of Practice by Lave and Wenger (1991) to explore how educators build, develop, maintain and re-create relations and connections with colleagues. According to a recent review by Saqr et al. (2022) of fifty years of research of social networks in education there is an increasing body of research specifically using social network approaches to conceptualise, map, and analyse how these relations between educators develop.

For example, in a study with eleven academics Pataraija et al. (2014) found that these educators used a diverse pool of knowledge and skills about teaching and learning via their networks, who provided both professional and emotional support. Similar findings were reported by a range of social network studies in an 18-month f2f PD programme in the UK (Rienties & Hosein, 2015, 2020; Rienties & Kinchin, 2014). An initial study of 54 academics found that those academics developed, on average, learning and teaching links with four peers ($SD = 1.63$) in their PD programme. Beyond these teaching and learning links these participants also maintained 3.63 links ($SD = 2.21$) on average with people outside their PD, and discussed their teaching and learning practice on average 128 times per year with others (Rienties & Kinchin, 2014). In a follow-up study (Rienties & Hosein, 2015) with 114 participants, comparable social network relations were identified, whereby follow-up qualitative analyses of reflections from participants indicated that these networks were primarily used for emotional, academic and professional support in their PD.

In other contexts, comparable network developments were noted that resulted from Belgium-based formal f2f PD (Thomas et al., 2019; Van Waes et al., 2018). For example, a two-year data collection of social network developments of 22 university educators who received PD relative to 16 educators without PD support by Van Waes et al. (2018) indicated that those who received PD developed larger and more diverse networks.

There is some evidence that collaborative learning design elements can also benefit educators in OPD settings. For example, a social network analysis (SNA) of Twitter conversations by 4194 users of a German

#EDchatDE helped teachers to build social capital (Rehm & Notten, 2016), although those who were more central in the network seemed to benefit more from network opportunities. In a qualitative study of six teachers following an OPD in the US Powell and Bodur (2019) found that the lack of social interaction and collaboration in OPD experience was a substantial weakness. Indeed in a recent quasi-experimental study of 179 in-service teachers in China following a four week OPD Ma et al. (2020) found that participants who worked together in the collaborative condition had significantly better learning outcomes and self-efficacy than those who worked in the individual condition, in particular when they were supported with so-called knowledge maps.

While there is emerging evidence that OPD can provide flexible learning experiences for educators, at the same time OPD might not be suitable for all educators, in particular those who do not have access to a suitable space (both in terms of location and time) in which to study. There are also concerns that OPD may lead to relatively lower completion rates relative to f2f PD (Ma et al., 2020) and some have questioned whether educators are able to transfer their learning to their own unique settings (Bragg et al., 2021). Indeed, Powell and Bodur (2019, p. 20) argued that “access to [OPD] does not ensure quality experiences or outcomes and may create a false sense of effectiveness if technology is used merely as a delivery tool void of effective design or implementation principles”.

2.1. Research questions (RQ)

As argued by Bragg et al. (2021, p. 2) “OPD for teachers offers the *potential* for developing teacher knowledge by connecting them to a global community of peers with common professional learning goals who share resources and knowledge [italics added]”. However, to the best of our knowledge no study exists that specifically has looked at whether (or not) educators in formal OPD grasp this potential to develop teaching and learning relations with peers. Furthermore, in line with research in f2f PD (Rienties & Hosein, 2020; Thomas, 2006; Van Waes et al., 2018) and informal OPD (Rehm et al., 2020; Rehm & Notten, 2016) it is essential to determine whether all educators benefit from formal OPD and collaboration opportunities with peers, or whether specific (sub-groups of) educators might be (dis)advantaged.

Our research questions were:

1. To what extent do educators develop teaching and learning relations with peers in a formal online professional development (OPD) programme, and what is the basis for these relations?
2. How do these teaching and learning relations support the OPD of educators?
3. To what extent do all educators benefit from OPD and social engagement with peers, or are there specific sub-groups (e.g., gender, discipline) that might benefit more from OPD?

3. Methods

3.1. Setting and participants

This mixed methods study aimed to analyse data collected from 19 educators registered on an online Postgraduate Certificate in Academic Practice (PGCAP) programme delivered by The Open University (OU) in the UK comprising four 15-credit microcredentials delivered on the FutureLearn platform. A microcredential is a short online course (FutureLearn, 2022; Pollard & Vincent, 2022). The study focuses on the first microcredential studied by those educators, who were largely early-career academics, and adopts a participatory design approach (Cumbo & Selwyn, 2022; Könings et al., 2014).

The PGCAP was introduced in September 2021. The OU is the largest university in Europe - a distance learning university and a four nations university (i.e., England, Northern Ireland, Scotland, Wales). It features an active approach where many employees, like its students, can work

flexibly at a preferred location and time of their choice.

The microcredential course that is the focus of this study is 12-weeks long, offering 15-credits at postgraduate-level. The course develops skills in online teaching and learning design. The course can be studied by the public, in addition to educators from the OU who are studying it as part of the PGCAP programme which, in turn, can gain them Fellowship of the Higher Education Academy (FHEA). In this study we focussed on 19 participants from the OU as this was part of their formal OPD, while for other “external” professionals this might not be part of their formal OPD.

The 19 educators worked online and asynchronously on weekly activities in FutureLearn and could discuss with each other in course steps in FutureLearn, which were supported by course mentors. Note that when referring to educators in this study we specifically refer to participants of the OPD, while “teachers” of the OPD will be referred to as course mentors. Furthermore, an initial meeting and a final debrief were organised for the 19 educators to encourage network formations. In addition, three informal smaller group sessions using synchronous web conferencing were organised by mentors for participants to share practice, ideas, and experiences.

All these activities took place online and while some participants might have met on the OU’s campus incidentally most interactions between participants were solely based upon their online interactions. A detailed breakdown of participants is provided in Appendix Table A1. All but one participant passed the first microcredential (i.e., indicating relatively high completion rates). For a more detailed description of the design principles of these FutureLearn microcredentials, we refer to Sargent et al. (2023).

3.2. Instruments

3.2.1. Online survey on lived experiences

The lived experiences of the educators were measured via an online survey one month after they completed the first microcredential in the PGCAP programme, in February 2022. The primary reason for distributing this online survey one month after course completion was to give participants time to reflect on the affordances and limitations of the OPD, and its relevance to their practice. The first part of the online questionnaire comprised eleven open questions (e.g., What is the best part of the OPD?; What is the worst part of the OPD?; Do you feel the OPD is helping your PD, particularly in teaching and learning?; Do you feel supported by your line manager in studying on the OPD?). The second part of the survey focused on SNA survey (see next section).

3.2.2. Social network analysis

The second part of the survey instrument used a so-called closed-network analysis (Daly et al., 2010; Rienties & Kinchin, 2014; Saqr et al., 2022) to measure the social networks within the OPD consisting of three social network questions (i.e., “I am friends with ...”, “I have learned from ...”, “I have worked with ...”), whereby lists with names of the 19 participants were provided. We adopted the exact same approach as described in Rienties and Kinchin (2014) in order to be able to benchmark this to a PGCAP with similar participants following it in a f2f format. A response rate of 58% was established for the SNA questions.

3.2.3. Qualitative reflection exercise

In line with recommendations of Daly and Finnigan (2010) and following Murphy et al. (2020), the SNA were triangulated with qualitative techniques to gain richer data on the complex relationship patterns in the OPD. One month after the lived experiences questionnaire was distributed (i.e., two months after educators completed the microcredential), we presented the results to seven participants in the form of three social network graphs (friendship, learning and working networks) during a 1-h qualitative reflection exercise as part of our participatory design approach (Cumbo & Selwyn, 2022; Könings et al., 2014).

First, participants were asked to reflect individually on the social

network graphs for about 10 min using predefined questions (e.g., what is the first thing that comes to mind when looking at these networks?; Why do you choose these persons to talk to (and not others)?; To what extent is it challenging to work with people from different disciplines?; In hindsight, would you have chosen the same group members?). As a second step, participants worked together in two break-out groups and were asked to discuss their own reflections and compare notes for 15 min. Finally, a 15-min general discussion was facilitated which was recorded. As part of the participatory design process, six educators volunteered to co-write and co-edit this paper and reflected on the findings and their practice.

3.3. Procedure and data analysis

This research received Human Ethics Research Approval (HREC/4228/Rienties/FitzGerald) and participants were free to participate and withdraw their consent. As argued by Korir et al. (2020), researchers using mixed methods approaches with SNA need to take specific care to obtain informed consent, and to be careful with missing responses. As this study used a participatory design process involving PGCAP participants, we had to ensure that any SNA data and qualitative data was appropriately anonymised. All social network data were analysed with UCINET and visualised using Netdraw. The interrelations of the respective networks and underlying demographics were explored in UCINET using Quadratic Assignment Procedures (QAP) correlation analysis, which is a common approach in SNA research (Noben et al., 2022; Rienties & Kinchin, 2014; Rienties & Nolan, 2014). Author 1, Author 4 and Author 8 analysed the subsequent transcribed qualitative data (i.e., lived experiences questionnaire, recordings of qualitative reflection exercise, returned reflections by participants) to identify key concepts reflecting the meanings attributed to the data (e.g., Lichtman, 2013). The participants’ reflection-related data were open-coded and an inductive approach was used to determine the arising themes (Thomas, 2006). The session recordings were used to corroborate these themes. In line with the participatory design approach, the data and findings were shared and discussed with participants as part of the co-design, and the findings and discussions were jointly co-written.

4. Results

4.1. RQ1: Teaching and learning relations in online professional development

4.1.1. Social network analysis

Figs. 1–3 illustrate the learning, friendship and work networks of the 19 participants in the OPD programme after four months. Note that the visualisation software tool Netdraw positions the educators at random across the X- and Y-axis based upon the (perceived) social interactions between educators, whereby educators who share similar connections

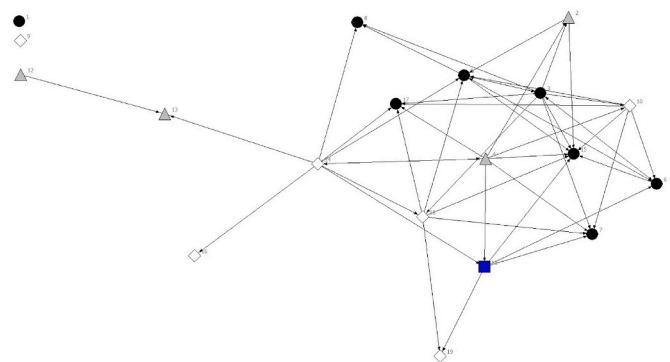


Fig. 1. Learning network after four months in Online Professional Development.

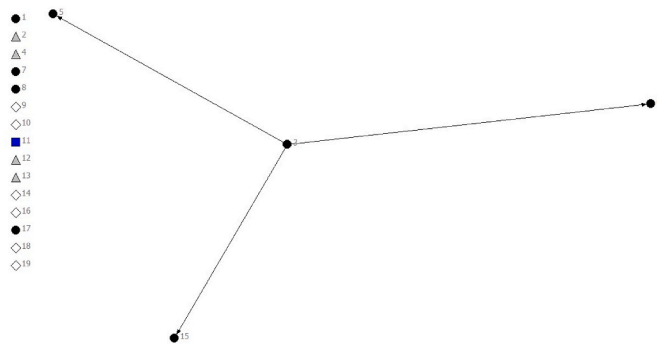


Fig. 2. Friendship network after four months.

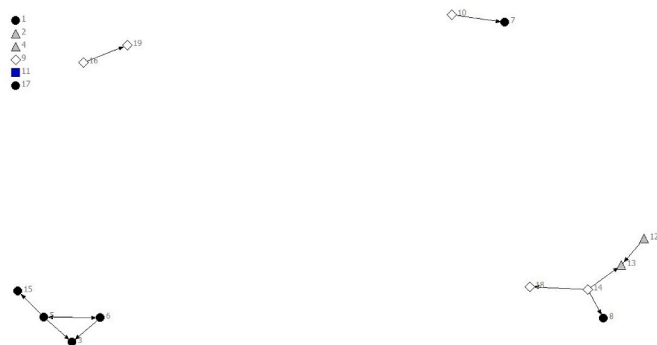


Fig. 3. Work network after four months.

are positioned more closely together (Rienties & Hosein, 2015; Rienties & Kinchin, 2014). Four aspects can be distinguished from these figures. Firstly, most educators with the notable exception of Participant 1 (P1, female, Business Studies, 0 ties across the three social networks) and P9 (male, STEM, 0 ties) developed at least one or more social tie in the OPD in Fig. 1. On average the 19 participants developed 4.63 learning links (SD = 2.97), leading to in total 48 links with an average density of 14% (i.e., 14% out of the maximum 342 possible relations). This seemed comparable to the average learning links reported in several f2f PD studies reported previously (Rienties & Hosein, 2015; Rienties & Kinchin, 2014; Thomas et al., 2019).

Secondly, some educators were more connected in the learning network (indicating that several educators learned and shared knowledge and expertise with these participants), while some educators were positioned on the outer fringe of the network and were not well-connected to other educators in the OPD. For example, P15 (female, Business Studies, 10 ties) received eight nominations from other educators who indicated they had learned from her, but as she had not completed the survey there were no outgoing learning links from P15. P5 (male, Business Studies, 12 ties) received six learning ties from other educators, but also indicated to have learned from four educators.

Thirdly, only a few educators developed friendship relations as illustrated in Fig. 2, and these were all from the same (Business Studies) Faculty. Only 0.31 friendship links on average (SD= 0.75) were reported with a low density of 1%, with most participants indicating that they did not develop friendship relations in the OPD. Similarly, in Fig. 3 some smaller subgroups can be identified in terms of work relations, whereby on average 1.05 work links (SD = 0.97) were identified with a low density of 3%. For comparison, in the f2f PD reported in Rienties and Hosein (2015) on average 1.07 (SD = 1.23) friendship links and 2.37 (SD = 1.29) work relations were reported, suggesting that the OPD might lead to fewer work and friendship connections.

4.2. RQ2 how do these teaching and learning relations support OPD of educators

The lived experiences shared via the online survey and follow-up qualitative reflection exercise indicated both positive support of OPD, as well as several limitations. In terms of the best part of the OPD, four out of eleven respondents (P6, P10, P11, P14) specifically indicated that the social engagement with other educators was useful. For example, P6 (female, Business Studies, 8 ties) mentioned the “knowledge exchange with other academics that are doing the same path”, P10 (male, STEM, 8 ties) indicated that “the best part is developing my knowledge of academic practice and engaging with others”, while P14 (male, STEM, 11 ties) indicated that “interaction with peers through forum discussion helped to understand the diversity of thought on many subjects.”

At the same time, the majority of participants indicated that they struggled to make time for OPD while also focussing on their job and advancing their career. In addition, several participants with relatively low ties (e.g., P1, P4) indicated that they struggled with the design of the OPD. For example, P1 who was not connected to any other OPD educators mentioned “limited engagement with the fellow learners ... I think more collaborative learning is needed.”, while P2 (female, Education and Health, 4 ties) indicated that “I don’t really feel like I know any of the other [educators], but if we were having lots of synchronous activities I would struggle to fit them in so it is a sacrifice I am willing to make.”

Indeed, P4 (female, Education and Health, 7 ties) indicated that the “[a]mount of time needed to fully engage with all reading and activities, not knowing who else is still on programme or what stage they are at”. P18 (female, STEM, 8 ties) suggested that “Asynchronous learning - work better in teams and hearing narratives to anchor [sic] my learning” was missing from the OPD, which in part was also echoed by P6 who indicated that “it might be worth to think to meet in person sometimes in the future to better establish relationship with colleagues”.

Nonetheless, ten out of the eleven respondents indicated that the OPD helped their PD, in particular their teaching and learning practice. For example, P1 indicated “[the OPD] has helped me learn the skills and develop my ability to produce more useful and effective online learning sources and assessments task”, while P18 indicated “it has definitely given me a wider perspective of the issues at hand, and it was useful to be able to implement them immediately in my own work.”

4.3. RQ3 do all educators benefit from OPD and social engagement?

In order to address the third RQ, we first analysed the available quantitative SNA data. As already indicated in Figs. 1–3, while some educators were well connected in the three social networks others were not so connected. As indicated in Table 1, for the three network indicators the standard deviations were mostly larger than the means, indicating that not all educators were equally well connected. In a follow-up correlation analysis using QAP correlations in UCINET in Table 1 we found some initial support for how teaching and learning relationships amongst participants developed. In contrast to previous studies (Rienties & Hosein, 2015, 2020; Rienties & Kinchin, 2014), we did not find support that the way participants were put into groups

Table 1
QAP correlations of gender, group division, faculty, and social network relations.

	M	SD	1	2	3	4	5
1 Gender	1.68	0.48					
2 Group	2.68	0.89	-.074				
3 Faculty	2.42	1.12	-.043	.117			
4 Friendship	0.32	0.40	-.049	.053	.321*		
5 Learning	4.63	2.97	-.167*	-.253	-.181	.037	
6 Working	1.05	0.97	-.071	-.079	.375*	-.137	-.268*

*p < .05, n = 19.

related to their friendship, learning and working relations. Again, in contrast to our previous studies (Rienties & Hosein, 2015; Rienties & Kinchin, 2014) we did not find a correlation between friendship and learning networks. Being part of the same Faculty was positively correlated with friendship ($\rho = .321, p < .01$) and work network relations ($\rho = 0.375, p < .01$), but not with learning relations. This might be explained by the finding that only participants in Business Studies indicated that they had developed friendship relations with each other (see Fig. 2). Perhaps surprisingly, there was a negative correlation between working relations and learning relations ($\rho = -.268, p < .01$), which might be explained by the way these educators were put together into an interdisciplinary environment, and perhaps learned more from participants with a different disciplinary background.

Subsequent qualitative analyses provided some further nuance of these quantitative findings. Some participants actively engaged with other educators and pro-actively searched for their support. For example, P4 indicated “[Peer educator] comments are helpful and they validate my own experience often even though they work in different Faculties or are from outside the OU, supported by P10 who indicated “the perspectives of other [educators] are useful in gaining a more holistic overview of academic practice and their engagement in academic practice in other domains offer insight into the practice of others and enable reflections on my own practice”.

Others were primarily learning from peer educators from the same Faculty who were also following the OPD, such as P5 who reported interaction “only really [with] my immediate colleagues who are also studying the [OPD]. This is because I have regular interactions with them anyway and don’t have to allocate specific time to catching up or meeting about the course itself. It can happen organically in our day-to-day conversations”.

Others indicated that they were following the online discussions, but at times seemed to be less “visibly” present in these online discussions due to other work commitments and/or working at slightly different time schedules. For example, P14 indicated:

“My learning experience was improved by the communication and forum discussion sections. Allowing me to see and realize differing viewpoints. Often [educators] brought their own experiences and background to the questions. This diversity of thought was a great addition that the course content could not otherwise provide. Having said this, I often read other [educators] conversations rather than direct communication myself. Although I made a dedicated effort to post to the forum my thoughts on topics as I went through the course (when I had something to add). Often this was after other [educators] had completed this section. This is because I was sometimes “playing catch-up” with the course content, working a few weeks behind the ideal schedule”.

In contrast, other participants like P12 indicated that she “had very minimal contact with other [educators] on the course”. As mentioned earlier, from the quantitative data two participants had formed no connections with anyone (P1, P9), indicating that not everyone in the PD equally took up the opportunity to socially engage.

When asked to reflect on whether educators would have changed their approach after seeing the SNA graphs in the qualitative reflection exercise, P14 indicated “I generally engaged with (what I perceived to be) the most active forum posters. They generally raised insightful points relating to the subject content. So yes, I would be happy to work again with this group.” P10 indicated “From an experience and practical perspective I would probably choose to work within my comfort zone, (own School if possible) however whether this is as beneficial as working with others from different domains or fields is debatable because choosing others in your own domain may only draw on similar experiences and practices whereas working with others from different domains creates opportunities to broaden your practice.” In line with Bragg et al. (2021) P6 perhaps best summarises our findings: “I think that the *potential* exchange with colleagues is the most important part (italics

added)”

5. Discussion

There has been a tremendous growth in online professional development (OPD) in Higher Education (HE) in recent years, especially since the COVID-19 pandemic. However, there is a paucity of evidence about whether educators are able to develop meaningful social relations in OPD. In this mixed methods study based upon participatory design principles (Cumbo & Selwyn, 2022; Könings et al., 2014) we explored, together with 19 educators, whether they were able to develop teaching and learning relationships with their peers in an OPD microcredential (RQ1), how these relations might support their PD (RQ2), and whether particular (groups of) educators might feel in/excluded in the OPD (RQ3).

In relation to RQ1, it was encouraging to discover that the vast majority of educators developed several teaching and learning relations with their peers in this OPD. Some, albeit from the same Faculty, developed friendships and working ties also, although these were substantially lower than in other f2f PD studies (Rienties & Hosein, 2015; Rienties & Kinchin, 2014; Thomas et al., 2019; Van Waes et al., 2018). Despite emergent criticisms that OPD makes it more difficult to develop and experience such relations (e.g., Powell & Bodur, 2019; Wynants & Dennis, 2018) it is encouraging to see that the teaching and learning ties were comparable for our OPD educators relative to other f2f PD studies, and further demonstrations that these interactions can be achieved in an online setting.

In terms of RQ2 there seems explicit and implicit evidence that these identified teaching and learning relations supported the PD of these educators. Nearly half of the participants explicitly mentioned these relations which helped them to reflect on their practice, share different ideas about how to effectively teach online, and how to cope with the pressures of starting an academic career. At the same time, several participants indicated time commitment issues due to workload pressures, which are already identified in other OPD studies (Bragg et al., 2021; Elliott, 2017; Van Waes & Hytönen, 2022; Wynants & Dennis, 2018). This might be a flip-side to the metaphorical coin of providing flexibility relative to f2f PD, where participants are expected “to turn up for learning” at a particular time and place and might find it easier to develop spontaneous friendship and work-relations.

With the increased flexibility of OPD and fewer opportunities to spontaneously interact with peers in between f2f OPD activities perhaps developing those friendship and work relations might require more time, and/or concerted effort. An alternative explanation might be that educators might have developed other relations with peers and others outside the formal OPD, in line with Community of Practice approaches (Lantz-Andersson et al., 2018; Lave & Wenger, 1991; Lee, 2018).

In terms of RQ3 while we found that most educators were connected in the OPD there were several participants who were not. From the qualitative data several educators indicated that they did want to be more involved, but they lacked the structure, support, and/or time to do so. Our QAP correlations did not identify any particular (gender, discipline) sub-group characteristics that might explain these differences, but the qualitative findings indicated a potential tension in the expected schedule and workload of the OPD and participants’ own schedules.

While participants can work through OPD at their own pace they are required to submit the course assessment at the end of the final week, so need to keep on track in order to do so. In addition, the various tasks and related collaboration activities featuring in each week of content might have (unintentionally) created pressures on some participants to follow a particular pace. Some participants were very active in the discussion areas in FutureLearn, while others appeared less so. Some indicated that even though they were less active they still benefited from these discussions, while others struggled to make meaningful contributions as they were a bit behind in terms of expected activity.

These potential “mismatches” in OPD schedules and participants’

activities have been identified before in other OPD (Powell & Bodur, 2019; Wynants & Dennis, 2018), and are also often present in other online learning settings (Nguyen et al., 2018). In future work it would be useful to link actual engagement data with the schedule of the OPD in order to determine whether or not there is a need to provide more structure and support in terms of ensuring that participants are on the right track and maintaining their pace of activity based upon their own schedule.

5.1. Limitations and practical implications

One obvious limitation of this study is the relatively small sample size of 19 educators in one unique OPD in one institution. Another limitation is that all the data included were based upon self-reports. However, by using a mixed methods study and triangulating lived experiences with social network relations and reflective exercises in a participatory design manner we not only gathered and co-generated rich and detailed information but also understanding and critical reflections from both educators and mentors over a substantial period of time (i.e., in total around six months). In particular, substantial literature identifies that depictions of social networks generated by gathering simultaneous perspectives from all participating educators are accurate (Daly et al., 2010; Murphy et al., 2020; Noben et al., 2022; Rienties & Hosein, 2015, 2020; Thomas et al., 2019; Van Waes et al., 2018; Van Waes & Hytönen, 2022). The lived experiences and participatory design approach while co-writing this article with six educators has further strengthened the co-creation and interpreting of the findings.

6. Conclusion

We know from the literature that social interaction is beneficial for professional development generally (Daly & Finnigan, 2010; Lantz-Andersson et al., 2018; Rehm et al., 2020; Van Waes & Hytönen, 2022) and, in this study, it was mostly beneficial in an online setting. Echoing some of the sentiment of Bragg et al. (2021) social engagement is arguably an important part of OPD for several educators, but not entirely essential for everyone. For the educators in this study, the opportunity and potential to engage with others was as important as the engagement itself.

As evidenced by Lantz-Andersson et al. (2018) and Bragg et al. (2021) this study supports the perception that social engagement opportunities in OPD can be a valuable means of developing supportive

and collegial professional practices. In addition, it somewhat addresses the call of Lantz-Andersson et al. (2018) to require specific evidence of the collaborative merits of teachers’ online interactions. In this study, we highlighted the collaborative merits to be aspects such as ‘diversity of thought’ and the engagement with others supporting academic knowledge. Arguably, there is a need to further delve into these collaborative merits in online spaces and, also to see whether these relationships are sustained/have impact over time.

The practical implications of this study are that designers of OPD need to carefully think how they are going to incorporate social engagement in their design. At the same time, educators and course mentors have a pro-active role in creating a sustainable community of practice that allows educators to learn from each other, while also ensuring that those who are seemingly less active are provided with a space and an opportunity to share their voices. As strongly evidenced in this and other studies (Bragg et al., 2021; Powell & Bodur, 2019; Wynants & Dennis, 2018), opportunities for rich and lasting social engagement between educators in OPD is important for their academic, social and emotional development. Our study has shown that with careful design and implementation comparable teaching and learning networks can be developed in OPD relative to more traditional f2f PD, although more work needs to be done in future research as to whether (or not) it is desirable and necessary to also encourage more social engagement in actual friendship and work networks. Providing the potential of social engagement in OPD is not enough, we need pro-active engagement from all stakeholders to ensure that OPD is as inclusive as other forms of PD.

CRediT authorship contribution statement

Francesca Calo, Suz Corcoran, Daniel Haslam, Claire A Harris, Martin D Suttle, Aqueel Wahga: as participants of PGCAP: Formal analysis, writing original draft. Kathy Chandler, Leigh-Anne Perryman: as educators of PGCAP: Conceptualization, writing original draft.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix

Table A1

Descriptives of participants and the number of social relations in OPD

Participant	Gender	Faculty	#Friendship ties	#Learning ties	#Work ties	Total ties
1	Female	Business Studies	0	0	0	0
2	Female	Education and Health	0	4	0	4
3	Male	Business Studies	3	9	2	14
4	Female	Education and Health	0	7	0	7
5	Male	Business Studies	1	8	3	12
6	Female	Business Studies	1	5	2	8
7	Male	Business Studies	0	5	1	6
8	Female	Business Studies	0	3	1	4
9	Male	STEM	0	0	0	0
10	Male	STEM	0	7	1	8
11	Female	Arts and Humanities	0	6	0	6
12	Female	Education and Health	0	1	1	2
13	Female	Education and Health	0	2	2	4
14	Male	STEM	0	8	3	11
15	Female	Business Studies	1	8	1	10
16	Female	STEM	0	1	1	2
17	Female	Business Studies	0	5	0	5
18	Female	STEM	0	7	1	8
19	Female	STEM	0	2	1	3

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