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Journal of Interprofessional Care

ISSN: 1356-1820 (Print) 1469-9567 (Online) Journal homepage: http://www.tandfonline.com/loi/ijic20

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To cite this article: Rowan Myron, Catherine French, Paul Sullivan, Ganesh Sathyamoorthy, James Barlow & Linda Pomeroy (2017): Professionals learning together with patients: An exploratory study of a collaborative learning Fellowship programme for healthcare improvement, Journal of Interprofessional Care, DOI: 10.1080/13561820.2017.1392935

To link to this article: https://doi.org/10.1080/13561820.2017.1392935

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Published online: 14 Dec 2017.

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JOURNAL OF INTERPROFESSIONAL CARE
https://doi.org/10.1080/13561820.2017.1392935

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ORIGINAL ARTICLE

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Professionals learning together with patients: An exploratory study of a collaborative learning Fellowship programme for healthcare improvement

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ABSTRACT

Improving the quality of healthcare involves collaboration between many different stakeholders. Collaborative learning theory suggests that teaching different professional groups alongside each other may enable them to develop skills in how to collaborate effectively, but there is little literature on how this works in practice. Further, though it is recognised that patients play a fundamental role in quality improvement, there are few examples of where they learn together with professionals. To contribute to addressing this gap, we review a collaborative fellowship in Northwest London, designed to build capacity to improve healthcare, which enabled patients and professionals to learn together. Using the lens of collaborative learning, we conducted an exploratory study of six cohorts of the year long programme (71 participants). Data were collected using open text responses from an online survey (n = 31) and semi-structured interviews (n = 34) and analysed using an inductive open coding approach. The collaborative design of the Fellowship, which included bringing multiple perspectives to discussions of real world problems, was valued by participants who reflected on the safe, egalitarian space created by the programme. Participants (healthcare professionals and patients) found this way of learning initially challenging yet ultimately productive. Despite the pedagogical and practical challenges of developing a collaborative programme, this study indicates that opening up previously restricted learning opportunities as widely as possible, to include patients and carers, is an effective mechanism to develop collaborative skills for quality improvement.

ARTICLE HISTORY
Received 15 December 2016
Revised 18 July 2017
Accepted 12 October 2017

KEYWORDS
Evaluation research; interprofessional education; collaborative learning; service improvement; work-based learning; patient-centred practice

Introduction

A range of professional and patient perspectives are required to improve quality in healthcare (Berwick & Nolan, 1998; Ferlie & Shortell, 2001). A key feature of quality improvement initiatives is facilitating dialogue between groups from different backgrounds (Busari, Moll, & Duits, 2017; Dückers, Groenewegen, & Wagner, 2014; Mittman, 2004; Schouten, Hulscher, Everdingen, Huijsman, & Grol, 2008) and promoting interprofessional education which encourages learning between these groups (Anderson, Gray, & Price, 2017; Batalden & Davidoff, 2007; Weggelaar-Jansen, Van Wijngaarden, & Slaghuis, 2015). This learning involves both the 'technical' skills of quality improvement, for example learning tools such as process mapping and PDSA cycles; and the 'social' skills, for example influencing, problem solving, empathy needed to create and sustain improvements (Godfrey, 2013; Godfrey, Andersson Gare, & Nelson, 2014; Lucas & Nacer, 2015). There is little literature however on *how* interprofessional learning helps develop skills in quality improvement.

Further, the literature on patient involvement in research and healthcare improvement (*e.g.* shared decision-making) is growing (Domecq et al., 2014; Gibson, Britten, & Lynch, 2012; NIHR, 2015; Prey et al., 2014). There is emerging evidence examining how and why patient involvement benefits service improvement, such as ensuring that the questions addressed in service improvement research matter to patients (Barber, Beresford, Boote, Cooper, & Faulkner, 2011; Pizzo, Doyle, Matthews, & Barlow, 2015; Staniszewska et al., 2011), and how patients may be involved in quality improvement programmes (Gibson et al., 2012; Ocloo & Matthews, 2016; Renedo, Marston, Spyridonidis, & Barlow, 2014). However, there are few examples of how patients can *learn* with professionals.

We contribute to addressing these two gaps by reporting on a study of a quality improvement educational programme (the Fellowship hereafter), using the lens of collaborative learning,[1] which examines how learners benefit from a range of perspectives on their understanding of real world problems (Bouillion & Gomez, 2001). The Fellowship is designed to build capacity and capability in quality improvement and leadership in healthcare and is part of the English National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care

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Northwest London (NIHR CLAHRC NWL) programme, which is funded to conduct applied health research and support the translation of research evidence into practice in the English National Health Service.

The Fellowship is a novel empirical case as it is designed for patients and healthcare professionals to learn together. It is a one day per week, year-long programme with 12–15 participants in each cohort. The Fellowship is modelled on collaborative learning theory, which suggests that social interaction is an integral part of learning and multiple perspectives strengthen this process. Therefore, participants on the Fellowship programme are drawn from different backgrounds, including patients and different professional groups who have varying seniority, research interests, and educational attainment.

The aim of this article is to analyse how a collaborative learning approach (the Fellowship programme) can support interprofessional and patient learning in quality improvement.

We firstly review the literature on collaborative learning and interprofessional education, before outlining the background to the Fellowship and its curriculum. We detail how the study was conducted, including data collection and analysis. We then present key findings of the evaluation and discuss how these contribute to our understanding of collaborative learning processes, and the pedagogical challenges of this type of programme. We conclude by discussing how this kind of approach has potential benefit to professionals and patients learning together to improve healthcare.

Background

Healthcare professionals have an obligation not to work in uniprofessional groups in order to provide the best patient care (Brandt, Lutfiyya, King, & Chioreso, 2014; Irvine, Kerridge, McPhee, & Freeman, 2002; Reeves, Palaganas, & Zierler, 2017; West et al., 2016), but professional boundaries delineating different work practices (*e.g.* between medical and nursing care) may prevent this (Powell & Davies, 2012; Toiviainen & Kira, 2017). Over the last decade, healthcare workers have experienced policy and organisational drivers (e.g. increase in non-medical prescribing practices) to encourage them to step out from traditional 'silo' roles towards a more interprofessional environment to improve quality of care. To encourage this, educating different professional groups together may support frontline staff to develop capacity and capability to work interprofessionally (e.g. Barr, Helme, & D'Avray, 2011; Becker & Schell, 2017; Caley, 2006; Jackson, 2006; Olson & Bialocerkowski, 2014; Pollard, Miers, & Thomas, 2010).

Further, interprofessional working is a key element of successful approaches to quality improvement (Berwick & Nolan, 1998; Carter, Garside, & Black, 2003). Drawing multiple disciplines together to share knowledge is an effective method of levelling hierarchy and empowering staff at all levels to make change (Fletcher, Whiting, Boaz, & Reeves, 2017; Shojania, McDonald, & Wachter, 2004). Efficient healthcare delivery is not merely about competence in skills but also in capability to effect service improvement (Plsek & Greenhalgh, 2001). To be effective, education should not simply offer information but an environment and process that enables students to develop sustainable capabilities that they can take across their constantly evolving roles and organisations in healthcare (Fraser & Greenhalgh, 2001). Collaborative learning may be a useful lens to consider how to enact this in practice and assist in understanding how interprofessional education may support learning in quality improvement.

Collaborative learning theory and interprofessional education

Collaborative learning theory (CLT) is an umbrella term for a group of pedagogical approaches which involve joint scholarly effort by learners and instructors together (Andriessen, Baker, & Suthers, 2013; Delucchi, 2006; Vygotsky, 1997). Building on the work of Russian psychologist Lev Vygotsky, who suggested that social interaction plays a key role in cognitive development and effective learning, collaborative learning approaches focus on how learners benefit from a range of perspectives on their understanding of 'real world' problems, rather than adopting a traditional didactic model.

Collaborative learning theory is underpinned by a social constructivist ontology—the physical and symbolic tools that facilitate interaction cannot be detached from the rich social context in which the learning is taking place (Brown, Collins, & Duguid, 1989; Wertsch, 1993). Learning is seen essentially as a social phenomenon rather than individual one, where interaction constitutes a key part of the learning process (Donato & McCormick, 1994; Lantolf & Pavlenko, 1995; Lantolf & Thorne, 2006). Complex contexts, such as healthcare, encourage students to practice and develop higher order reasoning and problem-solving skills (Grabinger & Dunlap, 2016; Greenhalgh, 2001).

One of the main tenets of collaborative learning is that what a learner can achieve alone and what a learner can achieve with appropriate guidance, encouragement, and peer support are inherently different (Wassa, Harland, & Mercera, 2011). This builds on Vygotsky's concept of the Zone of Proximal Development (ZPD), which suggests that each individual has within them a ZPD to their initial zone of understanding (Vygotsky, 1987). Where a difficult problem may be challenging for an individual alone, discussing that problem with an experienced instructor or peer can stretch the learner beyond their individual zone of ideas and competence and 'scaffold' (or encourage) them to open their mind to new ways of doing things, thus expanding their initial zone of development.

A collaborative learning approach encourages learners to work together to search for understanding by examining problems and discussing solutions to them (Gwee, 2009; Vince, 2004). Collaborative learning activities can vary widely, but most centre on a learner's exploration or application of the educational material with others, not simply the instructor's presentation or explanation of it (Trimbur, 1989). In practice, this involves learners working in small groups to discuss presented material and the application of this in the real world. This approach is often enhanced by participants with a range of perspectives (such as different professional roles) and applying these to the same issue.

The collaborative learning literature reflects what is known about successful interprofessional education (Barr, Koppel, Reeves, Hammick, & Freeth, 2005). The concept of social learning, of learning better together, of learning more through being exposed to different perspectives, is reflected in both collaborative learning theory and the interprofessional education literature (D'Amour & Oandasan, 2005; Jones & Issroff, 2005; Reeves et al., 2017). The application of collaborative learning theory in practice has focussed on particular techniques which facilitate social learning. These include small group work, peer problem-solving discussions, and learning within a real world context (Barkley, Cross, & Major, 2004). These techniques are also commonly seen in interprofessional education programmes. For example, in a systematic review examining the nature and impact of interprofessional education Ooandasan and Reeves (2005) identify the different strategies employed in its delivery. These include small group learning, curriculum content, and the role of faculty (as facilitator rather than 'expert teacher').

Fellowship programme

The Fellowship was designed using the principles of collaborative learning and contained the key features of effective interprofessional education programmes.

Small group learning

Face-to-face learning was conducted one day per month over the course of each cohort (12 days in total). Eight of these days were delivered as small group interactive workshops with the Fellowship cohort, an accepted learning format for knowledge exchange skills (Holmes, Schellenberg, Schell, & Scarrow, 2014). Workshops were tailored to the needs of the cohort and made relevant to their setting and topic area and participants facilitated sessions in their areas of expertise, developing their presenting and leadership skills. The other four face-to-face days were held at larger events, where 100–150 delegates from across the wider NIHR CLAHRC Northwest London programme came together to learn with national and international quality improvement researchers, as well as professionals from other teams working in quality improvement projects.

Curriculum

The Fellowship curriculum was a spiral model (Bruner, 1977), where participants conducted quality improvement projects in their workplace and brought their real life challenges to monthly Fellowship meetings (see Box 1 for detail on the quality improvement curriculum). Following peer discussion, participants would then take potential solutions back to their settings. Discussions were modelled on the action learning set methodology (Vince, 2004). This model worked well for participants, scaffolding (supportively stretching) their problem-solving skills into their ZPD (Vygotsky, 1978) and enabling them to develop their competencies each time they solved a problem with support.

The Fellows worked on a range of improvement projects, in a wide variety of contexts, for example the development of a preparation programme for cancer patients undergoing surgery and improving hearing loss awareness in care homes. The projects have a range of outputs including a number of peer reviewed publications (e.g. Staveley & Sullivan, 2015) to patient information films (e.g. Lee, 2017).

Box 1. Details of the Fellowship design and curriculum.

A total of 71 fellows from a range of professional and patient backgrounds have completed the programme (2015–2016) with each annual cohort having 13–15 participants. Cohorts one, two, and three ran for nine months and cohorts four, five, and six ran for 12 months. In 2012, consistent with the broader principles of patient engagement and involvement in quality improvement, patients were actively encouraged to apply to the programme and from 2012 (cohort 3), each cohort has had at least two patients as part of the programme.

Each fellow committed one day per week to the programme (one day per month as 'protected' group training days and three days per month project based learning). Each fellow received a bursary to support a work-based improvement project, personal development, and a study visit to a centre of excellence.

The curriculum was based on the academic literature of quality improvement and the practical experience of faculty staff in working with teams to deliver improvements in healthcare. The curriculum was designed to enable participants in the programme to understand the robust academic evidence available and apply this to their workplace.

The curriculum comprises three main elements:

1) Quality Improvement tools and techniques, such as the Action Effect Method (Reed, McNicholas, Woodcock, Issen, & Bell, 2014) and Plan Do Study Act cycles (Taylor, McNicholas, Nicolay, Darzi, & Bell, 2014);

2) Leadership, including transactional, transformational and engaging theories of leadership; leadership styles; and coaching and time management skills (Godfrey, 2013);

3) Peer-to-peer learning and support (participants have time to share ideas, 'real world' problems and learn from other professionals and patients).

Role of faculty

The Fellowship faculty acted as facilitators for learning rather than as 'expert teachers' (Kagan & Kagan, 1994). Approximately 70% of the education sessions in each cohort were facilitated small group discussions or action learning sets where faculty asked open questions and encouraged all participants to share their perspectives on the issues raised in discussion. Given the diverse backgrounds of participants, facilitators developed skills while ensuring that a single voice did not dominate the groups, and that all had a chance to speak. The remaining 30% of sessions were more traditional didactic teaching to share content of particular quality improvement methods. Participants were also offered individual mentorship outside of the group sessions to help them work through their project plans.

Methods

We conducted an exploratory study with the first six cohorts of the Fellowship programme.

Data collection

Data were collected from 65 of the total of 71 fellows participating in the programme between 2010 and 2015 (Table 1). Six fellows declined to take part in the evaluation, all

participation was voluntary. Data were collected using two methods (semi-structured interviews and online survey open text responses).

Semi-structured interviews

Semi-structured interviews were considered the most appropriate and effective method to enable participants to provide an in depth account of undertaking the Fellowship (Barriball & While, 1994). 34 interviews were conducted with a subset of participants from the Fellowship (cohorts 1–4) by an independent researcher (LP) not involved in the development or delivery of the Fellowship. Each participant was provided with a written overview of the study. A face-to-face one hour interview was scheduled. Each participant was emailed an information sheet, reviewed in person prior to the start. All informants signed a consent form acknowledging their willingness to participate, be digitally audio recorded, and anonymously quoted. Participants were asked to describe their experience of the programme including impact on their skills, group dynamics, and practical challenges.

Online survey open text responses

Online free text response surveys were distributed at three time points in each Fellowship cohort (after induction, at the mid-point and as participants completed the programme). The evaluation forms were administered by the faculty of the programme and fellows completed them online anonymously using the *Qualtrics* electronic questionnaire platform. Each participant was assigned a code which ensured anonymity and confidentiality.

Data analysis

The analysis process had two broad stages. Firstly, data from the semi-structured interviews were transcribed and analysed inductively by one of the authors (LP) using an open coding approach (Strauss & Corbin, 1990). This process involved organising the data in order to establish patterns, critical themes, and meanings within the data, using this to develop conceptual categories, which fed into broader themes to order and summarise the data (Ritchie, Lewis, McNaughton Nicholls, & Ormston, 2003). LP developed the coding structure and themes, which were reviewed and sense checked by two other authors (JB and RRM). Secondly, RRM analysed the survey free text responses deductively using these broad themes and inductively to identify any further themes not present in the interview data. No new themes emerged at this stage. NVivo software was chosen explicitly to aid coding and sharing of coding files across three different work sites. LP and RRM met to ensure thematic saturation and determine the final overarching themes from both data sets. The refinement of the themes was conducted by a process of reading and re-reading across interview transcripts and open text survey responses checking for variability and consistency, as well as reference to the relevant literature and consultation with the research team. The themes we present in this article specifically contribute to the collaborative learning and interprofessional education literature.

Table 1. Background of Fellowship participants.

Participant group	All cohorts 2010–2015	Interviews 2010–2013	Evaluation form completed 2010–2015
Professional fellows			
1. Doctor	14	7	8
2. Manager	13	8	3
3. Nurse	8	4	3
4. Public health professional	6	4	0
5. Researcher	5	3	5
6. Pharmacist	3	2	2
7. Physiotherapist	3	1	1
8. Psychologist	3	1	1
Other professional roles including: Dietician, Commissioner, Audiologist, Speech & Language Therapist, Industry	6	2	2
Patient and Carer fellows	10	2	6
Total	71	34	31

Ethical considerations

The study was approved by Central London Research Ethics Committee 1 (REC approval number 09/H0718/35) and the participating NHS organisations.

Results

Three inter-related themes helped inform our understanding of how a collaborative learning approach may support interprofessional education for quality improvement. Firstly, participants appeared to value multiple perspectives, including patients' perspectives, and reported that the Fellowship design, particularly the small group learning, enabled them to be honest in discussions about the curricula and how it applied to their quality improvement practice. Secondly, participants reflected that, within this participatory space (mental as well as physical), the discussion of their 'real world' problems in improving healthcare with fellows from a variety of backgrounds was beneficial to their learning. Thirdly, participants found this process novel, and challenging, yet ultimately beneficial to their learning, challenging their assumptions and inviting them to step out of their comfort zone.

Multiple perspectives

Participants reflected that the Fellowship provided a collaborative and participatory space, and appeared to value the multiple perspectives of the group. Participants appeared to benefit from identifying the common problems they encountered undertaking quality improvement work, despite the different environments they were operating in. As described in the data extracts below:

> The great thing about the fellows was meeting each other and learning from each other and having that support (Manager, Survey)

> It is amazing that so many of the experiences encountered by each can be found in the diverse and wide ranging contexts of the other fellows (Other professional, Survey)

The diverse nature of the Fellowship also helped participants develop a richer understanding of other roles and

perspectives. This appeared to diminish perceived professional and lay hierarchies:

> I was pleased it was such a mix. It gives you a broader understanding of other roles..... because working in the organisation you don't get a chance to be so multidisciplinary with them but also to be an equal with them. (Nurse, Interview)

The diversity of backgrounds and experiences of fellows created an environment which was different from their working contexts. This change of environment appeared to enable participants to more positively engage with the learning material and to move away from focusing negatively on problems within their day or day settings:

> Just completely different people. It made it much more interesting and you don't wander down those hideous 'oh pity me, my life'. If you are all working in an acute hospital you have such a shared culture then you can just moan. Whereas listening to other people from different backgrounds it was more interesting (Manager, Interview)

This change of environment was enhanced by the inclusion of patients in the Fellowship, which was new to many professionals taking part in the programme. Participants reflected that this feature of the Fellowship was particularly influential in learning about quality improvement:

> The fellowship was useful, was absolutely transforming my approach to working in partnership with patients and carers. Absolutely transformed it' (Manager, Interview)

Patient participants identified particular challenges relating to identity and representation in a traditionally professional oriented environment:

> My only concern about patient involvement in service improvement is that patients tend to be self-selecting and their views may not be representative of the whole population of patients. Though overall I believe that patient involvement is a good thing. (Patient, Survey)

Participants reflected that the patient fellows brought not only their experience as a service user but also their own distinct professional backgrounds (e.g. from industry) which benefited the group. For example,

> Good to have patient with a different job role from industry ..... his level of knowledge of things you would be blown away. He used to work in construction so he had this whole extra additional knowledge that was very valuable. (Doctor, Interview)

However, some participants perceived that the variety of contributions and perspectives within the group also led to modified behaviours which may have been detrimental to learning:

> What we [patients] found with other people was that they actually over –compensated rather than anything else. So rather than shunning us they actually became frightened of what to say - they [healthcare professionals] became frightened of communicating (Patient, Interview)

The role of Fellowship faculty in acting as facilitators to discussion rather than as 'expert teachers', and in ensuring participants felt able to share common experiences in an egalitarian fashion, was acknowledged:

> Everyone comes together with viewpoints and through discussion move more together with understanding and developing of views and opinions. (Doctor, Interview)

> Working alongside other fellows as an equal has been life changing for me (Patient, Survey)

The Fellowship appeared to serve its designed purpose in enabling collaborative learning by attempting to level hierarchy and successfully bringing together a range of professions and patients, enabling them gain understanding of how to make improvements to healthcare in complex contexts.

Discussing real world problems

The second (related) finding was that participants appeared to benefit from one of the key features of collaborative learning, that of discussing real life problems to guide understanding.

Participants reflected that these real world discussions were challenging but beneficial to their learning:

> I found it really annoying that there were a lot of issues..... So, I was having these conundrums when I was meant to be learning about leadership. If I am honest I found that really annoying. I am not saying it is a bad thing ..... (Doctor, Interview)

> The fellowship gave us the opportunity to meet people in very different jobs ... so people that were patient representatives, people that were doctors, all sorts of people. So it was really different people coming together but understanding that we all have the same kind of things we are interested in..... (Manager, Interview)

Participants noted that the Fellowship provided them with a safe environment in which to deal with complex and sensitive problems they were dealing with on a daily basis in their quality improvement efforts, and work with other learners to discuss possible solutions to issues they were facing:

> Establishing a secure, close-knit group where feelings can be openly expressed without any concern about recriminations, etc. There is a genuine warmth to the group which I don't believe I've experienced within any other network. (Patient, Survey)

This appeared to be particularly true for patient fellows:

> [The fellowship gave a] broader perspective and understanding and how we could help to improve the health service and make a difference (Patient, Interview)

> Particularly our group having..... patient representatives was a really positive experience and for me they challenged everything, which was great. (Manager, Interview)

The discussion of real world problems in a facilitated, collaborative way where patients and professionals felt comfortable expressing their views appeared to be beneficial to their learning, particularly in relation to the social aspects of improvement work.

Challenges of collaborative learning

The third main theme related to the challenges of collaborative learning within an interprofessional setting. In particular, participants reflected that the interprofessional nature of the Fellowship groups sometimes led to difficult discussions:

> The mix of the individuals and their commitment was good … but there were strong characters there (Public Health Manager, Interview)

Participants also reflected on the challenges involved in including patients in a learning programme:

> That was an odd old thing [inclusion of patients]. On a personal level we got on extremely well with them…. They were very vocal. They were expert patients if you know what I mean and they really were champions of patient involvement. But I think it sometimes pulled it all too far that way and they would sometimes take offence at things that were said. (Nurse, Interview)

However, participants (both professional and patient fellows) went on to suggest positive aspects of the inclusion and that some of the difficulties experienced and outlined above can prove beneficial in retrospect:

> On the one hand they [patients] were a blessing to the group and I think they taught us things. … It forced us to think about it properly and not to play lip service and it made us feel uncomfortable which may be a good thing. (Nurse, Interview)

> What they [healthcare professionals] learnt very very quickly and was brilliant for us [patients] to see was that as soon as [they] said we need to do this we kept on saying what about the patients? Shouldn't they be doing it with you? And within about a month of us starting to say that it pretty much everybody in the group was saying what about the patients? And going to meetings and standing up for us. So for us it was brilliant. (Patient, Interview)

Some participants reflected that they were initially uncomfortable with the diversity of the groups, but that this view shifted over the course of the Fellowship programme and participants came to value this diversity.

Discussion

The findings from this study illustrates the benefits and challenges of collaborative learning in an interprofessional education programme (Anderson et al., 2017; Barr et al., 2011; Becker & Schell, 2017; Bruner, 1977). Overall, participants appeared to value the process of learning together and discussing 'real world' problems. The inclusion of patients in the Fellowship programme brought even more diverse perspectives to the problem or subject being studied, beyond what might be expected when only professionals came together. This appeared to make the learning more challenging, yet ultimately productive (Andriessen et al., 2013; Brown, Roediger, & McDaniel, 2014; Busari et al., 2017).

The Fellowship appeared to serve its designed purpose in bringing together a range of professionals and patients to learn from one another and develop skills in quality improvement, through the practical application of collaborative learning techniques such as facilitated small group work (Brandt et al., 2014). The multiple perspectives brought during the interprofessional education programme appeared to be empowering to participants, to assist them in understanding the complex context of healthcare (Plsek & Greenhalgh, 2001) and make improvements within their settings. Over the period of the Fellowship programme, participants gradually moved away from traditional groups and labels and the cohorts became groups of peers, rather than placing emphasis on different professional backgrounds.

The findings of this study indicate how involving patients as equals with professionals in a learning programme can benefit participants by providing a rich context in which many perspectives are brought to develop solutions to 'real world' problems. This contributes to our understanding of how collaborative learning can support quality improvement in healthcare and leadership. The patient perspective adds to the 'rich context' which is integral to social learning (Brown et al., 1989). This context included challenge for both participants and faculty facilitators.

The potential challenges participants faced to make sense of new concepts and work with new, unexpected methods and people within the Fellowship became a productive struggle encouraging them to try new things, take a new perspective and step beyond their comfort zone. Part of the social learning of the Fellowship group was that they 'problem solved' together, learning as much from each other as they did from faculty on the programme (Chalkin, 2003; Vygotsky, 1978).

The participatory nature of the Fellowship (Renedo & Marston, 2014) was valued; the process of bringing the group together both shapes and is shaped by the group. The flattened hierarchy enabled a range of professions and patients to join as equal voices (Berwick & Nolan, 1998). This was achieved by faculty facilitation ensuring clear set ground rules and management to prevent one voice (patient or professional) from dominating the groups. The Fellowship appears to be an example in practice of the concept of social learning, of learning better together, of learning more through being exposed to different perspectives (D'Amour & Oandasan, 2005; Fletcher et al., 2017; Jones & Issroff, 2005). This helps our understanding of how collaborative learning theory can support interprofessional education, with the Fellowship being a pragmatic example of how both collaborative learning and interprofessional education can benefit quality improvement efforts within healthcare (Barr et al., 2005; Oandasan & Reeves, 2005; Shojania et al., 2004).

In bringing together a diverse range of individuals, the Fellowship faculty faced a number of pedagogical challenges to ensure that all participants gained what they needed from the Fellowship. These fell into two themes: 1) the diversity of formal educational attainment, and 2) the diversity of experiences and perspectives.

Firstly, the pedagogical challenge of bringing together individuals with a wide ranging set of educational levels required thoughtful planning. Some fellows had completed PhDs, or had years of experience in their careers; others had little formal education or were newly qualified and therefore a range of facilitation techniques were used to ensure that participants all felt on a level playing field in terms of contribution and attainment. These techniques included finding common ground, by discussing subjects outside of healthcare, as well as ensuring that all participants were able to contribute to discussions. The curriculum of the programme, quality improvement, itself advocates techniques to flatten hierarchies and problem solving, thus enabling 'double loop learning' (Argyris, 1991) within the participant groups.

Secondly, as the findings suggested, Fellows brought a diverse range of perspectives. In some cases, the nature of these backgrounds and the topics discussed led to often

heated debate, which participants reported they found difficult but ultimately very valuable. These discussions required active management by Fellowship faculty. Faculty developed skills in managing these situations by acknowledging consciously that the process may be challenging yet productive, and actively managing expectations on this issue.

This study has three main areas of limitations. Firstly, the research has concentrated on participants' self-reported perceptions of the programme through surveys and interviews, rather than independent observations of the interactive Fellowship sessions. Participants also volunteered to engage with the programme and therefore may be generally more open to collaborative learning approaches. Secondly, several authors are actively involved in facilitating the Fellowship programme and therefore had the potential to have bias in conducting this study. This risk was mitigated by having researchers independent to the Fellowship conduct the interviews and analysis. Thirdly, there are limitations on the generalizability of the research due to the small sample size, and that the data were gathered from a single setting.

Concluding comments

This study has indicated that a collaborative learning approach, where patients and professionals learn together, is effective in developing skills in quality improvement. There are real benefits to patients and professionals learning together on a formal training programme. Of particular benefit is the ability of individuals to see the day-to-day real world problems they face from a number of different perspectives which may not confer with their world view. This may be a challenging process but one that appears ultimately rewarding to participants. Our case indicated the potential value in opening up previously restricted learning opportunities as widely as possible, including patients and carers. Further cases, and empirical research, are needed to further inform this under explored and potentially beneficial area. Specifically, further research is needed into the processes by which learning occurs, such as through observational work of the interactive sessions, and by analysing how participants interact outside of these sessions (e.g. through social network analysis). In addition, further work is needed to evaluate the impact of the programme on participants and their work in quality improvement following the Fellowship, thus improving our understanding of how collaborative learning can contribute to quality improvement processes in healthcare.

Note

1. We use the term 'collaborative learning' rather than 'interprofessional learning' throughout (except when referring to specific literature) to reflect working and learning relationships not only between a range of professionals but also patients, carers and members of the public with interests in improving healthcare services.

Acknowledgments

The authors would like to acknowledge all the individuals who have completed the CLAHRC NWL Improvement Leader Fellowship programme for their enthusiastic participation and help in improving the programme and contributing to this research. The authors would like to thank all those who contributed to teaching and mentoring on the programme, including Ruth Barnes who worked with CLAHRC NWL to establish and deliver the programme in 2010 until 2013. We gratefully acknowledge the help and support of Rachel Matthews, Vimal Sriram, and Meerat Kaur who contributed comments on the article and have been invaluable in supporting patients and patient fellows throughout the programme. We gratefully acknowledge the staff who have supported the running of the fellowship including Hayley Ware (nee Bray, Ronnie Daniel and Lucy Ryan).

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the writing and content of this article. The views expressed in this publication are those of the authors and not necessarily those of the NHS, the NIHR, or the Department of Health.

Funding

This article presents independent research commissioned by the National Institute for Health Research (NIHR) under the Collaborations for Leadership in Applied Health Research and Care (CLAHRC) programme for North West London.

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References

Anderson, E., Gray, R., & Price, K. (2017). Patient safety and interprofessional education: A report of key issues from two interprofessional workshops. *Journal of Interprofessional Care*, *31*(2), 154–163. doi:10.1080/13561820.2016.1261816

Andriessen, J., Baker, M., & Suthers, D. (2013). Arguing to learn: Confronting cognitions in computer-supported collaborative learning environments. In J. Andriessen, M. Baker, & D. Suthers(Eds.), *Computer-supported collaborative learning series (Vol. 1)*. Netherlands: Springer Science & Business Media. http://www.springer.com/gp/book/9781402013829

Argyris, C. (1991). Teaching smart people to learn. *Harvard Business Review*, *69*(3), 99–109.

Barber, R., Beresford, P., Boote, J., Cooper, C., & Faulkner, A. (2011). Evaluating the impact of service user involvement on research: A prospective case study. *International Journal of Consumer Studies*, *35*(6), 609–615. doi:10.1111/j.1470-6431.2011.01017.x

Barkley, E., Cross, K. P., & Major, C. H. (2004). *Collaborative learning techniques: A handbook for college faculty* (1st ed.). New York, USA: Jossey-Bass.

Barr, H., Helme, M., & D'Avray, L. (2011). Developing interprofessional education in health and social care courses in the United Kingdom. paper 12. *The higher education academy, health sciences and practice*. Retrieved from www.health.heacademy.ac.uk

Barr, H., Koppel, I., Reeves, S., Hammick, M., & Freeth, D. (2005). *Effective interprofessional education: Argument, assumption, and evidence*. Oxford, UK: Blackwell Publishing.

Barriball, K. L., & While, A. (1994). Collecting data using a semi-structured interview: A discussion paper. *Journal of Advanced Nursing*, *19*, 328–335. doi:10.1111/j.1365-2648.1994.tb01088.x

Batalden, P. B., & Davidoff, F. (2007). What is "quality improvement" and how can it transform healthcare? *Quality and Safety in Health Care*, *16*(1), 2–3. doi:10.1136/qshc.2006.022046

Becker, E., & Schell, K. (2017). Understanding, facilitating, and researching interprofessional education. *Respiratory Care*, *62*(7), 999–1000. doi:10.4187/respcare.05678

Berwick, D. M., & Nolan, T. W. (1998). Physicians as leaders in improving health care: A new series. *Annals of Internal Medicine*, *128*(4), 289–292. doi:10.7326/0003-4819-128-4-199802150-00008

Bouillion, L. M., & Gomez, L. M. (2001). Connecting school and community with science learning: Real world problems and school–community partnerships as contextual scaffolds. *Journal of Research in Science Teaching*, *38*(8), 878–898. doi:10.1002/tea.1037

Brandt, B., Lutfiyya, M. N., King, J. A., & Chioreso, C. (2014). A scoping review of interprofessional collaborative practice and education using the lens of the Triple Aim. *Journal of Interprofessional Care*, *28*, 393–399. doi:10.3109/13561820.2014.906391

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, *18*(1), 32–42. doi:10.3102/0013189X018001032

Brown, P. C., Roediger, H. L., & McDaniel, M. A. (2014). *Make it stick: The science of successful learning* (1st ed.). Cambridge, MA: Harvard University Press.

Bruner, J. S. (1977). *The process of education* (2nd ed.). Cambridge, MA; London, England: Harvard University Press.

Busari, J., Moll, F., & Duits, A. (2017). Understanding the impact of interprofessional collaboration on the quality of care: A case report from a small-scale resource limited health care environment. *Journal of Multidisciplinary Healthcare*, *10*(10), 227–334. doi:10.2147/JMDH.S140042

Caley, L. (2006). *Learning for health improvement*. Oxford, UK: Radcliffe Publishing.

Carter, S., Garside, P., & Black, A. (2003). Multidisciplinary team working, clinical networks, and chambers; opportunities to work differently in the NHS. *Quality Safety in Health Care*, *12*(1), 25–28. doi:10.1136/qhc.12.suppl_1.i25

Chalkin, S. (2003). *The zone of proximal development in Vygotsky's Analysis of learning instruction*. Cambridge, UK: Cambridge University Press.

D'Amour, D., & Oandasan, I. (2005). Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept. *Journal of Interprofessional Care*, *19*(1), 8–20. doi:10.1080/13561820500081604

Delucchi, M. (2006). The efficacy of collaborative learning groups in an undergraduate statistics course. *College Teach*, *54*(2), 244–248. doi:10.3200/CTCH.54.2.244-248

Domecq, J. P., Prutsky, G., Elraiyah, T., Wang, Z., Nabhan, M., Shippee, N., & Murad, M. H. (2014). Patient engagement in research: A systematic review. *Health Services Research*, *14*, 89. doi:10.1186/1472-6963-14-89

Donato, R., & McCormick, D. (1994). A sociocultural perspective on language learning strategies: The role of mediation. *Modern Languages Journal*, *78*(4), 453–464. doi:10.1111/j.1540-4781.1994.tb02063.x

Dückers, M. L. A., Groenewegen, P. P., & Wagner, C. (2014). Quality improvement collaboratives and the wisdom of crowds: Spread explained by perceived success at group level. *Implementation Science*, *9*, 91. doi:10.1186/s13012-014-0091-2

Ferlie, E. B., & Shortell, S. M. (2001). Improving the quality of health care in the United Kingdom and the United States: A framework for change. *Milbank Quarterly*, *79*(2), 281–315. doi:10.1111/milq.2001.79.issue-2

Fletcher, S., Whiting, C., Boaz, A., & Reeves, S. (2017). Exploring factors related to the translation of collaborative research learning experiences into clinical practice: Opportunities and tensions. *Journal of Interprofessional Care*, *31*(4), 543–545. doi:10.1080/13561820.2017.1303464

Fraser, S., & Greenhalgh, T. (2001). Coping with complexity: Educating for capability. *British Medical Journal, International Edition*, *323* (7316), 799–803. doi:10.1136/bmj.323.7316.799

Gibson, A., Britten, N., & Lynch, J. (2012). Theoretical directions for an emancipatory concept of patient and public involvement. *Health*, *16* (5), 531–547. doi:10.1177/1363459312438563

Godfrey, M. M. (2013). *Improvement capability at the front lines of healthcare helping through leading and coaching. Jonkoping University, school of health sciences* (PhD thesis). University of Jönköping, Sweden. Available from Intellecta Infolog. (urn: nbn:se:hj:diva-21751)

Godfrey, M. M., Andersson Gare, B., & Nelson, E. C. (2014). Coaching interprofessional health care improvement teams: The coachee, the coach and the leader perspectives. *Journal of Nursing Management*, *22* (4), 452–464. doi:10.1111/jonm.12068

Grabinger, S., & Dunlap, J. C. (2016). *Rich environments for active learning: A definition*. University of Colorado. Retrieved from http://www.researchinlearningtechnology.net/

Greenhalgh, T. (2001). Computer assisted learning in undergraduate medical education. *British Medical Journal*, *322*, 40–44. doi:10.1136/bmj.322.7277.40

Gwee, M. C. (2009). Problem-based learning: A strategic learning system design for the education of healthcare professionals in the 21st century. *The Kaohsiung Journal of Medical Sciences*, *25*(5), 231–239. doi:10.1016/S1607-551X(09)70067-1

Holmes, B. J., Schellenberg, M., Schell, K., & Scarrow, G. (2014). How funding agencies can support research use in healthcare: An online province-wide survey to determine knowledge translation training needs. *Implementation Science*, *9*, 71. doi:10.1186/1748-5908-9-71

Irvine, R., Kerridge, I., McPhee, J., & Freeman, S. (2002). Interprofessionalism and ethics: Consensus or clash of cultures? *Journal of Interprofessional Care*, *16*, 199–210. doi:10.1080/13561820220146649

Jackson, N. (2006). Workbased learning in primary care: Report of the Asia pacific regional conference. *Work Based Learning in Primary Care*, *4*, 92–96.

Jones, A., & Issroff, K. (2005). Learning technologies: Affective and social issues in computer-supported collaborative learning. *Computer Education*, *44*(4), 395–408. doi:10.1016/j.compedu.2004.04.004

Kagan, S., & Kagan, M., Eds. (1994). The structural approach: Six keys to cooperative learning. In S. Sharan (Ed.), *Handbook of cooperative learning methods*, (1st ed.). Westport, CT, USA: Greenwood Press.

Lantolf, J. P., & Pavlenko, A. (1995). Sociocultural theory and second language acquisition. *Annual Review of Applied Linguistics*, *15*, 108–124. doi:10.1017/S0267190500002646

Lantolf, J. P., & Thorne, S. L. (2006). *Sociocultural theory and the genesis of second language development*. Oxford, UK: Oxford University Press.

Lee, C. (2017, March). *Living with oxygen*. Retrieved from http://www.hilltribe.tv/?portfolio=living-with-oxygen-film-production

Lucas, B., & Nacer, H. (2015). *The habits of an improver*. (B. Lucas & H. Nacer, Eds.). London: The Health Foundation.

Mittman, B. S. (2004). Creating the evidence base for quality improvement collaboratives. *Annals of Internal Medicine*, *140*(11), 897–901. doi:10.7326/0003-4819-140-11-200406010-00011

National Institute for Healthcare Research. (2015). Going the Extra Mile: Improving the nation's health and wellbeing through public involvement in research. *The final report and recommendations to the Director General Research and Development/Chief Medical Officer Department of Health of the 'Breaking Boundaries' strategic review of public involvement in the National Institute for Health Researc*h. UK government, NIHR, London, UK.

Ocloo, J., & Matthews, R. (2016). From tokenism to empowerment: Progressing patient and public involvement in healthcare improvement. *BMJ Quality & Safety*, *25*(8), 626–632. doi:10.1136/bmjqs-2015-004839

Olson, R., & Bialocerkowski, A. (2014). Interprofessional education in allied health: A systematic review. *Medical Education*, *48*(3), 236–246. doi:10.1111/medu.12290

Oandasan, I., & Reeves, S. (2005). Key elements for interprofessional education. part 1: The learner, the educator and the learning context. *Journal of Interprofessional Care*, *19*(1), 21–38. doi:10.1080/13561820500083550

Pizzo, E., Doyle, C., Matthews, R., & Barlow, J. (2015). Patient and public involvement: How much do we spend and what are the benefits? *Health Expectations*, *18*(6), 1918–1926. doi:10.1111/hex.12204

Plsek, P., & Greenhalgh, T. (2001). The challenge of complexity in health care. *British Medical Journal*, *323*, 625. doi:10.1136/bmj.323.7313.625

Pollard, K. C., Miers, M., & Thomas, J. (2010). *Understanding interprofessional working in health and social care: Theory and practice*. Basingstoke, UK: Palgrave.

Powell, A. E., & Davies, H. T. O. (2012). The struggle to improve patient care in the face of professional boundaries. *Social Science & Medicine*, *75*(5), 807–814. doi:10.1016/j.socscimed.2012.03.049

Prey, J., Woollen, J., Wilcox, L., Sackeim, A., Hripcsak, G., Bakken, S., & Vawdrey, D. (2014). Patient engagement in the inpatient setting: A systematic review. *Journal of American Medical Informatics Association*, *21*(4), 742–750. doi:10.1136/amiajnl-2013-002141

Reed, J. E., McNicholas, C., Woodcock, T., Issen, L., & Bell, D. (2014). Designing quality improvement initiatives: The action effect method, a structured approach to identifying and articulating programme theory. *BMJ Quality & Safety*, 23, 1040–1048. doi:10.1136/bmjqs-2014-003103

Reeves, S., Palaganas, J., & Zierler, B. (2017). An updated synthesis of review evidence of interprofessional education. *Journal of Allied Health*, *46*(1), 56–61.

Renedo, A., & Marston, C. (2014). Spaces for citizen involvement in healthcare: An ethnographic study. *Sociology*, 1–17. doi:10.1177/0038038514544208

Renedo, A., Marston, C., Spyridonidis, D., & Barlow, J. (2014). Patient and public involvement in healthcare quality improvement: How organisations can help patients and professionals to collaborate. *Public Management Review*, *17*(1), 1–18. doi:10.1080/14719037.2014.881535

Ritchie, J., Lewis, J., McNaughton Nicholls, C., & Ormston, R., (Eds). (2003). *Qualitative research practice: A guide for social science students and researchers* (2nd ed.). London, UK: Sage. ISBN9781446209127

Schouten, L., Hulscher, M., Everdingen, J., Huijsman, R., & Grol, R. (2008). Evidence for the impact of quality improvement collaboratives: Systematic review. *British Medical Journal*, *336*(7659). doi:10.1136/bmj.39570.749884.BE

Shojania, K. G., McDonald, K. M., & Wachter, R. M. (Eds.). (2004). Closing the quality gap: A critical analysis of quality improvement strategies: Toward a theoretic basis for quality improvement interventions. *Vol. 1: Series Overview and Methodology (Technical Reviews, No. 9.1)*. Agency for Healthcare Research and Quality (US): Rockville, MD. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK43917/

Staniszewska, S., Adebajo, A., Barber, R., Beresford, P., Brady, L., Brett, J., & Williamson, T. (2011). Developing the evidence base of patient and public involvement in health and social care research: The case for measuring impact. *International Journal of Consumer Studies*, *35*(6), 628–632. doi:10.1111/j.1470-6431.2011.01020.x

Staveley, I., & Sullivan, P. (2015). We need more guidance on shared decision making. *British Journal of General Practice*, *65*(641), 663–664. doi:10.3399/bjgp15X688045

Strauss, A. L., & Corbin, J. (1990). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.

Taylor, M., McNicholas, C., Nicolay, C., Darzi, A., & Bell, D. (2014). Systematic review of the application of the plan–do–study–act method to improve quality in healthcare. *BMJ Quality & Safety*. First Published Online. *11*(September), 2013. doi:10.1136/bmjqs-2013-001862

Toiviainen, H., & Kira, M. (2017). From struggles to resource gains in interprofessional service networks: Key findings from a multiple case study. *Journal of Interprofessional Care*, *31*(4), 479–486. doi:10.1080/13561820.2017.1301898

Trimbur, J. (1989). Consensus and difference in collaborative learning. *College English*, *51*(6), 602–616. doi:10.2307/377955

Vince, R. (2004). Action learning and organizational learning: Power, politics and emotion in organizations. *Action learning*: Research and Practice, *1*(1), 63–78.

Vygotsky, L. (1997). *Interaction between learning and development*. New York, USA: W H Freeman and Company.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1987). Thinking and speech. In R. W. Rieber, & A. S. Carton (Eds.), *Thinking and speech. in the collected works of L.S. Vygotsky, volume 1: Problems of general psychology* (pp. 39–285). New York, USA: Plenum Press.

Wassa, R., Harland, T., & Mercera, A. (2011). Scaffolding critical thinking in the zone of proximal development. *Higher Education Research and Development*, *30*(3), 317–328. doi:10.1080/07294360.2010.489237

Weggelaar-Jansen, A. M., Van Wijngaarden, J., & Slaghuis, S. S. (2015). Do quality improvement collaboratives' educational components match the dominant learning style preferences of the participants? *BMC Health Services Research*, *15*, 239. doi:10.1186/s12913-015-0915-z

Wertsch, J. V. (1993). *Voices of the mind: A sociocultural approach to mediated action*. Cambridge, MA, USA: Harvard University Press.

West, C., Graham, L., Palmer, R., Miller, M., Thayer, E., Stuber, M., … Carney, P. (2016). Implementation of interprofessional education (IPE) in 16 U.S. medical schools: Common practices, barriers and facilitators. *Journal of Interprofessional Education and Practice*, *4*, 41–49. doi:10.1016/j.xjep.2016.05.002