

An evaluation of a programme of problem-based learning within a clinical psychology doctorate

Emma Griffith, Catherine Butler, Jenny Csecs & Cara Davis

Problem-Based learning (PBL) is a widely used teaching method in UK Clinical Psychology training. This study considers the experience of using PBL as part of the University of Bath's Doctorate in Clinical Psychology. Questionnaire and focus group analyses suggest PBL was predominantly experienced as useful by trainees when completed during the first year of clinical training, especially in terms of skill development around leadership and team working; which was maintained at two-year follow-up when the same cohort of trainees completed an adapted version of the questionnaire during their third year of training. Trainees suggested some difficulties with PBL (e.g. anxieties concerning the lack of a teacher) and suggested improvements (e.g. to timetabling and the case vignette), which have helped sculpt new PBL teaching for subsequent trainees. This study has its limitations, and future research is recommended to further evaluate the use of PBL within clinical psychology training courses nationally.

Keywords: Problem-based learning, clinical psychology training, leadership.

Introduction

PROBLEM-BASED LEARNING (PBL) was developed within medical teaching over 40 years ago (Stedmon et al., 2006). It has since been employed in multiple settings, including secondary schools and professional training (Hmelo-Silver, 2004), and is a useful methodology for interdisciplinary education (e.g. Hall & Weaver, 2001). PBL can be defined as 'a group-based approach to the understanding and resolution of a "problem" (i.e. any scenario, situation or other issue) which requires additional learning by the individuals that is shared and discussed in order to produce a group result' (Stedmon et al., 2005, p.53). Small groups facilitate student-centered learning where real-world clinical problems provide focus and stimulus for collaborative, self-directed acquisition of information and development of clinical problem-solving skills (Hmelo-Silver, 2004; Makaram, 1995). Barrows and Kelson (1995, as cited in Hmelo-Silver, 2004, p.240) suggest a number of important goals of PBL for participants/learners: to develop a knowledge base that is broad and

flexible, and to become problem-solvers with 'self-directed, lifelong learning skills' who collaborate effectively and are 'intrinsically motivated to learn'.

PBL has been extensively adopted across a range of fields, including medical education (e.g. nurses, paramedics and radiologists) and higher education (Savery, 2015). Recently, Walker, Leary and Lefler (2015) conducted a meta-analysis of PBL across different education levels and disciplines of study. Using quantitative outcomes focused on either student learning or their reasoning process, positive outcomes were specifically shown for the use of PBL in social sciences ($g = 0.30$, 6 studies included) and medical education. However, it is important to note the findings were not as marked ($g = 0.15$) when all the 133 studies were included. One included study comprised of implementing PBL in a general psychology course (Willis, 2002). After this teaching, PBL students' grades were found to be better than those who received traditional lectures (small-medium effect size, $d = 0.35$, Walker & Leary, 2009; Willis, 2002). Willis (2002) also found

that students reported an increase in their ability to: work as a team, take an active role and solve real-world problems. This research suggests PBL to be effective and appropriate in the field of psychology.

The clinical psychology Leadership Development Framework (DCP, 2010), note the strategic government leadership agenda and emphasise the need for clinical psychologists to have professionally-relevant and competent leadership skills. Onyett (2011) states that 'effective teamworking is associated with... clear and effective leadership' (p.3). Therefore, it would appear important to embed team working and leadership skills development into clinical psychology training from the outset, thus providing a foundation on which to build throughout training and post-qualification. PBL offers opportunities for small group working and improving team working skills (Willis, 2002), reflective of team working within clinical settings. It provides a key opportunity for trainees to take a leadership role, to experientially explore theory-practice links (Stedmon et al., 2006) and reflect on process and outcome of the experience.

PBL within the Doctorate in Clinical Psychology at the University of Bath

UK Clinical Psychology training is a taught doctorate. The Bath course is committed to empirically-grounded practice, with an emphasis on developing reflection, creativity and leadership through research-led teaching and an adult-learner model of traditional, experiential and self-directed learning (University of Bath, 2014). The PBL teaching series emphasises these areas and complements taught lectures by offering opportunities for deeper exploration of key topics. In terms of content, PBL case studies are tailored to the placement and teaching block the trainees are currently experiencing (e.g. adults of working age). Therefore, it is planned that trainees will draw on the wider teaching they receive and trainees are required to evidence that they have drawn on placement learning and theory in the presentations.

During 2014–2015, eight PBL sessions were timetabled across the first year of training. Trainees were given the PBL topic and information on a fictitious case study at the start of each session to ensure no additional learning demands prior to the day. Trainees separated into three groups of five or six with an allocated tutor for consultation as required. Each group selected a leader for 2.5 hours of self-directed learning (SDL), who then gave a ten minute presentation on the session topic. Following the presentation, each team met for reflective discussions, with their tutor asking questions that were guided by the Intended Learning Outcomes, after which a whole group discussion was held. Tutors completed formative assessment feedback forms, which were then given to group leaders, along with written feedback from their team. Clinical Psychology teaching at Bath is improved through routine collection and analysis of trainee feedback after each session. The PBL teaching series for 2014–2015 incorporated four sessions addressing core competencies (assessment, formulation, intervention, evaluation), reflective practice, two publication-based exercises (preparing a single-case experimental design for publication and reviewing this for a journal) and two covering professional issues. Prior to the completion of PBL, trainees received an introduction to PBL that lasted one hour. This session included defining PBL, the goals of PBL and its key elements, and an experiential exercise concerning skills development. The remainder of the session focused on the structure of PBL at Bath.

Although many UK Clinical Psychology doctoral courses utilise PBL, its evidence base is currently limited (e.g. Stedmon et al., 2006). The experience of PBL in Clinical Training has been explored and reflected upon (e.g. Griffith et al., 2006; Keville et al., 2009, 2013; Nel et al., 2008) and there appears to be some utility of PBL in clinical training (e.g. Huey, 2001). Stedmon and colleagues (2006) evaluated PBL on such a course, and found it well received by staff and trainees in promoting clinical skills acqui-

sition. However, Baillie et al. (2011) note few randomised controlled trials evaluating 'teaching methods for health professionals' (p.90) and little research relevant to clinical psychology training and PBL. Furthermore, the exploration of trainees' experience of PBL in Clinical Training has predominantly comprised of written reflections (Keville et al., 2009, 2013), such that there is a need for multimodal inspection of trainees' experiences (e.g. through utilising qualitative and quantitative methods) to investigate whether results are corroborated. It is therefore essential to evaluate PBL in Clinical Psychology training, in order to inform evidence-based teaching practice.

Research aims

This study aimed to answer the following three questions:

1. Do Clinical Psychology trainees find PBL a useful teaching method on the University of Bath Doctoral Programme?
2. How do trainees understand the skills they learn from PBL?
3. How do trainees find their experience of the PBL leadership role?

Method

Design

A repeated measures design was employed, using mixed methods of analysis of questionnaire and focus group data. A questionnaire developed for purpose was completed by trainees during their first term of the first year of clinical training after each PBL session. An adapted version of the same questionnaire was then completed by the same cohort of trainees during the first term of their final (third) year of training (two years later). Ethical approval was gained from the University of Bath and the study was awarded funding by the University of Bath Faculty Teaching Development Fund.

Participants

Eligible participants were 17 Clinical Psychology Trainees (16 female, 1 male) taking the first year PBL teaching unit in 2014–2015. Sixteen participants gave written consent to be part of the study at baseline, with questionnaires being completed anonymously. Fifteen participants from the same cohort completed the questionnaires at the two-year follow-up.

Measures

PBL Questionnaire

A ten-item questionnaire was developed for purpose, with four questions using a five point Likert Scale (1=Really useful, 2= Mostly useful, 3= Unsure, 4=Not very useful, 5=Not useful at all). Questions focused on learning outcomes, trainees' experiences of PBL as a teaching method, how it compared to more traditional lectures and whether it informed their ability to work in multidisciplinary team settings. One 'yes' or 'no' question asked whether trainees understood the rationale for taking the leadership role. Further questions invited qualitative responses regarding the skills PBL might target, suggested improvements, and experience and perceived importance of the leadership role in professional development.

Adapted follow-up questionnaire

The questionnaire was adapted at follow-up, with a seven item questionnaire (with one item having 8 sub-parts) developed for purpose. Five questions used the five point Likert Scale noted above or a further Likert (1=Very effective – 5=Not effective at all). Questions followed the format above, with one question inviting qualitative responses regarding the effectiveness of PBL teaching (See Table 2).

Procedure

All potential participants were given information about the study and opportunities to ask questions before completing consent forms. Participants were asked to complete the anonymous questionnaire after each

of the eight PBL sessions in the first term of training. Trainees were invited to attend a focus group after PBL session eight to discuss their experience and learning from PBL. The focus group used a semi-structured interview schedule that focused on two areas: group processes e.g. 'What was your experience of being part of the PBL group?' and skills e.g. 'What skills do you feel you learnt during the PBL session(s)?'. Six trainees attended the focus group, which was facilitated by a Research Assistant (RA) not involved in the PBL programme, who had been briefed about function and content. The RA represented an impartial view to encourage trainees to speak freely. Trainees were then given an information sheet and consent form and invited to complete the follow-up questionnaire during the first term of their third year of training.

Data analysis

The Likert scale data and free text questionnaire responses were analysed using Mann-Whitney U tests and a realist inductive Thematic Analysis following the steps outlined by Braun & Clarke (2006): the data was read and re-read to be fully familiar with it before analysis began; initial codes were generated line-by-line from the transcript; codes were then sorted into themes that were reviewed and revised until a final thematic map was developed and theme names finalised. This approach was also taken to analyse the verbatim transcript of the focus group: the themes and sub-themes derived from the whole transcript were driven by the data, rather than by the questions asked. The trustworthiness of data analysis was ensured by following the principles of Elliott, Fischer and Rennie (1999): the participants have been clearly described to situate the sample; results are grounded in examples directly from the data; and we hope this paper provides a coherent account that resonates with readers. In addition, transparency about the position of the author (CB) who conducted the focus group analysis is provided as follows: CB designed and ran one of the PBL sessions

(on professional issues) but was not involved in designing the whole series and was new to PBL as a teaching method prior to this research starting.

Results from questionnaires

Quantitative analysis

The mean scores for trainees' ratings on four questions that considered the usefulness of PBL are outlined in Table 1 at baseline and Table 2 at follow-up.

Baseline

The three Wilcoxon signed-rank tests conducted for the questions considering the usefulness of PBL revealed no significant difference between the first and final sessions for each of the following:

- How useful PBL was as a teaching method $T = 41.5$, $p = .14$ ($N=16$ at baseline and $N=15$ at follow-up).
- How useful PBL was compared to traditional lectures, $T = 37$, $p = .33$ ($N=16$ at baseline and $N=15$ at follow-up).
- How useful PBL was to inform their ability to communicate and work in multidisciplinary settings $T = 18$, $p = 1$ ($N=13$).

This indicates that trainees' Likert scale ratings that PBL was 'Mostly useful' following the first session were maintained at the final session.

Follow-up

Two Friedman's ANOVAs considered the usefulness of PBL at two-year follow-up. The first indicated no significant difference between ratings trainees made of how useful PBL was as a teaching method compared to traditional lectures over the first and final PBL sessions and at follow-up, $\chi^2(2) = 1.90$, $p = .39$. The second also revealed no significant difference was found between the ratings trainees made of how useful PBL was to inform their ability to communicate and work in multidisciplinary settings, $\chi^2(2) = 1.23$, $p = .54$. This indicates trainees gave similar ratings of usefulness for PBL at the first and final sessions, which was maintained at the two-year follow-up.

Table 1: Mean scores for trainee ratings following unidisciplinary PBL sessions

Question	First session M (sd)	Final session M (sd)
Were the learning outcomes of the PBL sessions met? (1 Fully met – 5 Completely unmet)	2.06 (.93)	2.21 (.69)
What was your experience of PBL as a teaching method? (1 Really useful – 5 Not useful at all)	1.72 (.58)	2.25 (.94)
How does PBL as a teaching method compare to your experience of more traditional lectures? (1 Really useful – 5 Not useful at all)	2.09 (.69)	2.47 (.86)
Has your experience of PBL been useful to inform your ability to communicate and work in multidisciplinary settings? (1 Really useful – 5 Not useful at all)	2.11 (.71)	2.19 (.63)

Table 2: Mean scores for trainee ratings at 2-year follow-up of PBL sessions

Question	Mean (SD)
How effective has PBL been in helping you develop skills in the following areas (1 Very effective – 5 Not effective at all):	
a) Synthesising theory-practice links	2.54 (.66)
b) Working effectively in teams	1.77 (.83)
c) Recognising the importance of the leadership role	2.08 (.95)
d) Creating and succinctly communicating an informative, professional presentation under time pressure	1.92 (1.04)
e) Explaining the professional and ethical value base in clinical psychology and its implications for clinical practice	2.69 (.63)
f) Applying cultural & societal contextual knowledge to the understanding of clinical and systemic issues within a group context	2.62 (.65)
g) Critically evaluating and applying empirically grounded treatment models to clinical cases	2.69 (.95)
How effective do you think PBL was as a teaching method? (1 Really useful – 5 Not useful at all)	2.69 (.63)
How does PBL as a teaching method compare to your experience of more traditional lectures? (1 Really useful – 5 Not useful at all)	2.58 (.64)
Has your experience of PBL been useful to inform your ability to communicate and work in multidisciplinary settings? (1 Really useful – 5 Not useful at all)	2.54 (.66)
How useful was the experience of a taking a leadership role in terms of your professional development? (1 Really useful – 5 Not useful at all)	2.23 (1.01)

Qualitative analysis

What trainees learnt from PBL

This overarching theme had seven subthemes: leadership, team working, learning over time, professional development, a new way of learning and suggested improvements.

Leadership

The majority of trainees reported positive experiences of working within PBL groups and taking the leadership role. They reported the PBL leadership experience allowed them to learn from each other and helped them acquire important skills, such as how to lead teams and delegate:

It was really helpful – it made me think a lot about leadership – how to ask people to do things.

How to listen & motivate as well as take control when needed.

It really helped having such a supportive, hard-working team! I had to moderate between different points of view between group members, which was useful practice.

In this reflection upon what they learnt from the role, trainees reported learning important skills such as pausing to think before they spoke and that this would allow them to listen more closely to others:

Be receptive, encouraging and listen but you also need to direct and guide. Make sure you pause to gather your own thoughts so that you can helpfully assimilate others.

The PBL leadership role was noted as having direct applicability to the clinical psychology role in practice:

It will definitely be useful... as leadership is a core competency and having active experience of the role in a learning context is a good way of complementing theoretical learning.

Team working

The group working aspect of PBL was seen as a useful opportunity to access multiple viewpoints and approaches to help them develop clinical skills and knowledge, as well as what is needed to be an effective multidisciplinary team member:

Gaining strengths/info/understanding from others' strengths.

Could see how different styles might facilitate or block progress.

Improving my clinical skills through vicarious learning from other group members' experiences.

Improve relevant skills for multidisciplinary working such as collaborative discussion and communication.

The need for collaboration was also highlighted and the group was seen as influential in facilitating the leadership role:

Supporting others to undertake their leadership role effectively.

Learning over time

Many participants seemed to find that PBL became more useful over time, and the way PBL was structured (with consistent team-working alongside teaching and placements) became more relevant to the learning process.

...I have really appreciated the way PBL has been structured... as the weeks have gone on we have been able to use what we have learned to inform what we do.

I feel that the more time I'm spending on placement is helping me to appreciate the usefulness of PBL more.

It appeared that trainees' confidence also grew with time:

Over the weeks, I have seen people (including myself) become increasingly confident about synthesising materials & presenting information. It has also increased people's trust in each other on being able to provide good work.

Felt slightly more comfortable taking the leadership role for the 2nd time, especially since group dynamics already more established.

Increasing tolerance for uncertainty.

The way trainees experienced and managed time pressures also seemed to change over the course of PBL:

[Initially] It would be great to have a little more time to put the presentation together – the time limit was quite scary and it felt rushed!

[Later sessions] Timing wasn't such an issue this week. Maybe practice is making us faster!

[regarding developing skills] Time-limited working – being specific and targeted.

Professional development

Trainees suggested that PBL facilitated the growth of various skills relevant to working clinically, such as increasing self-awareness, making theory-practice links and understanding the process of therapy:

It gives me a good idea of what strengths/weaknesses I have in groups etc. and highlights what I can work on/do differently when working with different people.

Making theory-practice links in relation to a case study.

Understanding of progression from assessment to formulation to intervention -> learning how to 'do therapy'.

Stress and uncertainty associated with the PBL process was considered reflective of the working environment of clinical practice:

Quite stressful but in a healthy way – was good to get a taste of how this dynamic might play out in clinical environments, and to get a sense of own ability to think/communicate clearly in a time-constrained situation.

PBL was seen to begin to address personal needs in this respect and encourage reflection:

Helpful in addressing personal anxieties around this – reflected on use of the role in practice and helpful in exposing to this.

Reflection was also seen as important in overcoming perfectionism in academic and clinical work:

Realising there isn't always a correct answer and that there are different ways to come at the same task/issue/client.

Accepting work can't always be perfect in clinical scenarios.

Reflective skills (comparing own presentation to others and realising you don't have to be too thorough/perfect).

However, despite this praise, one trainee felt uncertain about how PBL was facilitating their skill development:

Unsure if any new skills are being developed in process of PBL, but do find I'm learning new ideas from the different presentations, e.g. the PTSD model.

Suggested Improvements

Trainees reported that PBL was an engaging way to learn:

Really good way to learn that made it more interesting and opened up points for discussion.

However, they also made recommendations for improvements to PBL as a teaching method:

I feel that having a bit more time for the self-directed learning component might allow us to learn a bit more about theory-practice links and present more coherent, reflective ideas.

Trainees made suggestions regarding the structure and timetabling of PBL, for example, having it amongst other relevant teaching and to schedule it later in the term in order to capitalise on the relationship between PBL sessions and learning over time from placement:

Would be more enjoyable if less frequent (e.g. fortnightly).

With the morning (rather than afternoon) sessions seen as a lot better during these first couple of months of teaching when everything is so overwhelming!

In the previous weeks we had been given quite a lot of teaching [on] clinical skills workshops, which really helped for PBL2, and that is the only one I've enjoyed so far.

So we actually have some clinical experience to draw on.

There were mixed reports concerning the case study in terms of weighing up the continuity of following one case, versus fatigue related to repetition of the same information:

I thought working on something over 3 weeks and consolidating learning was really helpful.

I think it would have been more helpful to change the groups and case. I feel there could have been a bit of fatigue within the group about using the same case and I think a change in groups could have been a bit refreshing.

In relation to the feedback received at the end from peers and tutors, trainees spoke about accepting constructive feedback and wanting more feedback during PBL, and specifically from the facilitator, perhaps

more usefully aimed at the group rather than the main focus on the leader:

Would be nice to have follow-up session to evaluate/learn more about what we presented on.

Would be interesting for group processes to be observed by facilitator throughout for feedback/observations that we don't see as group members.

Results from focus groups

Four main themes were drawn from the data, three of these containing subthemes. Pseudonyms are used.

Theme 1: At the beginning...

Participants reflected back to the start of the PBL series, when the new learning style had felt stressful:

Elizabeth the first one, where it was a topic that was more unfamiliar to us and we were all feeling a little bit overwhelmed by the process.

Cynthia it was one of the first sessions and I just felt so overwhelmed by the [leader] task.

However, they reported that this changed with more exposure to PBL:

Fiona it's interesting over time, stress levels have changed.

Elizabeth it has started to feel more natural as we've gone on.

This positive change was associated with increased thoughtfulness about the process of small group working:

Diana We started off and quite often it would be people going quite separately to do different things and actually we were beginning to realise that actually if that doesn't really work and we do actually need to be talking all the time.

Bianca We began to put a bit more thought into what we are

doing and be a bit more reflective and think a bit more about our roles

Theme 2: PBL Structure

The framework of PBL sessions was brought up under a number of different subthemes.

Staying/changing groups

Participants particularly liked sessions where they stayed in the same group to develop different aspects of a problem over time:

Amy I actually felt like we did then start to learn stuff and it was really, really, helpful.

Fiona (when changing groups) stress levels go up a little bit because you have to renegotiate things... you have to justify what you were doing and why to help everyone understand.

Bianca working in the same groups, knowing what people's skills are, so maybe looking to certain people for advice on different things.

However, some also appreciated the different learning that came with changing groups:

Fiona it has been really great evolving with those people, but at the same time, working with different groups really made you realise just how completely different it can be but how it can still work, you can still get really good results but just in a completely different way.

Taking different roles

Another aspect of group structure that participants enjoyed was the chance to take different roles. This subtheme resonates with the Group Dynamics subtheme presented later in this paper. However, in the 'Taking different roles' subtheme participants are focusing on their personal experiences of different roles, rather than the group dynamics this could engender.

Participants spoke about how some of the roles they took were out of their 'comfort zone' (Fiona):

Fiona if maybe you are put in a role you are not so comfortable with or it doesn't feel like a strength of yours, but because of the way that tasks have been delegated that's the last task left.

Many of the participants spoke about this discomfort, in particular for the Leadership role:

Elizabeth a challenge for me is taking that leadership role in terms of presenting, just because that's something that is just less comfortable for me generally...

Cynthia yes, I feel the same, in the past I've done quite a few presentations, doing extra presentations feels okay but it is more the leadership role and just feeling like delegating things to people, and that doesn't sit comfortably with me.

However, participants viewed this experience as a learning opportunity, both in general:

Fiona sometimes it is not until you do something or take a certain role that you realise what you are going to make of it. You can have all these preconceptions about it but until you do it you are not really sure.

And particularly in relation to the role of group leader:

Bianca appreciation for different people types of leadership and different ways of leading the group are what I found really interesting and helpful.

Consolidating learning

Similar to the questionnaire data, participants also commented on the timing of the PBL sessions:

Bianca the last few have been related to what we've been learning so I found it really useful for consolidating.

Theme 3: We all get on so well

The idea that as a cohort they all got on so well came up numerous times from all participants in relation to different subthemes.

Learning from others

Participants actively learnt from each other:

Diana I have actually learnt more about being a leader from watching other people lead ... that's really different to what I did but actually that was really effective. So I think picking up little tips from each other.

Cynthia some people use more humour, others are more formal, some people are more extrovert, others are more introvert and that has been really interesting ... how the different styles can work.

Support

Many of the trainees spoke about the support they felt from each other.

Fiona everyone is there to support the leader and we know they've got to do the presentation at the end so we are trying to help them as much as possible.

This style of support also applied to how they gave each other feedback in reflective groups at the end of exercises:

Cynthia it's put in a way that does not feel horrific.

However, there was a presentation of 'we all get on so well':

Bianca We all get on as course mates, we all respect each other and because we are learning the same things we are coming from the same perspective.

Diana people are so generous in the way they support the leader and certainly, I haven't been in a group where there's felt to be much tension... very little descent, very much kind of support process

held contradictions with that of 'managing group dynamics' (that follows).

Managing group dynamics

As mentioned above, some participants felt that the priority of maintaining the story 'we all get on so well', meant that perhaps opportunities for managing group dynamics and learning negotiation skills were missed:

Amy I quite strongly disagreed with something that somebody was doing and I just didn't really push it because I thought it's just PBL and I am not leader this week, and I would just let them get away with that. In my head I was like, this is quite a massive waste of time, I don't agree with what they are doing... I was really frustrated. How do you deal with that without actually being like, argghh and wanting to throw a book at someone's head. I don't think there is a way you could really test that in this situation when we do get on really well, respect each other.

These skills in expressing discontent without 'not getting on' was picked up on by other participants:

Elizabeth some people are more overt, they will more overtly disagree and they are not afraid to say I don't like this way of working, other people might, you know, internally disagree but might perhaps not think about being able to say that.

However, some participants turned this into a learning opportunity:

Diana I thought people were doing it wrongly... I felt that was quite good for me, it was that kind of thinking, actually, let's just trust this and see what turns up.

Other participants wanted formal teaching on managing these group tensions:

Cynthia maybe do a bit more formal learning around group dynamics and sort of ways of types of leadership or different ways you can do that, different ways of supporting the leader and then maybe taking that learning and see how that works in practice in other PBL sessions.

Elizabeth It would be nice maybe to have some teaching around conflict management and how to pick up signs.

While other participants used the experience for self-learning:

Bianca learning a lot about group dynamics and what makes me feel uncomfortable. I can see when I annoy other people as well.

Cynthia learning how to compromise different people's ways of working and styles... so that the whole team sort of feels alright and no-one really feels left out.

Some participants managed this situation by learning how to 'take a step back':

Diana standing back and thinking, 'Actually, this is different but let's not contradict this, let's just go with it and see what happens'.

Amy in other situations where I've maybe felt a bit of friction, then

actually gone on to realise that I didn't really understand where they were coming from... if I had got my way I might not have discovered that or looked at things in different ways.

What helped Diana do this was identifying with her colleagues:

Diana everyone who ends up on a course like clinical psychology, they are quite bright. People will have often been the person who had quite a big voice where they had worked before, so it is acknowledging that actually everyone else would have been that person as well and possibly you can trust people.

The idea of having a 'big voice' was also reported by Bianca in the acknowledgement that learning to step back was a new skill for her:

Bianca for me taking a step back and learning to be in a supportive role, not necessarily being submissive, not necessarily being leading, but somewhere in between and being heard without being too loud or too quiet.

For other people, stepping back was a strategy employed to manage discomfort of difficult group dynamics:

Diana I think learning to swallow some things as well, I think learning to tolerate some of these discomforts.

Whether it was learning that arose from the PBL process, or the wish for direct teaching on this subject, it was certainly an aspect of PBL that came alive for all participants.

Diana I think in every single feedback form I've said something about group dynamics and

that's what I've taken away...
I suspect that everyone has
written something similar.

Theme 4: Application to practice

Many participants spoke about how PBL helped them learn how to manage time effectively:

Fiona I think PBL is a good way to, kind of, transition from having lots of time to look and think about time, but doing it in that supportive way with other people in the similar situation. I can see how that would be really useful in the future.

In addition, communication skills was highlighted as a learning point:

Fiona communication between people and keeping up good communication between the team.

As previously mentioned in the 'group dynamic theme', many participants learnt about themselves through the process of PBL:

Bianca I have definitely learnt a lot about myself, and in the role I take, how I feel comfortable in a group and what things I am good at.

Within participants' descriptions of their learning from PBL, or in how they managed the process, they provided clear demonstrations of leadership skills:

Cynthia being able to be assertive, but in a sort of respectful way, respecting their different points of view and backgrounds and how to negotiate that.

Other participants also mentioned this delicate negotiation of delegating group tasks or how the group would work together:

Amy you can usually see if someone is a bit uncomfortable with

something or maybe not too happy with what is happening, and it is trying to be sensitive to that when we are in a very time-limited situation and maybe they are not 100% on board with what they are doing, but at the end of the day you've got an hour left and you need someone to do that... it's those kind of diplomacy skills.

The earlier theme of 'managing group dynamics' was also relevant here, as one participant comments:

Cynthia I am also really interested in what the experience would be like if you were working in a team for a long time, like the group dynamic and how that would work.

Other participants emphasised what they learnt from PBL in terms of application to practice:

Elizabeth those time constraints and pressures, can be used in a positive way and you can get quite a lot out of that and that might be something you have to do realistically in your clinical role

Bianca it sat with me really uncomfortably at first, things weren't perfect, but actually it was still okay, it was still good enough. And maybe learning that it doesn't always have to be perfect and in life, when you are working, especially working in the NHS under time pressures, things can't be perfect.

These views contrasted with other views expressed about PBL being artificial:

Amy I would really love to know how... that would play out in

a real life situation, because I didn't have anything invested in it, I just went, Oh well, step back. Whereas I would have liked to have seen... when actually patient care is on the line. You are massively invested and you think someone is making a terrible decision. But it is something that I am aware of, that PBL is kind of artificial.

It was felt that the structure and time pressure of PBL might prevent 'deeper' learning: Elizabeth when we are looking for information, we are very much looking on the surface. Therefore, we are not always getting a real deep understanding of what we are then presenting back and that feels a little bit uncomfortable at times.

Follow-up

Follow-up questionnaires asked trainees to comment on 'other skills' learnt via PBL and provide 'any comments' about PBL. Whilst data were not rich enough to conduct thematic analysis, trainees described PBL as effective and beneficial in terms of group working. They reported that it addressed conflict and was particularly effective at improving leadership skills. One trainee thought the leadership opportunity component of PBL felt artificial. Two trainees offered suggestions for how to improve PBL: more didactic teaching prior to applying skills and fewer sessions in the first year of the course.

Discussion

In relation to the first research question (Do trainees find PBL useful as part of their teaching?) the quantitative analysis revealed trainees found PBL 'mostly useful' at the start and end of the PBL sessions, which was maintained at the two-year follow-up. Whilst perception of usefulness did not increase over time, it did not decrease over the course of

the eight PBL sessions, or at follow-up. Qualitative analyses highlighted the usefulness of the current structure and function of PBL, as well as offering possible improvements. There was a sense that PBL became more useful as teams developed skills in working together and as skills were applied on placement. This supports Keville et al.'s (2009) findings where clinical psychology doctorate trainees described the process of PBL being a journey where skills developed in PBL are subsequently applied in clinical work. The defining features of PBL and its goals (Barrows & Kelson, 1995, cited in Hmelo-Silver, 2004) appeared to be reflected in the results; where shared group experiences encouraged recognition of individual and group strengths, and acquisition of knowledge and skills. For example, this echoes previous research where clinical psychology doctorate Staff reported the value of PBL for making theory-practice links (Stedmon et al., 2006). However, in-depth focus group discussion suggested that PBL may fit with some people's learning styles more than others. For example, while some participants spoke about managing difficult group dynamics as a learning opportunity, other participants found themselves stepping-back from the process and later requested direct teaching on how to handle this. Thus, experiential learners (activists and pragmatists) may thrive in a PBL environment, while theoretical learners may struggle with some of the learning opportunities it presents (Honey & Mumford, 1992). This perhaps reflects trainee's feedback in Stedmon et al. 2006, who also commented on the challenges of managing different learning styles in a group format.

In terms of the second research question (How do trainees understand the skills they learn?) the analysed data suggests that professional development was a core part of the learning trainees took from PBL. 'Letting go of perfectionism' and recognising there are multiple ways to solve problems are useful skills to develop, and reflect the goals of PBL (Barrows & Kelson, 1995,

cited in Hmelo-Silver, 2004). The capacity of PBL as a teaching method to promote both self- and group-reflection is key in trainees' skill development at Bath, with reflective practice being essential to the training of Clinical Psychologists (BPS, 2015). Reflection has consistently been reported to have developed throughout trainees' experiences of PBL (Keville et al., 2009, 2013; Nel et al., 2008). In this study, trainees became aware of their developing skills to rapidly synthesise information to achieve shared group goals within time constraints. Trainees seemed to notice increasing skill development over the course of PBL in terms of time management and tolerating uncertainty, and anxiety associated with the process. Importantly, trainees recognised the skills they were developing in the leadership role and as team members; with leadership skills being important to develop as Clinical Psychologists in Training (DCP, 2010). For example, at follow-up trainees rated PBL as useful in terms of informing their ability to communicate and work in multidisciplinary settings, which was a finding maintained from first- and final- sessions initially. Managing group dynamics was another skill gained through PBL, which was captured in the qualitative analysis however not the questionnaire data, possibly because of the in-depth exploration that a focus group provides generates richer data than questionnaires. However, managing group dynamics seemed to present itself differently compared with previous research. The trainees in Keville et al. (2013) appeared to discuss more about the range of emotions that they felt within the group (ranging from frustration and confusion to fear and futility), as opposed to trainees in this study conceptualising the group more as an opportunity to learn and develop skills rather than reflect on emotional experience. This could be due to the different ways trainees were asked about their experiences of PBL: a written reflective account in Keville et al. (2013) compared with the free-text questionnaires (where previous questions were centred around skill devel-

opment) and focus group in this study. For instance, Williams et al. (2012) suggest that people are more likely to explicitly express emotion in written language. Therefore, this study provides further insight into trainees' experiences of PBL and how it directly relates to their development as practitioners as a result of using both questionnaires and a focus group. In studying the skills trainees consider themselves to have developed, the use of PBL on Clinical Psychology training would appear useful in terms of professional development. Importantly, qualitative data gained at two-year follow-up suggested that group working and addressing conflict were skills trainees learnt from PBL; which would appear important given the work of Clinical Psychologists as members of clinical teams (BPS, 2001).

For the final question, (How do trainees experience taking the leadership role?), this role appears to have been experienced positively. Trainees typically viewed it as useful to begin to explore and reflect upon their leadership styles and skills within the group context. This was also shown in psychology students who reported a perceived increase in their ability to take an active role following PBL (Willis, 2002). However, the growth in leadership has not been discussed as explicitly in previous PBL research in clinical psychology doctorate trainees (Keville et al., 2009, 2013; Stedmon et al., 2006). Although trainees found this role anxiety provoking, possibly related to the assessed nature of the presentation, it was also seen as an important role to experience. This was in line with the BPS Leadership Development Framework (DCP, 2010) and was seen to increase confidence and presentation skills. Trainees recognised the increasing relevance of this experience to the role of Clinical Psychologists within the modern NHS and multidisciplinary team working, and they observed areas of personal and professional development within this role. The power of group dynamics in 'facilitating or blocking progress' was also emphasised, as well as the benefits of experiencing both the leader-

ship role and leadership styles of others. At two-year follow-up trainees continued to report that they thought PBL was helpful in developing and improving leadership skills. This provides support for the use of PBL on doctoral training courses in order to meet BPS leadership accreditation requirements and help trainees fulfill their potential as future leaders.

Outcomes

This study suggests trainees find PBL useful in numerous ways, indicating benefits for use in Clinical Psychology training that are maintained over time. Given the limited evidence-base related to PBL in Clinical training, trainee feedback is essential in tailoring our programme to their professional development needs. Introducing the 'taster' leadership role early in training appeared well received, especially in light of the Leadership Framework for Clinical Psychologists in training (DCP, 2010). With the course now working to embed this leadership component in multiple areas from the first year of training. Trainees identified some difficulties with PBL (including anxieties concerning the lack of a teacher, and whether or not the presentation was 'correct') and suggested some improvements (e.g. fewer PBL sessions in the first year). Suggestions for improvements (relating to timetabling, frequency of sessions and the case study) have informed changes made to the structure of PBL for the next trainee cohort. For example, there are now only four sessions of first year PBL, falling throughout the first year, with two co-lead/presenters in each group; and a different case study for each group. Obtaining feedback via questionnaires is crucial in the ongoing cycle of review and development for PBL teaching at Bath.

Limitations and strengths

The questionnaire was developed for purpose, with no established reliability or validity and the use of non-parametric tests (due to small participant numbers) potentially limits generalisability of findings. The

two-year follow-up elicited qualitative data that was not suitable for formal analysis, although the initial study provided plenty of depth in this respect; with attrition over time decreasing the sample size further. Given the paucity of previous research on the impact of PBL in clinical training, future research could explore trainees' experience of PBL at follow-up in more depth. For example, qualitative methods could be used to elucidate which aspects of PBL seemed most useful for trainees in terms of developing their skills over time. Furthermore, course staff conducting the evaluation may have biased trainees (new to clinical training) towards positive feedback. However, anonymised questionnaires and a neutral (Research Assistant) focus group facilitator were employed to address this. Further studies might emphasise staff participation to ensure this important perspective is represented.

It is worth highlighting the usefulness of using mixed methods in this research. The theme of 'managing group dynamics' would not have been found if questionnaires alone were used; with the links between this and the use of problem-based learning as a teaching method being important in terms of trainees professional development. It is also important to know that the other themes, of Leadership, Team working, Learning over time and Professional development, were found in both the questionnaires (completed by 16 participants) and the focus group (attended by six participants). This suggests a level of validity in that different methods of data extraction produced the same themes. It is also a strength that the mean scores regarding the usefulness of PBL were maintained at two-year follow-up, when 15 participants completed the questionnaire.

Conclusions

The evidence-base for PBL on clinical psychology training is small, highlighting the importance of evaluating its effectiveness in teaching. This study aimed to provide information to help tailor PBL teaching more specifically to learning needs of trainees.

The use of PBL with this group of trainees appeared largely helpful in encouraging the growth of team working and leadership skills over time, for application to clinical practice. Further research is recommended that evaluates wider use of PBL across clinical psychology courses nationally.

Acknowledgements

Massive thanks go to all the trainees and staff that were involved in this evaluation, without whom the evaluation could not have been completed.

The authors

Emma Griffith, Catherine Butler, Jenny Csecs and Cara Davis

School of Psychology, University of Bath,
Claverton Down, Bath, BA2 7AY, UK

Correspondence

Dr Emma Griffith BSc, MSc, ClinPsyD, Dip
Cognitive Therapy, FHEA
Lecturer, Clinical Tutor/Consultant Clinical
Psychologist
School of Psychology, University of Bath,
Claverton Down, Bath, BA2 7AY, UK
Telephone: (+44) 01225 385506
Email: E.J.Griffith@bath.ac.uk

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