Problem-Based Learning in Health and Social Care

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in Health and Social Care
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1: Starting out: a guide to using this book and its development

Lyn Westcott

When you set out on your journey to Ithaca, pray that the road is long, full of adventure, full of knowledge. . . . Always keep Ithaca on your mind. To arrive there is your ultimate goal. But do not hurry the voyage at all. It is better to let it last for many years; and to anchor at the island when you are old, rich with all you have gained on the way . . . Ithaca has given you the beautiful voyage. Without her you would have never set out on the road.

From Ithaca by Cavanfy (1863–1933), (Sachperoglou, 2007, p. 37)

When the editing team began to compile this book, we were struck by the similarity of our own experiences of working, teaching and learning to use problem-based learning (PBL) and the metaphor of a journey. As educators, we were aware that our own journeys travelled paths both well worn on occasions and exciting, fresh and ever surprising at the same time. Despite the numerous questions that can be asked when working with and through PBL, part of the essence of the work is the journey of learning. The student and educator move together into the unknown, learning with a freedom of discovery. This keeps us engaged on that road with curiosity and in search of answers and truths, wherever and whatever they may be. The energy for PBL felt strongly by the writing team derives from the value placed on that educational journey. We felt that this was an important text to write because although PBL is an empowering way of working, paradoxically, by taking away familiar structures of traditional education, many people struggle and can feel de-skilled when first encountering it, either as a student or as an educator. We hope this text will therefore help provide a positive way into this work, helping people understand and engage in the fullest potential of the journey and benefiting from what
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it can offer. This is because PBL can be a pivotal experience enabling students to drive confidently into a world where their skill and ability as self-motivated lifelong learners is essential to develop ever-growing expertise in practice. For readers with more experience of PBL, we hope the book will present challenging ideas and provoke further consideration of contemporary practice as well as a revisiting of more familiar ideas.

For the contributors to this book, this process has included reflecting on the real-world practicalities of working this way in higher education settings, revisiting and developing the theory that guides a contemporary use of PBL, and examining the curriculum experience for both the learner and the educator. The experience of the contributors is based mainly (although not exclusively) in higher education settings for health and social care professionals, and inevitably that experience has influenced our approach to the writing. Collectively, we have come to PBL in different ways – as students enrolled on this style of course, as staff working on a programme using PBL or as course designers who have actively elected to construct a curriculum with this method of teaching and learning. We hope this book will appeal not only to colleagues and students in the health and social care sector but also to other professional groups using PBL or thinking of adopting it within teaching and learning.

As with any text informed by experience, a number of themes were identified as important by the writing team and these are reflected within various chapters of the text. As themes emerged, were debated and then revised for this publication, a logical shape emerged from the writing that led to the development of three sections or parts to structure the approach taken by contributors. Each of these parts is a distinct entity with a convergence of focus shared by that group of writers, possibly helping readers to find material of interest in a convenient way. In turn, each part links to and complements the others within the book, building up a collection of writing from different perspectives on PBL that are both interlinked and yet distinct in their focus. In addition to the three structural parts, there is this introductory chapter to help navigate the reader into the text and a final concluding chapter in Part 3, written by Teena J. Clouston.

Part 1 – ‘General Principles of Using PBL’ – examines some key areas of common concern to all people engaged in using this way of teaching and learning, such as in Chapter 2, which explores some of the history of PBL and its relevance to curricula today. This said, some chapters may be of particular interest to educators seeking to introduce PBL into their educational practice or critically examine and develop their expertise in this area. There are chapters that prompt the reader to carefully consider whether the time is right to switch to this type of learning as well as those that explore a wide range of practical and
theoretical concepts that enable PBL to be practised in a thoughtful and effective way. The titles of chapters in Part 1 are as follows:

Chapter 2: Exploring the foundations for problem-based learning – Ruth Matheson and Bernhard Haas
Chapter 3: Readiness for problem-based learning – Juan Delport and Steven W. Whitcombe
Chapter 4: Developing problem-based learning curricula – Lyn Westcott, Alison Seymour and Sara Roberts
Chapter 5: Becoming a problem-based learning facilitator – Gwilym Wyn Roberts
Chapter 6: Managing group dynamics and developing team working in problem-based learning – Alison Seymour
Chapter 7: Assessing problem-based learning curricula – Sue Pengelly

Part 2 – ‘The Theoretical Interface with PBL’ – is designed to explore in some depth a selection of theoretical constructs and concepts, offering established and newer discussion on how PBL may be framed and practised. Informed by a body of primary research into these topics, the chapters in this part aim to develop and consolidate the work of other writers and theorists in this area. The key feature of their approach is that they also offer some different emergent insights on the relevance of a particular theory for the practice of PBL. The work will be of interest to readers who wish to explore theoretical parameters alongside some areas of topical debate and reasoning. These chapters and this part of the book are not definitive in their scope, but offer some debate that is different from that found in other PBL texts. It is hoped that they will engage PBL practitioners in discussion on how this work may be further developed and applied. The titles of chapters in Part 2 are as follows:

Chapter 8: Reflection and the problem-based learning curriculum – Gail Boniface
Chapter 9: A reflexive model for problem-based learning – Steven W. Whitcombe and Teena J. Clouston
Chapter 10: Promoting creative thinking and innovative practice through the use of problem-based learning – Jill Riley and Ruth Matheson
Chapter 11: Problem-based learning and the development of capital – Jill Riley and Steven W. Whitcombe
Chapter 12: An evolving vision for learning in health-care education – Andrew Machon and Gwilym Wyn Roberts

Part 3 – ‘The Learner in Problem-Based Learning’ – is a section that explores relevant dimensions for students using PBL as part of their
passage to professional practice and beyond. The work discusses some frank first-hand experience of the student journey, as well as examining a selection of critical interrelated issues when using PBL during study for health and social care professions. This is considered as part of a wider remit of becoming a lifelong learner as well as a qualified practitioner. The work will be of interest not only to health and social care students using PBL but also to other students whose curricula include this type of learning experience. The chapters will also be useful to educators – either those beginning to work in a curriculum using PBL or more experienced staff seeking to appreciate more about the potential of PBL as part of the student journey and about how this contributes to development of professionally responsible practitioners in health and social care. The following are the titles of chapters in Part 3:

Chapter 13: The student experience – Liz Galle and Sandra Marshman
Chapter 14: Becoming lifelong learners in health and social care – Pam Stead, Gareth Morgan and Sally Scott-Roberts
Chapter 15: Becoming a self-directed learner – Susan Delport and Ruth Squire

In the final Part 4 of the book, strands of thinking in problem-based learning have been interwoven by Teena J. Clouston under ‘Final Thoughts’. This highlights some conclusions in the light of the content of the book and discusses an interconnected, relational perspective for PBL.

As a group we have been interested in reflecting on our educational experience and understanding of PBL derived from notable contributors in this area relevant to our own practice, including Boud and Feletti (1997), Engel (1997), Baptiste (2003), Sadlo and Richardson (2003) and Savin-Baden (2000, 2003). Some writers have drawn on PBL as an area for conceptual analysis within their higher studies and all have engaged in lively debates with peers and colleagues. This has enabled us to develop our understanding, challenge the ethos and direction of practice as well as consolidate ideas contributing to and shaping the work at hand. We hope that our presentation of some of these areas within this book will appeal both to those new to and those familiar with PBL. As a group we are aware that there is a divergence of opinion on aspects of PBL and enquiry-based learning and how these may be drawn upon within a curriculum. The remit of this text is not broad enough to explore all this in depth, but it does include aspects of opinion that may explore ways forward, challenge understanding and address theory and practice issues topical and familiar to people within the PBL community. We hope that the book will inspire further debate and help
engage even more people into this way of working. We are still on our personal roads to Ithaca; let us enjoy the adventure and knowledge that unfolds ahead.

References


Part 1

General Principles of Using Problem-Based Learning
Introduction

This chapter provides the reader with a foundation for understanding the evolution of problem-based learning (PBL) from its beginning to current thinking on the same. It begins with a definition of PBL and considers why this is an appropriate approach for the education of health and social care professionals. It seeks to link the aims and objectives of PBL programmes with the development of skills necessary to function in a modern health and social care environment. Examples of two different models of PBL have been provided to show a comparison between the well-publicised Seven Step Maastricht Model and a less procedural visual model, both demonstrating the cyclical nature of the PBL process. The chapter proceeds to provide insight into the links between PBL with both the principles of adult education, as presented by Knowles (1980), and current educational thinking regarding the constructive nature of learning. The final section examines both the advantages and disadvantages of PBL as presented in the literature, while challenging the reader to consider the benefits of the adoption of PBL by health and social care educational programmes.

Definition of problem-based learning

A basic definition for PBL is provided by Boud and Feletti (1997, p. 15), which describes it as ‘an approach to structuring the curriculum which involves confronting students with problems from practice which provide a stimulus for learning’. Boud and Feletti, however, also acknowledge that this definition could be applied to other learning approaches. The essential delineating characteristic of PBL is that learning is initiated by the learners’ focus on problem resolution without propositional knowledge (Savin-Baden, 2000). ‘Real-life’ problems
provide the initial impetus to promote exploration of the problem and
begin the process of critical thinking. By working in small groups,
utilising their collective skills, students develop collaborative processes
to identify individual and group learning needs in order to solve the
problem. Individual research informs the group, and through interro-
gation and integration of the information, understanding is developed
and used to provide potential solutions and identify further needs. The
process of learning is active, self-directed and cyclical.

Why adopt a problem-based learning approach in health
and social care?

Educators in health and social care have been inspired to adopt a PBL
approach for their courses for a number of reasons. The growth and
development of PBL has gone hand in hand with the rapid expansion
in biomedical knowledge, and Epstein (2004) proposed that more tra-
ditional, didactic methods are unable to cope with teaching this vast
increase in factual knowledge. Priorities are shifting from merely acquir-
ing knowledge to providing the learner and developing professional
with the skills for lifelong learning. Health and social care professions
are seen essentially as practice-based disciplines. The clinical education/
placement element of education programmes often fulfil the crucial
task in linking university-based theoretical education and clinical/
professional and practice education. It has been widely accepted that
not all education programmes successfully make this link (Tiwari et al.,
2006). The creation of positive learning contexts that help to bridge this
theory/practice gap is therefore essential. This learning context plays a
vital role in developing appropriate learning behaviour. Deep learning
is seen as a positive and appropriate approach for students to adopt as it
will help them to accumulate knowledge and, at the same time, to apply
it to the situations faced in everyday practice. Surface learning, on the
other hand, is seen as inappropriate as it merely relies on memorisation
and does not facilitate understanding and reflective application. The
use of real-life scenarios in PBL aims to provide this essential context for
learning. Schmidt (1983) describes PBL as an instructional method that
presents a small group of students with a carefully constructed prob-
lem reflecting real-life phenomena. This problem needs exploration;
through discussion students find explanations and seek ways to solve
the problem presented (Schmidt, 1983). Once learning objectives have
been established, further individual learning is needed to inform the
group of knowledge, understanding and insights that will assist in
the resolution of the problem. Barrows and Tamblyn (1980) highlight
the need to gain this knowledge from a variety of external sources and
develop the ability to integrate information gained to solve the problem,
thereby integrating theory and practice.
Health and social care practitioners cannot only rely on acquiring knowledge and practical skills, even if they are equipped to update these in line with new developments. Modern health and social care needs individuals who are good at team working, coping with change and uncertainty, solving problems and making reasoned decisions (Hmelo & Evensen, 2000).

**Aims and objectives of PBL programmes**

The aims of PBL and the outcomes by which any successful PBL programme should be judged (summarised from Barrows, 1994; Newman, 2003) are listed below.

- Acquisition of integrated, applied and extensive knowledge
- Development of independent, self-directed lifelong learning skills
- Development of practical, professional and interpersonal skills
- Development of motivation to learn, question and understand
- Early immersion into the culture and values of health and social care and professional attitude
- Development of collaboration and team working skills
- Ability to adapt to and participate in change
- Problem solving and making reasoned decisions in unfamiliar situations
- Reasoning critically and creatively
- Practising with empathy, appreciating the other person’s point of view

Not all PBL programmes achieve all of these objectives all of the time for all learners. However, there are strong claims that PBL is good at developing these interpersonal skills (Spronken-Smith, 2005) and that it prepares the learners well for their professional roles (Jones et al., 2002; Dean et al., 2003).

Central to PBL is the student-centred approach. The student-centred nature of the learning reflects the principles of adult learning set out by Knowles (1980), recognising the need for adult learners to be perceived and treated by others as being capable of taking responsibility for themselves, coming to the learning environment with a wealth of experience and learning what they need to know in order to perform effectively; it also recognises that for learning to be meaningful it needs to be centred around life situations and not subject matter (Knowles, 1980, 1984).

Barrows (1994) identifies the brainstorming stage of the PBL process as the beginning of the clinical reasoning process. He suggests that the generation of multiple hypotheses results in a creative aspect of problem solving that requires the students to think laterally about the
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Problem, producing new and unique ideas to be explored. It is from the exploration of these hypotheses that learning needs develop and the knowledge needed to test out the hypotheses can be identified. Having gained and analysed the knowledge in relation to the hypotheses (independent study and research), it is time for the students to share their ideas and findings with the group to hone the ideas presented and judgments made (feedback and discussion) in order to make a final group decision and evaluate the outcome (action and evaluation).

Student centredness also means that learning is motivating, challenging and rewarding. PBL students certainly seem to have more fun (Dolmans & Schmidt, 1996) and rate their educational experiences higher than those from more traditional courses (Smits et al., 2002). They also seem to have a better retention through their PBL courses and demonstrate a better progression into post-graduate education (Susarla et al., 2003).

Chronology of problem-based learning

The idea of PBL is certainly not a new one. The approach originated in medical education in the 1960s at McMaster University in Canada. The basis for its introduction was a large-scale dissatisfaction with traditional lecture-based teaching, which appeared to be promoting fact-based rote learning. Out of this dissatisfaction grew problem-based learning (PBL). To date, PBL has probably been applied in one form or another in most medical schools in the United States. Dental schools were somewhat slower to adopt the approach. PBL has also been introduced in many medical schools in the United Kingdom. Other programmes in health and social care have also embraced the approach and the Department of Health (1999) has encouraged its adoption in nursing, midwifery and health visiting education. PBL has also been embraced by subjects outside the medical, health and social care arena. There are recent positive examples from geography (Spronken-Smith, 2005) and business management (Kanet & Barut, 2003), to name but two.

The implementation of PBL is certainly not uniform, and this variability makes its evaluation a considerable challenge. Some programmes may restrict PBL to certain elements of the overall curriculum. For example, PBL may be applied to the more theoretical or university-based elements or modules of a health programme without its implementation in placement. Others have specifically focused on PBL in the clinical/placement element of learning (Tiwari et al., 2006; Ehrenberg & Haeggblom, 2007).

Many forms and variations of PBL exist today and the relative merit of ‘pure’ versus ‘hybrid’ forms is probably impossible to answer with a high degree of confidence. This is largely due to the fact that published evaluations or comparisons usually fail to adequately describe the PBL
or the control approach taken. A clear definition of ‘what is hybrid PBL’ is lacking, but Armstrong (1997) explains it as ‘innovation without sacrificing the best of the old’. In practice, this would often involve a problem-focused approach, combined with the retention of lectures and skills classes. This form of PBL is often adopted by health and social care programmes as they seek to ensure competency of skills and satisfy regulatory body requirements. It could be argued that this approach also provides students with a greater sense of security in their foundation knowledge and skills for practice and mirrors the type of experience gained while on clinical practice.

Common to most PBL approaches is the attempt to provide a clear structure (McLoughlin & Darvill, 2007). This structure commonly involves the use of a trigger or case scenario. This trigger may be taken from real practice or be adapted from real practice with the intention to better cover the intended outcomes of learning. The learners then have to develop their own learning objectives, drawing on existing knowledge and defining new learning needs (Wood, 2003). The learners then work on these objectives before they share their findings with the other group members. While this PBL structure is the key to the development and achievement of the learner, it is frequently supplemented with other sessions. These can be practical skills classes, clinical practice on placements, keynote lectures or other resource sessions (Wood, 2003). What differentiates PBL from other types of group learning is its focus on problem resolution from the outset, irrespective of propositional knowledge.

Models of problem-based learning

A number of models for this PBL process have been described and are in use. Probably the best known and most widely used of these models is the Maastricht Seven Step Model (Schmidt, 1983) described below:

**Step 1: Clarifying the text and explaining unclear terms and concepts**
Students are presented with the problem, they read through the text and identify any concepts or words that are unclear to ensure a joint group understanding.

**Step 2: Defining the key problem**
The students work together to define the problem or identify the key task.

**Step 3: Analysing the problem and suggesting possible solutions**
This is the brainstorming stage where ideas are presented as to what may be causing the problem. At this stage no idea should be thrown out or sifted and students should discuss their understanding of the problem from their particular standpoint and offer possible solutions.
Step 4: Elaborating, testing, reviewing and refining
The group discusses the ideas put forward in Step 3 and the students begin to prioritise their findings. It is at this stage that they remove any irrelevant information. Any possible solutions should be recorded and discussions should ensue to prioritise these.

Step 5: Formulating learning objectives
A group consensus is reached with regard to the sound knowledge base needed to address the problem. Learning needs are identified and prioritised by establishing what the group does not know or understand and by establishing how these needs can be met. It is at this stage that a group learning contract can be useful (Matheson, 2003).

Step 6: Self-study
Students research individually to gain information about their learning objectives. Encouragement should be given to obtain this information from a variety of sources including books, journal and personal contacts.

Step 7: Integrating and testing new information
The individual research is brought back to the group. The knowledge and understanding needs to be synthesised to present its relevance to the problem and, through discussion/debate, scrutinised in relation to the problem. Following feedback, the group may need to return to Step 2 to redefine the problem and the process starts again.

Figure 2.1 A problem-based learning cycle (Riley & Matheson, 2005).