Article

Beyond the rhetoric of problem-based learning: emancipatory limits and links with andragogy

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Problem-based learning (PBL), sometimes referred to as enquiry-based learning, is an approach to education that has gained increasing usage within health care in recent years. Its origins very much lie within medical education. The bulk of literature on PBL is optimistic about its potential, especially in relation to nurse education. It is argued here that the benefits of PBL are that it moves toward student-centred education and process-oriented methods that have been taking place for at least 16 years. There are clear links with andragogy although this is not always acknowledged, but the potential move away from emancipatory education inherent in PBL if used without reflection, is inconsistent with andragogy.

This article takes a more critical view of the concept and argues that there are significant limits which need to be considered carefully. Apart from the possible move away from the emancipatory aims of education, there is commonly an implicit support of the medical model within PBL which is inappropriate at a time when the limits of medicine are becoming increasingly clear.

It is concluded that further debate and research on the approach is necessary, but that as a facilitative strategy PBL does hold some promise. However, it would be inappropriate to use it as a curriculum model if only because it lacks the diversity required of a postmodern curriculum and would not respond effectively to differing student learning styles. © 1999 Harcourt Publishers Ltd

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Introduction

Problem-based learning (PBL) is very much the 'in-thing' in health-care education at the moment. In my own university the 1999 pre-registration nursing programme is to be based upon such a curricula. In discussions and reading on this matter I have found myself to be both supportive of elements within the approach, and uneasy about other aspects on several grounds. The aim of this paper is to participate in the discussion on the appropriateness and effectiveness of PBL and its potential use within nurse education.

After outlining the nature of PBL the question of emancipatory aims is addressed, and potential limits to PBL are highlighted in relation to more critical and reflective forms of education. Following this the relationship with andragogy is explored, a relationship whose nature was not clear within the literature examined here. As PBL is frequently referred to as a cohesive, all embracing strategy for education, a curriculum model, this trend is followed here. Finally, ways forward are suggested in terms of maximizing the possible benefits to be gained through the use of PBL as a facilitative strategy.

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Problem-based learning

It only takes a brief literature and Internet search to show that PBL methods have gained wide acceptance in medical, nursing and para-medical curricular (Boud & Feletti 1997, Hughes & Lucas 1997). Some, such as Glen (1995) and Biley and Smith (1998), believe it offers an almost revolutionary change and new way forward. This will be shown to be an overreaction. Although the term enquiry based learning is preferred by some as a means to overcome the negative connotations inherent in the use of the word problem, no clear difference between the two was found in the literature reviewed in completing this paper.

PBL is defined as the analysis of problem situations as a basis for acquiring knowledge, skills and attitudes (Baillie 1998); the starting point of learning should be a problem (Boud & Feletti 1997). A key feature is that knowledge from a variety of disciplines is brought together within a process that should enhance student learning (Biley & Smith 1998). Teaching discrete subject areas, such as sociology or biology, is dropped in favour of a more problem oriented approach although specific input may be given to students through what are often termed 'fixed input' sessions. The problems or scenarios are often based upon real life situations and presented in a similar manner to how they would occur in practice (Creedy & Hand 1994).

Hughes and Lucas (1997) claim the key elements to be the setting of problems to engage the learner in the learning task, facilitating discussion which distinguishes key features leading to identification of knowledge deficits and an understanding of the nature of the problem and how best to approach and manage it. Learners are then engaged in independent learning activities within which they explore constructs, issues, and theories, helping them obtain a deeper understanding of the problem and its potential solutions. The results of these activities are brought back to the group for discussion. Outwardly at least, it is a student-centred approach in which the role of the educator is one of facilitator, as opposed to teacher.

Emancipatory and self-directed?

My key concern is the emancipatory potential of PBL, or more specifically limits to this. Mezirow (1983), using the work of Jurgen Habermas, described the concept of perspective transformation and its importance to adult education. He claimed that emancipatory action was synonymous with perspective transformation, a mode of learning he deduced from research with women re-entering educational programmes.

Habermas is cited as describing three generic areas of human interest which generate knowledge. They were:

- The area of 'work' which involves action to control or manipulate the environment which is exemplified through the empirical-analytical sciences
- The 'practical' area, which involves action to clarify the conditions for communication and is exemplified by the historical-empirical sciences
- The 'emancipatory area, involving an interest in self knowledge and self-reflection, exemplified by the critical sciences.

Habermas is not the most popular writer in post-modernism (Hall et al. 1992), but notions of education as emancipation and liberation can be found in the writings of others such as Friere (1985), and within andragogy (Nottingham Andragogy Group 1983, Milligan 1997).

Perspective transformation refers to '... *the structure of psycho-cultural assumptions with which new experience is assimilated and transformed by one's past experience*' (Mezirow 1983, 125 original emphasis). This was linked to role expectations of the women in the research, and them becoming critically aware of how these might constrain their views of themselves and their relationships with others. It allowed them to more critically view their relationships, culturally induced dependency roles, potential reasons for this, and take action to over come them. This work seems highly relevant to nurse education and can be paralleled with the nurse/doctor relationship. Bottery (1996), using the work of Donald Schon, claims that education should move individuals beyond the level of technical rationality, thoughts and habits that are common for that occupation. In other words, education is about more than the first two domains described in Mezirow's work.

A key aspect of PBL is the supposed self-direction within it (Biley & Smith 1998). In a very interesting article Brookfield (1993) notes that

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self-directed learning has gone from an Ivan Illich-inspired threat to established adult education (Illich 1996) to a comfortable position within mainstream education. In fact he cites authors who argue that it seems to have settled into a harmonious rut, loosing whatever 'edge' it had, and been so compromised as to only function as an agent of domestication (a term borrowed from the work of Freire). Brookfield concludes that this view is pessimistic, but that self-direction, political clarity and critical practice, are difficult goals to achieve within educational processes.

Elements of this argument offer a useful critique with regard to PBL. Collins is critical of self-directed learning arguing that:

> far from empowering adult students, self-directed learning strategies steer them to a negotiated compromise with predominant interests which support social conformity (Brookfield 1993, p 228).

In fact Collins sees self-directed learning and emancipatory practice within education as two mutually exclusive goals. Educators such as Freire (1985) state that we must start (though not stay) where students are and bring them to an uncomfortable and often unsought confrontation with inequitable political realities, and with their own unacknowledged collusion in these realities (Brookfield 1993); the emancipatory domain as described by Mezirow (1983).

Brookfield argues that the student must have control over all elements of the educational process if the ethos of self-direction is to be valued:

> Who has the final say in framing the range and type of decisions that are to be taken, and in establishing the pace and mechanisms for decision making, indicates where control really resides (Brookfield 1993, p 233).

Bearing these arguments in mind some possible limits to PBL become clear. The pre-selection of problems/scenarios/vignettes (Biley & Smith 1998) removes from the student an important element of the choice process. So although it is frequently argued that PBL is about self-direction, it can in fact break one of the fundamental rules of this. Unlike in reflective practice, which is very much linked to emancipatory goals in education, where the student is asked to choose and reflect on aspects of practice (Johns 1995, Johns & Freshwater 1998) these have been pre-selected and a good deal of control over problem definition and the discourse used to construct this is retained by the educationalist. This is of concern as medical model discourse appears to dominate many of the scenarios used, a fact no doubt linked to PBL's origins in medical education (Frost 1996). This criticism perhaps applies less to learning disabilities and mental health scenarios/problems:

> But if the range of acceptable content has been pre-ordained so that we deliberately or unwittingly steer clear of things we sense are deviant or controversial, then we are controlled rather than in control (Brookfield 1993, p 234).

The medical model has significant limits in relation to achieving health in modern society and is increasingly seen as constraining, rather than enabling the achievement of broader health goals (McTaggart 1996, Seedhouse 1997, Davis-Floyd & Dumit, 1998, Milligan 1998, Sharpe & Faden 1998) and like other professions in the Western world, it is likely to encounter further challenges (Bottery 1996). This helps to frame some important questions: how critical are nursing PBL programmes of the medical model? Will alternative and complementary therapies be accessible to students who can then evaluate their potential use in health care? The latter is particularly important as these are gaining in credibility and use, yet medicine frequently seeks to marginalize such views (McTaggart 1996).

Fenwick and Parsons (1998) argue in a critical analysis of PBL in professional education, that it serves to reinforce the dominance of the professional elite. That the approach seeks the deviant, to label and problematize in order to rehabilitate these problems in a context removed from the complexities of practice. They use the term 'bloodless recreations' to illustrate the limits of divined cases chosen by those in educational authority.

Although it is common in education to pre-determine curricula and syllabi, there have been significant moves towards student-centredness, self-direction and reflection, often emphasizing the importance of process over outcome. Such moves can be traced to the experiential curriculum introduced for mental health in 1982 and the ENB (1987) 'Managing Change in Nurse

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Education' initiative. Jarvis (1985) noted the similarities between andragogy and the Romantic Curriculum as described by Bernstein. In such curricula classification and framing are such that subject matter is integrated and both students and tutors have some control over selection and delivery. PBL continues to shift classification and framing and such shifts reflect power struggles between those espousing one subject matter, or approach to learning, over another. These conflicts are far from resolved in nurse education (Trnobranski 1997) but PBL does appear to keep classification in the hands of the educator.

The initiatives described above seem to have slipped the memory of many that write on PBL. PBL goes with the trend initiated with the 1982 Mental Health Curriculum, and it appears to meet some of the criteria of a romantic curriculum, but due to the predetermination of what constitutes a problem, it is also a possible step back. There is also a frequent reference (for example Biley & Smith 1998) to the advantages of PBL over traditional approaches to teaching! However, this categorization is not explained. Do traditional approaches include group work, experiential learning, game playing? All of these are common in modern nurse education. Again, the progress already made towards a range of methods and a more student centred approach is seemingly ignored.

In my experience the scenarios presented to students in PBL have a medical model emphasis (this applies to both pre- and post-registration examples). They frequently use medical terminology and describe what are essentially medical problems. Certainly in terms of sustaining Western medical discourse, PBL is an avenue through which control by the threatened throne of medicine can be maintained. As the French post-modernist writer Foucault made clear, discourse and power are inextricably linked (Foucault 1991, Sheridan 1990) and this may help explain why PBL has been so widely accepted: it sustains and perpetuates the dominate discourse of Western medicine.

Foucault's work on discourse, and his critique of medicine (Foucault 1991), is helpful in providing insights into the transient nature of labelling and medical diagnosis and providing alternative views on taken for granted notions in health care (see also Szasz 1974). For example, is it illness that alienates people, or is it alienation that makes them ill? (Horrocks & Jevtic 1997). This is poignant in terms of PBL as we may be presenting through problems/scenarios only the former (medical view) and not the latter, a more critical, socio-political view. Such an argument is supported by Armstrong, a doctor himself, in the opening to his book analysing medical *gaze* (a concept used from Foucault's writing):

> I doubt if it ever occurred to me or my fellow medical students that the human body which we dissected and examined was other than a stable experience ... In dissecting and examining bodies I had come to take for granted that what I saw was obvious. I had thought that medical knowledge simply described the body. I argue in this book that the relationship is more complex, that medical knowledge both describes and constructs the body as an invariant biological reality (Armstrong 1983, xi).

The point here is that for Armstrong 'the problem', the biological body and its diseases, was pre-defined for him and his student colleagues only to discover (some time later) that this simplistic view of humans is transient, changing and itself a problem.

Further limits to PBL can be found within the article by Harris (1997). She argues that the aim of education, for those who will practice in occupations such as teaching, management and nursing, should be critical thinking. Such a notion is interesting as the problem solving processes within PBL may facilitate this, but using Harris' work it is also possible to suggest that PBL is simply a continuation of the rational, mechanistic models inherent in ideas like the nursing process and other linear problem-solving processes which are increasingly criticized. Such models suggested, '... that the desired ends were fixed and un-contested and secondly, that the problem was clear' (Harris 1997, p 150). Similar arguments are made by Fenwick and Parsons (1998) in that practice ought to be a process of pursuing imaginative possibility rather than a linear categorization of obstacles. Harris suggests that students can benefit through problem-solving processes if they develop the ability to critically challenge the assumptions upon which the problem, and the model used to solve it, rests: 'Critical thinking may be our best chance to increase the odds for organizational survival in the twenty-first century (Mitroff & Linstone, cited in Harris 1997, p 152).

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To bring this part of the argument together, and being critical in the sense used by Harris, it is useful to consider the following two statements:

> ...the doctor–nurse relationship remains inadequately theorised and students, once in the hospital setting, tend to conform to established patterns which reaffirm their role as the 'good wife' to the doctor' (Alvi & Cattoni 1995).

Power relationships within PBL, especially if used as a curriculum model, require careful consideration. Failure to critically analyse such issues may lead educationalists to fall foul of the following scenario:

> For example, it is easy to imagine an inauthentic form of control where adults feel that they are framing and taking key decisions about their learning, all the while being unaware that this is happening within a framework which excludes certain ideas or activities as subversive, unpatriotic, or immoral. Control led self-direction is, from a political perspective, a contradiction in terms, a self-negating concept as erroneous as the concept of limited empowerment (Brookfield 1993, p 234).

Furthermore, those that claim the authority to identify problems must be prepared to see themselves as part of the problem structure they have created (Fenwick & Parsons 1998).

Is problem-based learning andragogy?

There is dissent with regard to the degree to which PBL is consistent with, or is derived from, andragogy. My own conception of andragogy, which arose from research into the topic, can be summarized thus; the facilitation of adult learning that can best be achieved through a student centred approach that, in a developmental manner, enhances the students self-concept, promotes autonomy, self-direction and critical thinking (Milligan 1995, 1997). In this sense it seems inevitable that PBL has elements of andragogy within it, and it has been said that PBL is Knowles put into action (National Adult Branch Sharing Forum 1998), but The Nottingham Andragogy Group (1983) stated that the approach aimed at enabling people to become the originators of their own thinking and feelings, a point somewhat threatened at the emancipatory level by PBL.

An important criticism of andragogy is the conservative work ethic implicit within it (Jarvis 1985, Milligan 1995). PBL does not appear to address this, indeed it asks for an increased focus on work and the problems associated with it. Using again the structure given by Mezirow, PBL appears to cover: (1) the area of work, and (2) the practical area, but in relation to (3) emancipation, which could involve questioning the very nature of the work itself, little critique may be fostered.

In with, and in addition to, the research and literature available on andragogy, there is much written about effective facilitation of learning, student centredness and self-directed learning. Much of this is conspicuous by its absence in the literature on PBL. Comments within the Biley and Smith (1998) article show a clear disregard for the complexities of self-directedness as described in the excellent article on this subject by Grow (1991). Biley and Smith simply claim that facilitators need to be stoic guides, a notion that fails to reflect the developmental nature of self-directedness. Higgs (1993) makes it clear that learners need to learn how to learn independently, and this requires guidance from an educator skilled in such matters (Slevin & Lavery 1991). Evidence to support this, in terms of the substantial initial support required by students undertaking PBL, was found by Frost (1996).

Grow asserts that the learner's state is more important in choosing the appropriate teaching methods than the subject matter, a direct challenge to a curriculum based solely upon PBL. This brings another criticism into view: how do we reconcile PBL with the range of learning styles that we know students have (Honey & Mumford, 1986). This is a particularly interesting point with regard to the potential strength of andragogy:

> This approach does not suggest that any methods – lecture, experiential, T-groups, project, etc. are better than any other, the key lies in the way they are used, i.e. pedagogically or andragogically (Happs 1991, p 151).

Although I do not agree with the distinction made between andragogy and pedagogy as given in this quote (Milligan 1997), it shows that andragogy embraces a wide range of methods which are selected using relevant theory from the literature on self- and student-directedness to

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facilitate learning. PBL is one strategy that may be used within an andragogical approach. To claim or use PBL as a curriculum model would lack this flexibility and put, as it were, 'all the educational eggs in one basket', a risky idea when we know students have different learning styles and appear to respond positively to a variety of facilitative methods.

Ways forward

Bearing in mind the arguments raised here, the following are offered as ways in which the use of PBL within nurse education curricular might be enhanced:

- Little in the way of criticism can be found in relation to the use of PBL in nurse education (Biley & Smith 1998). This in itself is a worry as PBL will not be a cure all, just as other educational initiatives in the past have not. Critical debate and further research is, therefore, the first way forward. In particular it may be useful to analyse the perspective using Bernstein's work on classification and framing within curricular (Trnobranski 1997), and Fenwick and Parsons (1998) point that there is a lack of criticism with regard to the philosophical basis upon which PBL operates.
- Careful construction of scenarios/problems presented to students is required bearing in mind some of the issues raised here. Particular attention should be played to the discourse used and the control students have over generation of problems/scenarios. It may be that they begin to see medicine itself as a problem, and if this is the case, and we seek emancipatory education, then they must be left to pursue this avenue of inquiry. Certainly, control over problem identification should move towards the students as programmes progress.
- Reflective practice should be used to facilitate a critical approach to practice. Without a reflective element, through which students are given control over the issues they wish to address, the emancipatory element of education will almost certainly be lost.
- It would be appropriate to acknowledge the importance of research and literature on andragogy, facilitative skills and student centred practice. Some proponents of PBL seem to have missed the point here, in that these are integral to effective implementation, and that they are not new ideas. Rather than push PBL as an ideology, admit that other educational processes are crucial to its successful use.
- Acknowledge that PBL is probably best used as a facilitative strategy, along with other educational methods, rather than as a curriculum model (Drinan 1997).

Conclusion

It seems likely that PBL will help continue the progress made in the last 16 years towards more student centred, process oriented facilitative educational goals. However, using the framework derived from Habermas and the work of Mezirow, questions remain about the emancipatory element of education within PBL if it is used as a curriculum model. Indeed, as a curriculum model PBL may well be inappropriate for nursing simply because it may not lead to critical questioning of the gendered nature of nursing work, and the power and class advantages held by medicine. Students that go through the PBL process do appear to be more questioning, but what questions do they ask? Are they emancipatory in nature? Will they question the dominant discourse of Western medicine or simply perpetuate it? In short, do we want critical thinkers or domesticated doers?

Although using Foucault's work within nursing remains unpopular with some (Porter in Cheek & Porter 1997), the ability to be critical of health care delivery is for me a cornerstone of nurse education. Nurses cannot address issues they cannot see, that are outside their gaze. PBL as a curriculum model may well limit this gaze (Fenwick & Parsons 1998). However, when used as one of a number of educational strategies such limits may be avoided and I have seen little, beyond rhetoric, to suggest that PBL should be used as the only method within nursing curricula. Putting all one's educational eggs into one basket like this ignores the complexities of facilitating student centredness and self-direction. It also appears to ignore the issue of student learning styles, although those people classified as activists (Honey & Mumford 1978) may have a great time! What appears more sensible is to strive for diversity, perhaps a post-modern curriculum in which:

> ...we will envision curriculum not as linear trajectory nor a course (with hurdles) to be

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> run, but as a multifaceted matrix to be explored ... But overall the broad goal would be to combine closure with openness, performance with development, right answers with creative solutions and processes (Doll 1989, p 251).

Taking nurse education forward should involve a diversity of methods, acknowledging the value of literature and research available on facilitating learning, student-centred and self-directed learning, and not limiting ourselves to a curriculum based too heavily upon PBL. PBL is a potentially useful educational method, not a cohesive curriculum model.

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