

PERSPECTIVES ON CO-CREATING KNOWLEDGE WITH LEARNERS

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Abstract

What does it mean for learners to be involved in the co-creation of knowledge? This paper explores different interpretations of this phrase and identifies implications for research and practice. Firstly, it is contextualised in terms of different theories of learning, leading to a distinction being drawn between pedagogical and political implications. Pedagogical implications raise questions about what is learnt and how efficiently; this includes questions about the role of learners and teachers. Political questions focus on the kinds of knowledge valued in the context of higher education, and the way in which this includes or excludes practices. A case is made for the continued value of disciplinary knowledge. The paper concludes by differentiating between problems to be solved and issues that teachers will have to continue to consider.

Introduction

In this paper, the idea of learners co-constructing knowledge is examined. Firstly, the epistemological assumptions and implication of the phrase are considered. Next, the practical, pedagogic implications are discussed. These are differentiated from political implications, concerning the status of knowledge in higher education and the consequence inclusion or exclusion of groups and practices. Finally, the paper concludes by identifying the implications of this discussion for teachers and researchers.

Epistemological background

Current interest in learners actively producing knowledge is widespread; it is reflected in writing about pedagogy (Mayes & de Freitas, 2007), has formed the foundation for movements such as problem-based learning (e.g. Savin-Baden, 2000) and has been strongly associated with the development of what has been described as Web 2.0 (e.g. Barnes & Tynan, 2007).

However, the idea that learners are involved in knowledge creation is not new. It has long been the hallmark of social accounts of learning, and is reflected in many of the central texts in this tradition. For example, it formed a foundational assumption in Vygotsky's work:

Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first between people (interpsychological), and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relations between human individuals. (Vygotsky, 1978, p. 57)

Such a perspective immediately positions the learner as an active agent in the process of producing knowledge; it is engaged with, not simply absorbed. This idea persists; for example, in 1997, Wenger's account of Communities of Practice rests on a very similar principle:

Although claims processors may appear to work individually, and though their jobs are primarily defined and organized individually, processors become important to each other. [...] They act as a resource to each other, exchanging information, making sense of situations, sharing new tricks and new ideas, as well as keeping each other company and spicing up each other's working days. (Wenger, 1997, pp. 46-47)

More radically, the same idea can be seen in the writing of educators such as Freire (1970), for whom dialogic, problem-posing approaches to education were seen as a necessary alternative to the 'banking' metaphor that he believed was perpetuating inequalities in society.

There are of course differences between these positions. For example, Vygotsky's account of children's development positions the learner as encountering knowledge that already exists outside of their experience; Freire emphasises knowledge as being constructed through a transformative process of reflection on personal experience; and Wenger describes how knowledge is acquired through apprenticeship to experts and held to account by peers. However, all of these accounts have in common that knowledge is created through social processes and the learner plays an active role in this engagement. Moreover, knowledge is always social: there is not private knowledge and social knowledge, with one somehow differentiated from the other. Knowledge has to be understood as a social achievement. Wenger makes this point in his discussion of practice, which he positions as a knowledgeable activity:

The concept of practice connotes doing, but not just doing in and of itself. It is doing in an historical and social context that gives structure and meaning to what we do. In this sense, practice is always social practice. (Wenger, 1987, p47)

But this creates a problem for the phrase, "learners in the co-construction of knowledge". From a social constructivist perspective, learners are always co-constructors of knowledge, because this is what 'knowledge' means. In effect, the phrase is a tautology; it loses its power to celebrate a particular kind of learning, or discriminate between practices that might be thought of as 'good' or 'bad' approaches to engendering knowledge. Learners remain involved in a process of co-creating knowledge whether they are involved in a lively debate, copying text from a board or staring out of the window during a dull lecture. Exactly *what* they are learning may differ in each of these cases, of course; Wenger makes this point about the claims processors in his case study (1998). When instructed to use a form they cannot understand, they learnt that they are not a central part of the organisation they work for. Their learning is expressed in terms of their professional identity, and in particular, in terms of their exclusion from particular kinds of community or involvement. Nonetheless, the process through which they learn this is still a social one.

What this highlights is a gap between epistemology and pedagogy. Viewing learning as social does not mean that all learning is designed from a social perspective. Indeed it is perfectly possible to try and encourage – or even require – social participation in a way that actively discourages learners from engaging (Gulati, 2008). It is this gap between design and process – between pedagogic intentions and learning – that will be considered next.

Pedagogies of co-construction

Even though, from a socio-constructivist position, learners may always be co-constructing knowledge, the kinds of knowledge they are building in different contexts will be different. They may also find it easier to build particular kinds of knowledge in some contexts than in others. This gives rise to practical questions about which kinds of social contexts might be best at supporting particular learners as they try to develop their understanding or ability in some way. Arguably, there are two ways in which these questions might be answered: analytically and empirically.

Analytical assessments of co-construction

Almost any socio-constructivist theory or model could be adopted as the basis for an analytic critique of whether particular pedagogic practices would be good at supporting co-construction. For example, Laurillard's conversational framework (1993) – a model based on Pask's conversation theory – identifies twelve kinds of action that constitute learning:

1. Teacher describes conception
2. Student describes conception
3. Teacher redescribes conception in light of student's conception or action
4. Student redescribes conception in light of teacher's redescription
5. Teacher adapts task goal in light of student's description or action
6. Teacher sets task goal
7. Student acts to achieve task goal
8. Teacher's setting provides inherent feedback to the student on their actions
9. Student modifies action in light of feedback
10. Student adapts action in light of teacher's description
11. Student reflects on interaction to modify description
12. Teacher reflects on student's action to modify description

Laurillard goes on to argue that learning will be impeded if some of these steps are unsupported, and provides an analysis of different media in terms of these actions. This analysis is decontextualised, based on what could be described as ideal types rather than historical cases; so for example, lectures are classified as supporting teachers' descriptions of conceptions, even though specific lecturers' practices might involve more participatory activities.

Analytic approaches such as this often lead to advocacy of a particular pedagogic approach, or to an argument against over-reliance on others. So, for example, it is possible to trace a line of argument from the phenomenographic work differentiating between teacher-oriented and student-oriented conceptions of teaching (e.g. Trigwell, Prosser & Taylor, 1994) through the discussion of "guide on the side" approaches to teaching and on to advocacy such as Salmon's model of e-moderation (2000). Whilst any particular line of argument might be internally consistent, a different starting point could easily lead to different approaches being advocated; arguably, each will have its merits but would remain open to the criticism that, from some alternative perspective, it neglects or over-emphasises other aspects of the learning process. Analytic approaches are still important, providing designs or explanations, but cannot unambiguously answer the question of which pedagogies are best suited to supporting learners as they co-construct knowledge.

Empirical assessments of co-construction

An alternative to the analytic approach is to focus on empirical questions. This is not to suggest that empirical work is opposed to theory; on the contrary, any empirical work instantiates a theory, whether that theory is made explicit or not. However, it can be seen as differing in its orientation to theory. Broadly, the kinds of analysis described above could be understood as applying theories or models to plans or examples of practice, whereas empirical work is more commonly oriented to building or refining theories or models from such examples.

There are many instances where this process is made visible, and empirical work serves to develop our understanding of social practices and their consequences (Cook, 2002). It is self evident that not all kinds of teaching result in the same things being learnt equally well by all students. For example, Vygotsky (1978) introduce the idea of the Zone of Proximal Development, describing the tasks which a child could not perform on their own but which they could with the help of a more able peer. This idea has led to studies of 'scaffolding' learning, introducing structures or systems that can support learners. One line of research within this has been the idea of timely interventions in learning, in the form of contingent teaching (Wood, 2001). The consequence of this is advocacy of a particular pedagogic approach on the basis of an empirically-developed theoretical model.

Such studies usually require some performance of learning as the basis for judgements about the value of a particular approach or intervention. Often, this is performance on a test or for an assignment. But this is not the only way of measuring learning. Assessment may be a particularly important influence on what students learn (Biggs, 1999), but if it is to remain valid, it should reflect what is taught. If one accepts that changes in the way students are taught has any qualitative effect on what they learn, then arguably, principled changes in teaching should be followed by related changes in assessment.

Equally, it may be that some other measure than test performance is deemed to be the most appropriate way to demonstrate learning. For example, adopting Wenger's perspective (1998), people would be deemed to have learnt particular social practices successfully once they are accepted as a competent member of a relevant community of practice. From this perspective, questions of retention and progression might be better indications of learning than performance on a standardised but decontextualised test. Similarly, much recent government policy in the UK has advocated the importance of student motivation (e.g. DfES, 2005:4, emphasising motivation as a way of engaging "hard to reach" learners"), and almost by default, many educational evaluations focus on whether students liked some new approach or other.

This, however, raises issues that cannot be addressed pedagogically. What is the most appropriate measure to use when trying to determine the effectiveness of some pedagogic intervention? At a fundamental level, this calls into question what counts as learning, and knowledge, and how we come to judge a learner's claims to knowledge as legitimate. It is this issue of legitimacy that will be taken up in the next section.

The politics of co-construction

Considering how best to judge the appropriateness of particular pedagogic approaches raises the question of what learners are learning. This in turn has implications for what is accepted as evidence of learning.

This can be illustrated using Wenger's case study of claims processors in an insurance company (1998), introduced earlier. These individuals were expected to process insurance claims using a form prepared by financial specialists. Because they did not understand the financial model that the form represented they simply had to enter data and report the output. Their learning was about their professional identity, and specifically the marginal position they held within the organisation. This exclusion from responsible, authoritative discussions is what the form came to mean to them.

Learning exclusion and marginalisation in higher education

Wenger's case may illustrate exclusion in a professional workplace, but does this have relevance for higher education? Arguably, in light of recent governmental policy, it does. Higher education has been criticised for being elitist and exclusive, and a participation rate of 50% of those aged 18-30 was set for 2010 (DfES, 2003). This, combined with drives towards managerialism and public accountability, have produced concerns about how teachers can cope with massification, diversity, student retention and the assurance of the quality of provision. This, it has been argued, has resulted in a more industrial model of higher education, in which many students are seen as in deficit, or as a problem.

In a mass system, students are no longer constructed as scholars to be handcrafted, but as entities in an industrial process. Access policies have created a moral panic over standards and 'dumbing down'. There are contamination fears expressed in the idea that massification and the entry of 'non-traditional' learners presents a threat to academic standards. (Morley, 2003, p. 130)

It seems unlikely that viewing students in this way will result in them being active co-constructors of valued knowledge.

It is also worth noting the ways in which technology has been implicated in this structuring of the system of higher education. The Dearing report, which has been identified as one of the key policy documents about technology and higher education in recent years (Conole et al, 2007), provides an interesting example in this respect.

The new interactive media, offering adaptive feedback and student control have the potential to support independent study, but only if fully developed, tested and maintained. [...] Many staff would seek to spend some of their time on development of learning materials, because these will enshrine the core of their teaching. [...] IT methods must achieve their promise of greater efficiency both by improving the quality of student learning, and by amortising the cost of development over large student numbers. (NCIHE, 1997: Appendix 2)

This account seems curiously detached from the pedagogic discussions outlined earlier; an economic rationale dominates the discussion and leads to advocacy of resource-based learning as the best hope for a system faced with ever-diminishing levels of resource per student. There is no suggestion that this is a

necessary evil or is second-best in some way; indeed the almost religious connotations of teachers 'enshrining' their knowledge in resources portrays this as a positive and virtuous way forwards.

However, closer reading of the report reveals a less desirable picture (Smith & Oliver, 2002). In relation to technology, students are portrayed as passive, except at the point at which they choose a course of study. (Courses are described primarily in terms of costs and outcomes, in line with the wider economic argument in the report.) Once a choice has been made, they are 'developed', but are not talked about as being active in this process. The implication is that their education is something done to them by higher education. Moreover, lecturers are not associated with teaching at all, except as something that they will have to give up in order to focus on developing high-quality resources. A gulf is created between teacher and learner; no sense is given of how this very remote mediation can be overcome to foster a meaningful sense of 'co-construction'.

This line of planning was taken still further in the business case for the UK's e-University:

As the learner progresses through the courseware, there is the opportunity to ask questions by selecting the associated 'chat' channel in the toolbar. In response, a chat window opens and the learner is greeted and invited to describe the assistance sought, in text form. The person who answers the questions is part of a call centre and is specifically trained to answer questions about the courseware. [...] If the mentor is unable to answer a question, it is referred to a tutor with superior subject expertise, who returns a full answer to the learner by e-mail within a set period. (PriceWaterhouseCooper, 2000)

Any sense of relationship between teacher and learner is stripped away (because it is too costly), the only sense of interaction being at several removes, via email, and without much sense given of opportunities for dialogue.

It is hardly surprising that recent writing about Web 2.0 technologies – the "social web" – carry with them a sense of optimism and interest in rekindling the social elements of higher education (e.g. Franklin & van Harmelen, 2007). However, it would be all too easy to assume that simply providing social software will solve the social problem; the situation is likely to be far harder to resolve than this.

By leaving the freshman seminar at the margins of institutional life, by treating it as an add-on to the real business of the college, institutions implicitly assume that they can "cure" attrition by "inoculating" students with a dose of educational assistance without changing the rest of the curriculum and the ways students experience that curriculum. Unfortunately, like other addons, such strategies do little to reshape student academic experience. (Tinto, 1999:7)

It is clearly not enough just to make such technologies available, nor even to exhort students to make use of them. Instead, if the situation represented in the policies above is to be avoided, it will require reconsidering how we view and treat students.

Creating structures of inequality

Positioning teachers as information providers and learners as needing information is pedagogically dubious; learning is obviously more complicated than simply consuming – or merely accessing – information. However, positioning learners as somehow in 'deficit' is only part of the problem. The root of the problem lies in the systematic separation of teachers from students in the first place.

Focusing on 'the learner', and on ideas such as 'learner needs' or 'student responsibility', can become a means not only of shifting responsibility, but also of pathologising, labelling and containing people in relation to different constructions of 'difference'. (Haggis, 2006)

This process – an example of 'othering' students so as to emphasise their difference from us – can be seen in many of the assumptions that form the foundations of research, policy and practice. For example, Laurillard's conversational framework is a valuable and widely used point of reference for practice, research and policy in the field of e-learning. However, even this valued model presents a systematic difference between teacher and learner: teachers are the ones who structure tasks, control the environment for learning and direct the learning process. This inscribes inequality into the model. It has also led to confusion: in the revised edition of her book (2002), the figure is extended to try and account for students' interactions with their peers, to try and explain how more collaborative pedagogic practices operate.

This situation could easily be avoided. Changing the figure's labels – for example, to 'person one' and 'person two' – would show a difference in what each of the people involved in some example of learning needs to do without fixing them into one position or the other. Nor would there be any need to complicate the figure by trying to incorporate other students as a special case. Even treating the terms as descriptions of practices, rather than people – so that individuals could swap between them at different times, depending on the situation – would be sufficient to avoid commitment to an essential division between 'us' and 'them' that then needs to be bridged.

What this example illustrates is a problem with how our definitions and assumptions have shaped our understanding of current practices. It would not be necessary to involve learners in the co-creation of knowledge if they had not previously been excluded from this by definition.

Critical responses to assumptions of difference

Even if essential differences between students and teachers have been assumed in the way higher education is currently structured, constructive responses are evidently possible. One response would be to draw on Freire's work (1970) on the pedagogy of the oppressed, for example. Although this was originally developed in relation to perceived political injustice and involved the development of adult literacy, it has been taken up in or adapted to suit a broad array of educational settings (Gadotti, 1994). Freire explicitly contrasted the 'depositing' (or "banking") metaphor of education that he saw in formal educational contexts with an approach based on problem-posing, the purpose of which was to confront people with the inequalities and injustices that others saw

in their situation and then to support them as needed in their engagement with these issues. He explains these approaches in terms of their tendency to 'humanise' or 'dehumanise' – to treat people as capable and active or else somehow as less than fully human, and in particular, as less capable than the person acting as a teacher.

Freire's pedagogy still involves differentiating between people, but this differentiation is based on historical context and perspective, not absolute capability. Teachers are different from learners in that they have the responsibility to bring issues to learners' attention, and then to help them if they need it. However, it is this process of raising awareness through problem posing and support that makes them a teacher; they are differentiated by how they act, not by immutable qualities that define who they are. Learners may well go on to teach, and teachers may well go on to learn. This practice-oriented perspective seems to offer a new way of thinking about the practice of co-constructing knowledge with learners, which will be returned to below.

Implications for the practice of co-constructing knowledge

The preceding discussion portrays a structural inequality in higher education and one possible response to it. However, as with any generalisation, there are exceptions to this pattern. People are already co-constructing knowledge, and in many cases are doing so in situations that do not presuppose structural inequalities. Problem-based learning (Savin-Baden, 2000), for example, can be used to share problems with learners that are directly relevant to professional contexts; action learning sets involve learners sharing problems and possible solutions with others who are typically treated as equals; and doctoral reading groups may involve groups of staff and students grappling with issues in current research.

These examples focus on postgraduate or professional learning; however, such practices can also be seen elsewhere in the curriculum. Creative disciplines such as art, architecture and design, for example, may require students to prepare work for 'crit' – an open process of comment in which peers, tutors and even the public can offer feedback. There are also examples undergraduate students being asked to undertake research projects (e.g. Zamorski, 2002). However it can be difficult just to expect students who have no prior experience of working in this way to do so for the first time. In Freirian terms, having internalized the image of themselves as needy and in deficit, the first problem they may need to overcome will be to rethink how they see themselves in relation to formal educational.

There are implications for people acting as teachers, too. Re-conceiving of learners as being different in their historical situation, rather than in kind, highlights a need for teachers to identify similarities and points of connection with them. One way of doing this may be to keep in mind the dilemmas and difficulties that form part of all disciplinary research.

The alternative seems to be that the embedded, processual complexities of thinking, understanding, and acting in specific disciplinary contexts need to be explored as an integral part of academic content teaching within the disciplines themselves. Part of the complexity of disciplinary processes is their contested

nature; it is unlikely that two academics even in the same field would articulate and model such processes in exactly the same way. (Haggis, 2006)

Viewing engagement with a discipline as a common journey (the original meaning of 'curriculum') – albeit one that the teacher is further along than the learners they are working with – may help re-establish a sense of connection. This is true whether or not students end up like their teachers or go on to do something quite different; that is a matter of exit from a discipline, rather than its approach, which forms the heart of most curricula. Certainly writers such as Rowlands (2000) have made strong arguments for the importance of disciplinary orientation to being a good teacher, and to being able to communicate a sense of passion to students.

However, an appeal to disciplines is not a simple solution to this issue; disciplinary knowledge can be seen as being excluding and problematic. Brookfield (2007), for example, has argued that conventional disciplinary knowledge has served to exclude groups and perpetuate privilege – what he describes as the 'whitestream', by analogy to 'mainstream' but emphasising the political and cultural nature of decisions to value particular kinds of knowledge. He argues that attempts to diversify curricula by bringing in alternative positions can be understood as examples of 'repressive tolerance', in which 'otherness' is acknowledged but still positioned as 'not normal'. Rather than eliminating inequality, he argues, such pedagogic approaches perpetuate it. The only viable alternative, he suggests, involves abandoning conventional knowledge in order to focus on alternative approaches.

This radical alternative to conventional approaches to higher education is difficult and unsettling. It calls into question the purpose of higher education and the values that it serves. Nonetheless, it raises important questions about legitimacy and inclusivity, and countering it means being clear about why particular kinds of knowledge (and knowledge production) are considered appropriate or inappropriate.

Clearly, not all forms of knowledge are equally valued in higher education. It has long been recognised, for example, that disciplinary communities judge what counts as knowledge in different (if sometimes overlapping) ways (e.g. Hirst & Peters, 1970). Yet such traditions manage to co-exist and respect each others' differences, even if controversies and disputes exist (Becher, 1989). Collectively, they also face common issues in deciding which kinds of knowledge claims and knowledge-building practices they feel should be permitted within a formal educational context. Is 'remixing' resources an example of "copy and paste literacy" or an act of plagiarism (Perkel, 2006)? Does a participative, Web 2.0 model of knowledge building value 'common sense' and 'wisdom of the crowd' over principled and disciplined knowledge in an inappropriate way (Franklin & van Harmelen, 2007)? Should there be differences in the way that students use technology in formal education compared to how they are comfortable using it at home (Selwyn, 2006)?

Questions such as these illustrate how disciplinary scholars are actively policing the boundaries around what they are willing to accept as 'knowledge' within their domain. This has obvious implications for how learners may act and what resources they may draw upon as they try to co-construct knowledge with

others in a formal educational context. However it must be recognised that these are important questions. Sometimes it is necessary to distinguish between the kinds of practices that are appropriate inside and outside of formal education (e.g. Lankshear and Knobel, 2004). If disciplinary knowledge gives useful purchase on the topics and problems it pertains to, then it is important for the whole enterprise of higher education that it can continue to do so in a way that has integrity. Having integrity is not, in itself, the issue. The problem arises when disciplinary communities can offer no acceptable defence for their choice to exclude particular kinds of knowledge work, either because the reaction is unjustified or because the alternative has not been adequately considered. Moreover, as practices of knowledge construction continue to develop within societies, disciplinary communities will have to carry on debating the boundaries they create, the practices they exclude and the people whom they permit to see themselves as outsiders as a consequence of this.

Conclusions

As can be seen, consideration of the idea of co-constructing knowledge with learners produces several challenges. At the level of epistemology, the phrase is relatively unproblematic, but gives little purchase on precisely what learners learn or how best they go about learning it. Pedagogically, matters are more complicated, in that questions arise as to which approaches are better than others in achieving particular ends, with conclusions being produced either analytically or empirically, or both. Politically, however, the phrase raises several controversies. There are questions about what learners should be learning in the first place; the legitimacy of different approaches to co-constructing knowledge (for example, when something counts as plagiarism); and about the differences that are assumed to exist between people who are teaching and learning.

Arguably, it will be possible empirically to claim that progress has been made in terms of the pedagogic questions. Particular theoretical perspectives or measures of ability can be used to judge levels of success over time, even if debate persists about whether this theory or measure is the most appropriate one to be using. The same cannot be said of political issues, where positions about what should count as a credible way of producing and claiming knowledge need to be taken and defended. Political issues will require revisiting over time to ensure that positions remain appropriate.

Practically, however, it is our perspective on learners and teachers – how we think of and talk about them – that may represent the most pressing challenge. Viewing learners as ‘in deficit’ or as passive consumers immediately creates barriers to the possibility of co-constructing knowledge with them. Instead, rather than treating learners and teachers as essentially different kinds of things, it may prove more productive to view them as people with different experiences, interests and responsibilities, and to conceive of teaching in terms of practices that people perform in a given situation, rather than as categorical roles. After all, teachers are people too, and whilst they may have more experience of engagement with their discipline than their learners, the difference is one of degree rather than kind. Taking this perspective, co-constructing knowledge with learners becomes a much more approachable challenge: when faced with disciplinary problems, teachers are learners too. If we have a common endeavour, what reason would there be for teachers and learners to prevent each other from trying to construct knowledge together?

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