Options in learning management systems software. Approaches to research: recognising what people can do that computers can’t

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Abstract
Research is a fundamental part of education. Researching online learning environments is informing the work of schools and school education jurisdictions. It is argued here that using approaches to research that recognise the place people hold in school education and technology research helps inform the methods of the research conducted. Technological determinism has tended to imbue the language of school education technology policies. This has seen the power and control humans can exercise over approaches to school education research and policy-making, removed. As there has been considerable work already conducted on the technical aspects of learning management systems software, this paper focuses on putting humans back into the research picture by recognising what people can do that computers can’t.

Introduction
Researching software options in school education is complex and problematic, and it requires us to recognise two related and obvious factors: interactions occur between people online; and that these interactions are enabled with the use of the technologies. Research of software such as online learning systems then, must focus both on the technology, namely the software, and also on people. People construct and conduct the research; people design and make computer hardware and software; people plan and implement school organisational structures and policies; people construct the markets for the deployment and use of computers in schools; and people use the software. Research of learning management systems, on the other side of the coin, is not just a human question to the exclusion of technical issues. Researching learning management software systems requires recognition of the interplay of both pedagogical and technical issues, bearing in mind what students and teachers in schools learn using a learning management system, reflects what people decide can be done with digital technologies.

Context
Around Australia, online learning environments and in particular learning management systems are being investigated for use in schools. Both open source and proprietary options are being investigated (Moyle, 2004). Learning management systems have the potential to be a major cost item for governments and schools as they consider supporting online learning in both face-to-face classrooms and distance education. Definitions of learning management systems tend to be contested, and so for the purposes here, learning management systems are considered to be pieces of software intended to facilitate learning through presenting and managing content; providing tools for communication and research; and providing mechanisms for identity management, assessment and reporting. Learning management systems software aims to provide a synthesis between the communications functionality of email, bulletin boards and newsgroups, with online delivery and management of course materials and information available through the World Wide Web (Britain & Liber, 1999). The challenge for those working in schools and school sectors, and for vendors, is to produce and use learning management software tools in ways that facilitate learning in new and improved ways and continue to respect and honour the history and tradition of the principles of equity and social justice that have consistently underpinned the provision of schooling in Australia (Moyle, 2003).

Principles
In painting a context for this paper, I would like to forward the following principles as being central to how we should consider the role of schools and schooling in the 21st century. I propose the following contextual
principles as a backdrop against which we can consider teaching and learning and the options in learning management systems. It is my view that

- schools are part of the community not separate to it and education requires us to be critically concerned with the relationships that exist between school and the community, and school and society;
- the role of schools includes the educational, social, emotional and ethical development of people;
- post-industrial society has seen altered labour markets with their patterns of entry points different to that of the past;
- the community lives with the consequences of the success or failure of our schools;
- curriculum authenticity (where authenticity refers to curriculum grounded in the experiences and life circumstances of students and their communities) is at the heart of education;
- learning is a dynamic, cooperative process where knowledge and skills are applied and new understandings are developed; and
- ongoing development of a school’s curriculum should be built by a learning community, characterised by its collaborative nature, its use of negotiation and its ability to undertake critical reflection (Kemmis, Cole & Suggett, 1983).

Relationships are important

Underpinning the principles above, are the relationships teachers have with their students and the school community. Learning is a collaborative activity that occurs within a context; learning rarely occurs in isolation. The personal bonds between teachers and students can influence much of the learning that occurs through schooling. An often reported factor for success at school is the quality of the relationship between the student and the teacher (Connell, 1985). The importance of the student-teacher relationship is commented upon by students, parents and educators. The following parent comment is illustrative:

_The social importance of what happens in the classroom is the central fundamental issue of the relationship between the child and the teacher. And the fact that no matter how much gorgeous, add on toys we have, we must never, ever break that bond. That’s central to the whole education process_ (Parent comment, 1999).

Relationships therefore are fundamental in teaching and learning. Learning is a process of guided discovery, not simply one of passively receiving information. Assuming that digital technologies of themselves improve student learning outcomes is to ignore research which indicates that the personal bonds between teachers and students can influence much of the learning that occurs through schooling.

We should not be looking for an online learning environment then, that replaces the student-teacher relationship; but looking for one that recognises the important place humans have in the educative process and that enhances that relationship. Identifying the role a learning management system may play within planned teaching and learning processes requires identifying the required learning principles and articulating the pedagogies to achieve those processes and outcomes. Technical specifications can be evaluated according to how they meet identified pedagogical requirements. Together the pedagogical and the technical specifications then, can be used to inform the research, evaluation and selection of learning management systems for use in schools. A central question to ask in identifying how online technologies can enhance teaching and learning requires us to ask ‘what can people do that computers can’t?’

Some complexities

Using teaching and learning principles as a starting point for researching options in learning management systems brings with it some complexities. As there is much work on researching the technical aspects of learning management systems (Educause, 2003), here, I focus the discussion on the importance of recognising the place of people in school education and research. I begin by proposing that technological determinist approaches to the research of learning management systems in schooling should be avoided. I argue that to avoid technological determinism in school education research requires the recognition that computer hardware and software, public policies and markets are constructed by people and that complex approaches to researching options in learning management systems are therefore required.

Throughout the forthcoming discussion I use the question ‘what can people do that computers can’t?’ to focus attention on the different roles technologies and teachers play in the processes of teaching and learning.
Avoiding technological determinism

An overarching complexity in the research of and in policy making about online learning is one of language. Research about digital technologies in school education has tended to suffer from reviewers taking technologically deterministic approaches to their work (Bromley, 1998). The language of ‘technological determinism’ suggests that these technologies emerge almost from ‘thin air’ and transform society as they are diffused. As Robin Williams (1999) states:

> policy-makers and the public have often taken the course of technological progress for granted – as if technology developed according to some predetermined technical rationality – and assumed that the content and direction of technological innovation were not amenable to social analysis and explanation (Williams, 1999, p. 41).

A technologically deterministic view suggests that technology is developing according to its own laws and timeframes (with the pace associated with these timeframes often described as ‘rapid’), and apparently without the use of the power and control that humans can exercise. The following except from a Department of Education, Science and Technology (DEST) report illustrates this:

> ... policy makers are confronted by the daunting challenge of keeping up with the pace of technological change, and with the socio-economic outcomes of technological change, which are providing a radically different context for educational policy (Kearns & Grant, 2002, p. 5).

As schools and school systems research the options concerning learning management systems it is time for our language to mature beyond that of technological determinism. To do so however, requires us to recognise that the investigation of questions in school education bring with it characteristics that make school education research distinctive from other disciplines.

Approaches to research in school education

During the twentieth century the field of school education drew upon the related disciplines of sociology, psychology, and the natural sciences. This was in an attempt to establish ‘education’ as a legitimate discipline, grounded upon a scientific base (Giroux, 1981). Educational research therefore has tended to be dominated by those using research approaches underpinned by positivism drawn from these related disciplines (Giroux, 1981). Positivist research is premised on the view that the methods of the physical sciences can be applied to questions of social sciences (Usher, 1996).

More recently, school education research is being seen as complex, multidisciplinary and where social and cultural issues are addressed as part of the research method (Lingard and Blackmore, 1997). This complexity of school level research is accentuated when considering the deployment of software as a central component of school education. Selecting research models to investigate options in online learning management systems then, requires the adoption of strategies that understand approaches for research of technologies but that are also appropriate to social research. There is much uncertainty in the use of online learning systems in school education, so using research approaches that take account of rather than try to dismiss or diminish social problematic enables outcomes from these research approaches that are cognisant of and bear relevance to contexts within which the questions are being asked.

Characteristics of social research

‘Social research’ tends to be a global term under which sits a wide range of research theories1, however, consistent among all these social theories is that people are central; social research is about people. Such research, I argue, requires the research process to be an iterative, two-way process oscillating between theory and practice where both the ‘what’ and the ‘how’ of the research are equally important. It requires us as researchers to bring our own assumptions into the open and to put them under scrutiny. The purpose of using social theory as part of the research of online learning management systems requires the development of a conceptual framework that allows us to make sense of the data generated through the research methods used while recognising that the dynamics, content and context of social relations as well as the functionality of the technology inform the decisions we make about using learning management systems software in teaching and learning in schools.

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1 Social research can include (for example) critical theory, postmodernist and post-structuralist theories; narrative theory, feminist epistemologies and ethnolgraphy. Social research methods incorporate reflexive approaches to research which can include participant-observation and interviews, as well as sampling approaches such as those used in surveys, questionnaires and document research.
Technologies are socially constructed

Research of technological matters, where ‘technology’ can be considered to be ‘any practical application of scientific methods … the science of means’ (Scruton, 1982, p. 459), has also tended towards the use of positivist research approaches (Hakken 1999). Reducing meanings to behaviours where the assumption is made that positivist approaches to research are value-free however, ignores the view that the construction and use of technologies are socially constructed.

Computer hardware and software such as learning management systems are created by people: the technologies are not neutral or arbitrary in either their construction or deployment. There is no ultimate truth either, about how learning management software ought to be constructed or used. Software is created within social contexts and is the outcome of negotiations between individuals, groups and institutions, where the cultural meanings of the technologies can be seen in the language in government policies, vendor contracts and in the use of the technologies made by people.

A cursory sweep of the history of the development of computer hardware and software shows us that computer hardware and software are designed and built by people who have their own socially constructed views about what is ‘good’ or preferable in certain circumstances. For example, Microsoft software originated from the motivation that desktop computers, designed for individual use were Bill Gates’ main market focus: hence personal computers (i.e. PCs). The Linux operating system in contrast, in part is based upon the view that computers should be able to be easily networked together (Torvalds, 2001).

So, to revisit the question ‘What can people do that computers can’t?': people can create technologies and use them in whatever ways they choose, but to do so require the language that reflects that frame of mind. Placing the research of options of learning management systems into a social context though, enables us to look at what we want the software to do; what we want people to do; and to identify what it is we want students to learn and how. Using social research methods about options in learning management systems then can enable input into schools and school systems’ digital technologies policies because like software, public policies are also socially constructed.

Public policies are socially constructed

We can think of public policies as the authorised official ‘talk’ of the State; where the policies are constructed by people (Apple, 1993). Such an approach recognises that what constitutes a public policy is often contested. Multiple texts labelled as public policies including governments’ legislations, white papers, government departments’ statements labelled as ‘public policies’, departmental strategic planning documents and requests for information or tender documentation. All of these texts have the legitimacy and authority of the State.

Government documents however, are more than artefacts. Public policies include the processes that lead up to fixing the meaning of the documents in time through the creation of the texts, as well as the texts themselves and therefore are in a state of ‘becoming’ (Ball, 1994). Ways of understanding public policies though, can be found in the nature of the discourses through which the policies are framed and the debates around them are expressed (Reid, 2000). The way that the Ministers of Education portray the departmental-wide Microsoft licence agreements illustrates this point. In 1999 the (then) Minister of Education announced that following negotiations with Microsoft the government had signed a whole of department licence for three years. The Minister stated that “cost savings are conservatively estimated at $500,000 over the three years of the agreement” (Wells, 1999, p1) and that the Microsoft initiative would enable schools in Queensland to include Microsoft curriculum in their teaching and learning. The focus of this Minister was on the instrumental outcomes possible from a contract with Microsoft rather than on the longer-term policy, education and social implications of such an agreement. The Australian states’ respective Microsoft Enterprise Agreements however, starkly highlight that the use of software in school education constitutes a market for vendors and it is a market constructed by people: by vendors and policy makers (Moyle, 2003). Recognition that markets are constructed by people and that policy-making can aid in this process then, forms part of the context within which options for learning management systems can be considered.

Constructing schools as markets

Researching options in learning management systems then requires recognition that markets too are social constructions (Marginson, 1997) where there are different interests, roles and behaviours for the characters involved: that is the vendors and governments and/or schools. The legitimate role of vendors in the marketplace
is to make profits and the intention of governments and schools is to provide services to the community.
Constructing schools as marketplaces however, is not a new idea. James Rorty made the following observation in 1934: ‘a democratic system of education … is one of the surest ways of creating and greatly extending markets for goods of all kinds and especially those goods in which fashion may play a part’ (Rorty, 1934 in Klein: 2001, p. 87).

Markets construct powerful relationships based on dominance, submissiveness and control (Marginson, 1997) in order to make profits.

The construction of a ‘market’ is determined by the political and the discursive, including economic knowledge joined to power … [where] economies are never innocent of power. They are constituted by systems of domination-subordination and control, and help to contribute such systems in return (Marginson, 1997, p. 15).

If schools are constructed as a market, then it is an easy step to consider those within the market as consumers or as customers. Since markets are associated with unequal power relations, constructing students and parents within education markets places them into subordinate positions of power. It is a mistake to believe that vendors’ first priority of altruism; it is not. Vendors’ first priority is to make profits: this is their raison d’être, otherwise they would go out of business.

Why is this important? Constructing knowledge

If we accept that school populations are being constructed into commodity markets, then students and teachers should be made aware of the implications of choosing one company over another for the supply of particular products. Further, this raises the question about whose knowledge should be preserved or already is being communicated through schools. To allow knowledge to go unexamined hides the social interests it supports and works against the use of social relationships to generate meanings. Teachers ‘may fall victim to the myth that Western knowledge is discovered not negotiated, a myth perpetuated at all levels’ (Christie 1990, p. 2). Instead, it should be acknowledged that knowledge is really a study in ideology linked to socially constructed human interests (Giroux, 1981). In terms of proprietary learning management systems then, the human interests of vendors, governments and schools are components to be acknowledged and taken into account in the research to be undertaken.

The choices are people’s

Research can inform decisions about what directions to take concerning the acquisition, deployment and use of software. Software vendors like to be the first company to gain a contract to provide a learning management system as this enables them to put down their software and standards into a ‘green field’ site. Under these circumstances, unless specific strategies are put in place at the beginning of this process, the capacity for a company to ‘lock-in’ a school or sector is high.

Wacquant (1992) argues that symbols and symbolic systems can be considered not only to mirror social relations but can also help to constitute them. If we consider technologies as symbolic of what we value in education, then delegating to the market the responsibility for social choices about what hardware and software or what deployment models of information technology (IT) infrastructure are to be used in school education is to accept the interests of the market and structure ourselves into models of dependency. Instead of the State facilitating a market-based digital technologies culture, schooling should have as its primary focus, the best interests of all students where the aim is to achieve democratic social relations, and where there is the promotion of tolerance and respect. The primary motives for profit by vendors however, is at odds with motives of equity and social justice; but the choices between these options are for humans to make.

Conclusion

It has been argued here then that approaches to research for investigating options in learning management systems require recognition of the interplay between technical and pedagogical issues. In this paper I have focused on highlighting the role humans play in research of technology in school education. Given people construct and conduct research; people design and make computer hardware and software; people plan and implement school policies; people construct the markets for the deployment and use of computers in schools; and people use the software, it therefore follows then, choices about what digital technologies including software are used in schooling and how these technologies are utilised and deployed are in the control of people and have social consequences. These choices are made by people: technologies don’t make these choices; people do.
References


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