

Distinguishing the Field of Educational Technology

Laura Czerniewicz

University of Cape Town, South Africa

Laura.Czerniewicz@uct.ac.za

Abstract: Drawing on what researchers and professionals in the field internationally report, this paper reviews educational technology as an emergent field. The review reveals the continuum of perspectives on what the field is, and how it is bounded or fragmented. The paper describes the field from two perspectives: the professional and scholarly and considers how the forms of knowledge differ and overlap in each domain. It posits some dichotomies which may frame the field such as science/ social science and positivist/ post-modernist. Finally the paper provides conceptual frameworks for distinguishing fields from each other and suggests what the categorisation of the field might mean, especially considering its emergent status in a rapidly changing context.

Keywords: Educational technology, e-Learning, profession, discipline, field, knowledge

1. Introduction

This paper considers the field of educational technology in terms of its nature and its distinctiveness. Drawing on the views of researchers and professionals in the field itself, the paper reviews the forms the field takes, and describes the basis on which it can be differentiated from other fields. That educational technology is an acknowledged field around the world is not in doubt. It is called a young field by numerous researchers (Conole, Dyke et al., 2004, De Vaney & Butler, 1996, Dueber, 2004, Jones, 2004, Luppicini, 2005) and acknowledged as a field across the world: from Portugal (Coutinho & Gomes, 2006) and Spain (Graells, 2004) to South Africa (Czerniewicz, Ravjee et al., 2006) and Australia (Alexander, Harper et al., 2006).

Although there is general consensus that the field exist, its nascent state is evident in the lack of agreement about its name¹ Depending on context, community and related factors, it may be called by such variants as Elearning, Networked Learning, Telelearning, Instructional Design or Telematics. An umbrella term, educational technology –one increasingly common- is used in this paper, and encompasses the activities and knowledge domain where education and technology intersect.

While such activities and such a domain are acknowledged to exist, there is disagreement about the extent to which the field is coherent, contained and bounded. Impressions of the field seem to lie along a continuum, ranging from a perspective on one end which considers the field to be unified with common postulates, ranging to a version of the field as one coming out of its infancy to a point of maturity where it is possible to seriously formalise it. The far end of the continuum sees it as fragmented and incoherent.

The “unity” view is framed by a belief in consensus, and agreement about the nature and precepts of the field. Thus a confident statement from Dutch researchers asserts “the consensus about substantial elements of the knowledge base and about the nature of I.D [instructional design]”(Elen & Clarebout, 2001) and related views align themselves with a Kuhnian version of a field which states that “Despite occasional ambiguities, the paradigms of mature scientific communities can be determined with relative ease” (Kuhn, 1962). The most explicit of these positions is expressed by Merrill and the ID Group who insist that:

~

Another view is that the field is “growing up” and is ready to reach agreement on key elements. An example of this process to reach agreement regarding the rules and elements of the field can be seen in a 2006 IT (Instructional Technology) Forum paper which set out to explicitly formalise and confirm key aspects of the field. The authors invited the more than 2000 members of 45 countries (at the time) to “a dialogue about the specific language of instructional design and some new ideas we’ve developed about how to describe our field.” They “propose that Instructional Theory has now reached a level of development where a common

¹ Authors elsewhere have described this in more detail and suggested what this might mean or imply (Czerniewicz et al., 2006, Moll, Adam et al., 2007).

knowledge base with a consistent terminology would greatly facilitate the future development of knowledge in this important area” (Reigeluth & Carr-Chelman, 2006).

Another perspective is expressed by authors noting and decrying lack of coherence in the field. The field has been described as “amorphous” (De Vaney & Butler, 1996) and “disjointed” (Bruce & Levin, 1997). The fluidity of the field in Australia led two authors to suggest that it is hard to distinguish the field from any other related field. They said that the current enterprise has neither simple nor singular parameters that distinguish it from other disciplines or fields of study (Hedberg & McNamara, 2002). Another Australian article begins with the suggestion that there is virtually no body of knowledge underpinning work in the field.

And finally, on a note of despair is the doubt that the field exists at all:

One might have thought that location on the continuum of perspectives would be clustered by specific groupings, countries or location: this is not the case. The range of views - the differences and agreements - regarding the coherence of the field is spread across the globe.

2. The field as professional

Simultaneously and in overlapping ways, a new professional field is coming into being and a new knowledge field (or professional discipline) is emerging. The differentiation is not clearly demarcated because in educational technology, the scholars and professionals in the field may well be the same people²

communicate that knowledge? What are the differences between the way knowledge is experienced and expressed in scholarly and professional contexts? Writing in the field of teacher education, Hargreaves (1996) differentiates the different forms of knowledge (see table below) and lobbies for a new order where professional knowledge is regarded as a valued resource.

	Scholarly Knowledge	Professional Knowledge
Epistemology	generalised codifiable rational public written explicit question-oriented propositional in form	context-specific difficult to codify also moral and emotional private or inter-personal oral tacit practical metaphorical, narrative in form

Adapted from (Hargreaves, 1996)

The existence of substantial research over many years is testimony to the importance of tacit knowledge in professional practice³. In educational technology this is an important and neglected area of study in two ways, as we need to analyse both how educational technology professionals express and share their knowledge, as well as how technology mediates forms of knowledge within professional academic communities.

Rare commentary on these issues in the educational technology literature is found in Jones who draws on the work of Barley and Orr to suggest that educational technologists may draw on new knowledge but not produce it (Jones, 2004). This raises a crucial point about the relationship between research (knowledge

3. The field as scholarly

The most common way to describe a scholarly field in a higher education institution is as a discipline. A discipline has been described as

and

Stability, recognition and boundaries are therefore generally associated with the concept of a discipline. Given that these are still so contested, it is unsurprising that educational technology seems more often referred to as a field than as a discipline.

Yet the field is also described in disciplinary terms of one kind or another. Thus, a discussion paper published on a online forum makes the case forcefully that it is a discipline and indeed a scientific one. The paper opens with the statement that, "There is a scientific discipline of instructional design" (Merrill et al., 1996). Elsewhere it is referred to as a relatively new discipline (Conole et al., 2004) or as a new "inter-discipline"(de Laat, Lally et al., 2005), multidisciplinary (Whitworth & Benson, 2004) and inter-disciplinary (Jones, 2004).

The distinctions between these terms are relevant to a framing of the field. Stathern usefully disentangles them when she defines multi-disciplinarity as the alignment of skills from different disciplines but interdisciplinarity as involving a common framework shared across disciplines to which each contributes its bit. She says that "interdisciplinarity ...isa tool

and

This approach is a problem for those who have taken a traditional empiricist view of the field, as succinctly expressed by a well known US professor:

Although this statement may appear extreme, the aspiration for the field to be considered as a science with a single overarching paradigm as the natural sciences are believed to have, seems to be a common one. There are however, many researchers who consider the field to be a social science with all its attendant challenges:

and

The issue is not yet resolved. This observation made almost two decades ago remains true today:

The tension is also expressed as a positivist/ modernist and post-modern dichotomy. On the whole the most significant cluster of approaches to scholarly work in the field internationally could be described as positivist. (This impression itself would be worth verifying.) However, there is a cluster of research examples which are based on post modernist principles and argue that post-modernist approaches provide valuable lenses to the field (Bryson & de Castell, 1994, De Vaney, 1998, De Vaney & Butler, 1996, Hlynka, 2003). These views argue for pluralism, criticism rather than evaluation, constant rethinking of beliefs and technology, a focus on power relationships and the highlighting of the relationship between corporate interests and technologies in the classroom (De Vaney, 1998, Hlynka & A, 1992).

As a field educational technology (often in the guise of instructional technology or instructional design) is most established in the USA where it has been observed that six studies from 1970 to 1994 have already examined its identity as a field (Carr-Chellman, 2006). The USA is the only place where books on the nature of the field have been written; interestingly those too tend to refer to the field rather than to the discipline. It is of note that the more recent books *Instructional Technology, the Definition and the Domains of the Field* (Seels & Richey, 1994) and *Educational Technology The Development of a Concept* (Januszewski, 2001) refer predominantly to the field as professional and applied. While this might suggest that their focus is largely on professional knowledge and domains, the references to research agendas and to scholarly pursuits also suggest that the overlaps of the professional and scholarly in the US are substantial.

4. Differentiating knowledge fields

Academic fields or disciplines are defined partly in terms of what they are not, how they are distinguished from other fields or disciplines. Although writing about the formation of anthropology, Clifford's observations are pertinent. He notes that a discipline most actively defines itself at its edges, in reaction to what it says it is not. It does this by selectively appropriating and excluding elements that impinge, influences that must be managed, translated, incorporated. It draws lines to mark frontiers (Clifford, 2005).

Classifications may be expressed in different ways, ranging from structural to bureaucratic to theoretical.

The way the universities are structured may be crucial to the identity of the field in terms of where it is located and concomitantly where it is not located. C

Field identity formation means distinguishing the field from that which it is not. The differentiation process occurs through strategic, resource and conceptual strategies and categorisation processes, none of which are neutral. While the overt boundary-setting process is still in its early stages in the educational technology field, it is evident that approaches to setting the parameters in the field are varied. The common approaches described briefly here provide pointers to an area requiring closer attention.

5. Conclusion

This paper has sketched the terrain as it is perceived by those working in the field internationally. The internal dimensions of the field - its community structures, journals and conferences – have not been reviewed here; the focus has been a consideration of scope, parameters, borders and classification. This nascent professional discipline or inter-discipline is taking undoubtedly shape, inevitably marked by the dichotomies and contradictions demonstrated in the paper. By showing the more common taxonomies of field differentiation, ways of distinguishing the field have been suggested.

Why does all this matter? Newcomers being inducted to the field need to know the parameters of the field and its knowledge base. Members of the research and professional community need to agree where their shared areas of interest, focus, approach and projects lie. Clarifying some of the bigger picture issues raised in this paper will help build a shared language. Agreement of the key elements of the new domain, and agreement about ways of seeing will help build the internal consistency in the field. With researchers and professionals from such a wide range of backgrounds, coherent articulation and integration are necessary. While field formation cannot be prescribed, the process can be made explicit. Sufficient consensus is needed to enable communication amongst educational technology researchers and professionals, and in order to build a credible, legitimate and distinguished knowledge field.

6. References

- Alexander, S., Harper, C., Anderson, T.D., Golja, T., Lowe, D., McLaughlan, R., Schaverien, L. & Thompson, D. 2006. Towards a mapping of the field of e-learning in: E. Pearson & P. Bohrman (Eds) Edmedia World Conference on Educational Multimedia, Hypermedia & Telecommunications (Orlando).
- Banville, C. & Landry, M. 1989. "Can the Field of MIS be Disciplined?" *Communications of the ASM*, 32(1), pp. 48-60.
- Bath, D. & Smith, C. 2004. "Academic developers: an academic tribe claiming their territory in higher education", *International Journal for Academic Development* 9(1), pp. 9 - 27.
- Becher, T. & Trowler, P. 2001. *Academic Tribes and Territories* Open University Press.
- Beetham, H., Jones, S. & Gornall, L. 2001. *Career development of Learning Technology Staff: Scoping Study Final Report* JISC Committee of Awareness, Liaison and Training programme).
- Bichelmeyer, B. 2004. "The ADDIE Model" – A Metaphor for the Lack of Clarity in the field of IDT (Indiana University).
- Biglan, A. 1973a. "The characteristics of subject matter in different academic areas", *Journal of Applied Psychology*, 57(3), pp. 195-203.
- Biglan, A. 1973b. "Relationships between subject matter characteristics and the structure and output of university departments", *Journal of Applied Psychology*, 57(3), pp. 204-213.
- Bourdieu, P. 2004. *Science of Science and Reflexivity* (Chicago and Cambridge, University of Chicago and Polity Press).
- Bruce, B. & Levin, J. 1997. "Educational Technology: media for inquiry, communication, construction and expression", *Journal of Educational Computing Research*, 17(1), pp. 79-102.
- Bryson, M. & de Castell, S. 1994. "Telling Tales out of School: Modernist, Critical and Postmodern stories about Educational Technology", *Journal of Educational Computing Research*, 10(3), pp. 199-221.
- Carr-Chellman, A. 2006. "Desperate Technologists: Critical Issues in E-learning and Implications for Higher Education", *Journal of Thought*, 41(1), pp. 95-115.
- Clark, M. 2003. "Computer Science: a hard-applied discipline?" *Teaching in Higher Education* 8(1), pp. 71 - 87
- Clark, M. 2006. "A case study in the acceptance of a new discipline", *Studies in Higher Education*, 31(2), pp. 133-148.
- Clifford, J. 2005. *Rearticulating Anthropology*, in: D. Segal & S. Yanagisako (Eds) *Unwrapping the Sacred Bundle, Reflections on the Disciplining of Anthropology* (Durham and London, Duke University Press).
- Conole, G. 2004. *The Role of Learning of Learning Technology Practitioners and Researchers in Understanding Networked Learning* Networked Learning 2004 (Sheffield,)
- Conole, G., Dyke, M., Oliver, M. & Seale, J. 2004. "Mapping pedagogy and tools for effective learning design", *Computers and Education*, 43, pp. 17-33.
- Coutinho, C. & Gomes, M.J. 2006. *Critical Review of Research in Educational Technology in Portugal (2000-2005)* Ed Media Proceedings (Orlando,
- Czerniewicz, L. & Brown, C. 2007. *Disciplinary differences in the Use of Educational Technology* International Conference of E-Learning (New York,
- Czerniewicz, L., Ravjee, N. & Mlitwa, N. 2006. *ICTs and the South African Higher Education Landscape in: CHE (Ed) Higher Education Monitor* (Pretoria, Council for Higher Education).
- de Laat, M., Lally, V. & Simons, P.W., E. 2005. *Questing for Coherence: a Synthesis of Empirical Findings in Networked Learning Research in Higher Education* University of Southampton).

- De Vaney, A. 1998. "Can and Need Educational Technology Become a Postmodern Enterprise?" *Theory into Practice*, 37(1), pp. 72-80.
- De Vaney, A. & Butler, R. 1996. *Voices of the Founders: Early discourses in educational technology*, in: D. Jonassen (Ed) *Handbook of research in educational technology* (New York, Macmillan).
- Dueber, B. 2004. *An exploration of the literature of instructional technology through citation analysis*
- Duffy, T. 2003. *Learning Sciences and Instructional Technology Interview with Tom Duffy* Indiana University Bloomington).