In Search of New Metaphors: E-learning as Hypertext

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Abstract:
People use metaphors in their daily communication to explain complicated matters and express meanings and understandings. Metaphors define our everyday realities and guide our thoughts and actions. Traditionally, specific metaphors have been related to teaching and learning: a teacher is often spoken of as a gardener, a guide, or even as a sage on the stage. Similarly, the metaphors of learning as acquisition and the learner as an almost empty vessel are very common concepts in relation to lecturing. Learning is also often understood as participation and collaboration, and these metaphors indicate that teaching and learning are seen as activities that take place when the teacher and the students are together. However, when the use of technology and access to a ubiquitous Internet become a part of everyday teaching and learning, new metaphors are needed if we are to speak adequately about this changed instructional place. Technology shapes the ways in which we teach, learn, and collaborate, and both teachers and learners now have the potential to be present in more spaces simultaneously both inside and outside the classroom. The empirics for this paper stem from a PhD project that was undertaken during a physiotherapy degree programme in Denmark, where e-learning was being introduced for the first time. Guided by a symbolic interactionist approach, one of the research questions concerned whether and how teachers and students in the programme felt that teaching and learning had been changed by e-learning technology. To answer this question, emphasis was placed on the linguistic images, concepts, and metaphors that were used in relation to the e-learning setting. Data were collected from participant observation of teaching, focus groups with the e-learning students, interviews with the teachers, and participation in e-learning design workshops. The findings showed that teaching in relation to e-learning was oftentimes understood through the metaphor of hypertext with hyperlinks leading to podcasts, videos, and other resources on the Internet, which the students accessed from home and which were referred to in the classroom. Moreover, the space of teaching was found to be widened by technology, and learning was sometimes spoken of as a constant selection of links or paths through a landscape of resources and information. This paper will discuss the use of metaphors in relation to teaching and learning generally and to e-learning specifically. On the basis of the empirical material from the PhD project, it will present and discuss the new metaphors that were used in this particular physiotherapy e-learning programme.

Keywords: e-learning, metaphors, teaching, hypertext, physiotherapy degree programme.

1. Introduction

A metaphor can be briefly defined as "any comparison that cannot be taken literally" (Bartel 1983, p. 3)—for example, "The girl is a rose" or "My teacher is a monster"—and we often use metaphors without paying attention to them as images. Lakoff and Johnson (2008) find that metaphors are concepts we live by because they conduct our thoughts and actions. For instance, if we think of our teacher as a monster, it is likely that fear, rather than a quiet state of mind, will guide our interactions with him or her. In research, the analysis of these symbolic frameworks can establish a foundation for understanding people's attitudes and behaviours (Szukala 2011) and, thus, contribute to a depiction of their worldview. Philips (1996, p. 1011) writes that people may be "insulated from ideas coming from outside" and that they "can easily get sucked into this self-sustaining whirlpool" of their collective thinking; thus, access to and discussions of metaphors is a method of challenging traditional thinking. Some scholars (e.g. Bartel 1983) argue that many words—even the ones we no longer think of as metaphors—began as such, thereby making our language "a necropolis of dead metaphors" (p. 17). Thus, the creation and use of new metaphors can be a useful method of expanding our language and worldview when needed.

In the research that has been conducted on metaphors, it has often been found that the majority of teachers and students think of teaching and learning as the "transmission of knowledge" (Martínez, Sauleda & Huber 2001, Khodadady et al. 2012) and to a lesser degree, so-called constructivist metaphors are also in use (Leavy, McSorley & Boté 2007). Sfard (1998) differentiates between the metaphors of learning as acquisition and those of learning as participation, and she and others (Patchen, Crawford 2011) argue that both groups of metaphors should be used when the meanings of learning and teaching are expressed. While theorising, one metaphor can be applicable to a limited area, but it can never cover an entire field (Sfard 1998). However, if a picture is worth 1,000 words, a metaphor is worth 1,000 pictures, for a picture provides only a static image, while a metaphor provides a conceptual framework for thinking about something (Shuell 1990, p. 102).

As society and the role of technology change, so do the definitions and metaphors of teaching, learning, and e-learning in particular (Tuncay, Poyraz 2013, Sangrà, Vlachopoulos & Cabrera 2012). Research in e-learning often focuses on learning as networking (Jones 2004, Castells 2011), and e-learning is sometimes compared to an open source (Koohang, Harman 2005) where technology plays an important role of connecting people and knowledge (Rennie, Morrison 2013, Siemens 2005). This paper will focus on the metaphors and roles of e-learning not only in relation to teaching in the classroom but also in relation to teaching and learning that take place outside of physical classroom.

In the PhD project that inspired this paper, emphasis was placed on teachers' and students' views regarding how e-learning affects students' participation, presence, and professional identity development in a physiotherapy degree programme. The research also consisted of an investigation into how teachers and students saw teaching and learning change with the introduction of e-learning. In the programme, e-learning was implemented in a blended format: the e-learning students participated in the traditional on-campus learning environment for three days every second week, and on the remaining days, they attended the same courses as the on-campus students but did so via video conference from home, or they studied independently. When the teaching took place on campus, either the classroom consisted of only physically present students, or half of them were present on campus and the remainder—that is, the e-learning students—participated online or watched the teaching afterwards. Thus, e-learning in the physiotherapy degree programme was defined as the part of teaching that took place when the e-learning students attended class via video conference but also as a technological enhancement of on-campus teaching. This is in keeping with Laurillard's (2006) definition of e-learning as "the use of any of the new technologies or applications in the service of learning or learner support"(Laurillard 2006, p. 20).

The empirical material discussed in this paper stems from participant observation of the e-learning students' learning in the blended format—that is, on campus and online, as well as gathered from focus groups with the students, interviews with the e-learning teachers, and participant observation in e-learning design workshops with the teachers.

Guided by a design-based research framework (The Design-Based Research Collective 2003, Amiel, Reeves 2008, Anderson, Shattuck 2012), the learning design workshops were conducted to sketch and discuss new learning designs for e-learning in physiotherapy. Both e-learning research and design-based research in general are concerned with the future (Friesen 2009, Bell, Hoadley & Linn 2004) because they often share an interest in sketching and designing for the purpose of improving existing learning designs. In the workshops, the main emphasis of the discussions was, therefore, on the ways in which e-learning had changed the traditional degree programme and how e-learning in the physiotherapy programme could be redesigned to let technology enhance teaching in both face-to-face and online environments. This would support the e-learning students' experiences of presence and provide opportunities for professional identity formation within the programme. The theoretical lens used in this paper was taken in symbolic interactionism (Blumer 1969, Mead 1934, Denzin 2013), and the analyses were made on the basis of grounded theory coding and constant comparisons (Glaser, Strauss 1967) of emerging themes. Symbolic interactionism and grounded theory are often found to overlap historically, methodologically, and theoretically (Johnson 2013, p. 310f, Bryant, Charmaz 2013, p. 21, Clarke, Friese 2013, p. 366, Milliken, Schreiber 2012, p. 684) because they are both concerned with investigating social meanings and actions. Symbolic interactionism (Blumer 1969, p. 2) argues that human beings act towards things on the basis of the meanings that the things have for them, and these meanings are derived from, and re-interpreted through, social interaction. Furthermore, these meaning were, inter alia, found in the use, (re-)interpretation, and creation of metaphors. Surrounded by these theoretical and methodological frameworks, the frequently occurring and newly created metaphors that were found in the empirical material from the physiotherapy e-learning programme will be presented below.

2. E-learning as space and freedom

The e-learning students in the focus groups were asked to discuss questions concerning their own perceptions of e-learning and their ideas for developing new designs for e-learning. Here, e-learning was very often compared to freedom, flexibility, and independence. As one student stated, "To me, e-learning means freedom." Because of e-learning, she could become a physiotherapist even though she lived far away from campus, had a part-time job, and wanted to spend time with her children. This was the case for many of the e-learning students. Moreover, metaphors related to space were used frequently, and e-learning was compared to a special "place" or an opportunity to be present in a certain way that meant flexibility in relation to time and physical space. To illustrate, consider the following exchange that took place within the focus group:

> Student: With e-learning I wanted to be more flexible.

Interviewer: More flexible in relation to work or family?

Student: Yeah, that I didn't need to sit right here, but that I could sit … wherever I needed to be.

In another group, the students stated, "You can be in school while sitting on your own couch" and "E-learning is where our lives take place nowadays." Many of the e-learning students had ideas regarding the virtual space as a place in which they could watch or listen to the teacher, and e-learning was frequently understood through space metaphors or metaphors related to movement—for example, "The teachers should make videos of muscles and joints that we could go in and watch 120 times if we wanted."

Thus, e-learning was frequently understood as a new space or as something that widened the traditional teaching environment, and these space metaphors also influenced the ways in which the students met and worked together. From the students' perspective, it was fruitful to have access to a digitally widened space in which to meet and collaborate. In the focus groups, they discussed how they collaborated with both synchronous and asynchronous digital tools, integrating many technologies and making use of virtual spaces to maximise their learning experiences. One student offered an example: "We open Google Docs, and we work in the documents together, and at the same time we chat and discuss on Skype." A student in another group stated, "We have Skype running in order to have the sound, and we have Adobe Connect for the pictures, and then Google Docs for the writing (laughs). Yeah, it's a bit extreme."

Some of the students found it challenging to work with many digital tools simultaneously, and they clearly preferred the physical space for collaboration. However, others found it natural and sometimes even fun to have the freedom to choose tools and learning spaces that could cross the borders of the physical space.

The physiotherapy teachers also used these spatially oriented metaphors when discussing e-learning, especially in relation to the video conferences that were used as a way for the e-learning students to participate in the teaching. A dominant theme in the empirical material was a comparison between video conference teaching and the experience of being in two worlds simultaneously (Nortvig 2014). The teachers often spoke of feeling split between the two worlds—the on-campus teaching environment and the virtual one—as if they were on campus with their bodies while present with the e-learners at home. While conceptually interesting, this split made it difficult for them to feel completely present with any of the two groups of students. As one teacher put it,

> If you make something that is targeted towards the on-campus students, then you're in their sphere … You live in two worlds as a teacher [and] it's damn hard! Then you have the on-campus students, and you have to make it interesting and take care not to be too static, cause it's not fun to look at a teacher who stands absolutely still and speaks completely monotone, because he pays attention to sound and microphones and cameras and all that. In that manner, it affects … well, it's two different worlds.

Many of the teachers found it challenging to be present in both a physical and a virtual classroom simultaneously (cf. McNaughton et al. 2014); therefore, several different teaching strategies emerged and were applied during the video conferencing. However, in the end, the virtual space of the e-learners at home was sometimes neglected and was rarely framed as an integrated part of the on-campus classroom. While most of the teachers focused their social presence on the physical classroom (cf. Hanson 2009, Spencer 2011), only a few of them managed to appear socially present on campus and online at the same time.

3. E-learning as delivery of teaching anywhere

Although the e-learning students and their teachers saw an advantage in e-learning's potential for enabling the students to participate remotely via video conferencing, both groups found the greater strength of e-learning in its ability to establish a space that the e-learners could enter to watch videos or listen to podcasts of the physiotherapy teaching whenever and as often as they needed. They, therefore, saw e-learning as supporting the students in relation to both flexibility and independence (Selwyn 2011, Kahu et al. 2014).

In addition, the physiotherapy teachers often spoke of the wide syllabus that the students were to revise and learn both in groups and alone, and in the programme, it was considered a natural part of a physiotherapist's work to keep abreast of research and its contribution to professional knowledge. Such a common knowledge base is often found to be essential for the professionals' experience and is a sign of professional identity (Heggen 2008). Classical professions are usually defined through the connection to this base, and it gives them public support for holding special positions in the field and identifies them as professionals (cf. Heggen 2008, Salling Olesen 2004). Thus, practice contributes to establishing professional identity as does theoretical

knowledge about the profession (Wahlgren, Aarkrog 2012). In the physiotherapy programme that is examined in this paper, the teachers found it relevant to let e-learning technology support the students' access to this professional knowledge base by using podcasts and videos. As one teacher stated,

> They need to know four types of pain … and now they have a podcast and they know it's there, and I can relate to it. And then when they ask later, "I don't quite remember … what types of pain…?" you can say, "Watch this one, right?"

As another teacher put it, "If you use podcasts, we can prioritise the time to the body. Then we can spend the time being with the students and touch and practice."

References to and use of supplementing resources are often found to support e-learners and their independent studies (Bickerdike, Whittle & Pickering 2014, Ragusa, Crampton 2014, McKee 2010), and the teachers in the physiotherapy programme also appreciated the opportunity for the students to get an overview of the principles of the profession of physiotherapy and expand their understanding of it. In the empirical material, metaphors for e-learning also related to the concept of "links" to the profession's knowledge base of "paths" to meeting places. Thus, learning was spoken of as something that took place not only when the teacher and the students were physically together but also when the students left the classroom and studied independently at home. However, these metaphors for e-learning also have implications for the ways in which the on-campus teaching was framed afterwards.

4. E-learning as hypertext in the classroom

Symbolic interactionists argue that the worlds that exist for human beings as groups are composed of "objects" and that these objects are the products of symbolic interaction (Blumer 1969). This means that "[…] objects not only take on meanings as people initiate activity mindful of these things, but in the process of acting towards objects people may revise the meanings they had earlier attached to those objects" (Prus 1996, p. 14). Based on this theoretical perspective, we can see how teaching and learning as objects are re-interpreted through interaction in relation to e-learning: when new digital technology demolishes the traditional classroom's time and space boundaries, the students' collaboration and learning also take place virtually outside the classroom. In other words, not only are collaboration and meetings in the virtual sphere affected but so is on-campus teaching, and this is also depicted in the use of metaphors.

In the learning design workshops in the physiotherapy programme, the metaphors for on-campus teaching included knowledge transfer and designing for learning as collaboration, participation, and so on, but the teachers also started to include the concept of hypertext when they discussed teaching in relation to e-learning. Based on this hypertext metaphor, resources such as podcasts, videos, and additional literature are seen as supplements to and enhancements of on-campus teaching, and this contributes to an image of teaching as being based on resources and knowledge that are constantly connected to a world outside the classroom. Thus, the supplementary resources and various digital spaces and tools are central to face-to-face teaching. Moreover, the metaphor underscores that teaching takes place in spaces beyond the physical classroom, and the students' independent learning was often spoken of as preparation for the teaching.

The use of the hypertext metaphor also revealed that the e-learning teachers saw their roles developing from "the sage on the stage" to a personalised guide "who 'takes' students to a predetermined destination" (cf. Patchen, Crawford 2011, p. 295), for in addition to mainly presenting knowledge, the teachers often found themselves linking to "learning places." However, this well-known guide metaphor is more nuanced in e-learning because the e-learning teacher/guide does not necessarily follow "the tourists" and participate in the "sightseeing" him or herself; instead, he or she refers to interesting and professionally relevant trips, work camps, and meeting places, and it is up to the students to follow these links, find others, and thus experience, reflect, and learn together or on their own in the appointed landscape. To be able to refer to all these relevant places, the e-learning teacher must, therefore, know of the places him or herself, and even more importantly, he or she must know how to greet the students when they meet again in order to include the hyperlink experiences in the face-to-face teaching. As one teacher stated,

> Podcasts are great: you take little pieces of a subject, and with short and visual words, you can make it understandable … so, in the future, you could … say that "this podcast is preparation for the face-to-face teaching," and then when we meet, we can do all kinds of things on this basis.

The data thus indicated that not only did the students in the focus groups and the teachers in the workshops bring out ideas for new designs for e-learning, but they also reinvented the use of old metaphors for learning and discovered the need to create new ones. To sum up the different metaphors in use in the project and the implications they were found to have in relation to face-to-face teaching, the following table may be consulted:

Metaphor for e-learning	Implications for the face-to-face part of the teaching in blended learning format
Freedom and flexibility	Teaching must be effective. Life outside campus is very important. Programme planning and schedules should be fixed.
New space	Traditional teaching can continue on campus and need not be changed. E-learning is a new way of teaching that takes place online/outside campus.
Widened space	Traditional teaching is supported by technology. Presence can be doubled. E-learning is more than distance learning.
Collaboration space	Collaboration in the classroom is supported and/or continued online. Teachers can be present online too.
Teaching delivery	Teaching is an object that the students can collect online. The focus is on students' independence.
Hypertext	Linking to the outside/online world is essential. Teaching depends on students' selection of paths through the links.

Table 1: Different metaphors and their implications for face-to-face teaching in the blended learning format

As the table illustrates, the different metaphors are interrelated, and the hypertext metaphor in particular depends on the inclusion of other metaphors for teaching and learning. One metaphor never captures the entire picture of e-learning, but it can contribute to an understanding of a conceptual framework for thinking about it. On this basis, the earth is fertilised for the growth of new e-learning designs, as well as for setting its limits.

5. Discussion and conclusion

On the basis of observations, interviews, and e-learning design workshops, the empirical material captured in the course of this study showed that the language that was used in relation to teaching and learning in a physiotherapy e-learning programme changed from a metaphorical focus on e-learning as something that either takes place outside the classroom or that could eventually enhance the on-campus teaching, to a focus on it as achieving both. In e-learning, teaching and learning take place outside the classroom, but they are simultaneously supported by digital technology on campus. Thus, the hypertext metaphor was found to be a concept that could embrace more definitions of e-learning, which are often found to be fairly disparate (Friesen 2009). The hypertext metaphor further shows that on-campus teaching builds upon, is created from, and refers to outside places. This concept of teaching is especially relevant in a professional degree programme that connects theory and practice and relates to learning from other professions and from clinical placement outside of the campus setting.

It is not feasible to use or live by only one metaphor for e-learning, because teaching and learning are always complex matters that require a wide range of images with different meanings to express all their nuances. The metaphors of teaching as knowledge delivery, constructions of collaboration spaces, and tourist guiding can be useful, and they can blend and supplement one another (Patchen, Crawford 2011). However, the use of the emerging hypertext metaphor was found to increase attention to the changed space of e-learning and to emphasise the interest in crossing borders and exploring new digital landscapes.

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