Lost in transition? Making sense of space:time configurations across workplace and educational boundaries

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Abstract

Transitions are part of the experience of Higher Education. These include beginnings, endings and also frequent transitions across physical and online settings, particularly for those on professional programmes where continual movements between work-based placements and university environments are commonplace. This paper argues that such transitions can be regarded as chronotopic movements. A chronotope (Bakhtin, 1981) is a space:time configuration where time and space are dialectically related and where such relationships help to make transitions meaningful. Rather than seeing space as a container and time as immutable, chronotopes allow us to understand how spatiality and temporality can act as resources in learning (Lemke, 2004). Networked learning can also be understood chronotopically through shifting and evolving forms of digital and physical space that are constructed through time and changes in culture. The paper draws on findings from a study of third year medical students on clinical placements going through daily transitions between clinical and educational settings. Students were transitioning between different cultures and practices involving new ways of working, access to and use of technology and where the culture of clinical specialisms heavily influenced both available tools and practices. Networked technologies helped students create stability, as they were learning whilst on the move and needed to transport work with them. Moving between different settings and contexts was very time and resource intensive and assumptions were made by tutors about the ease of transitions. Students constructed new artefacts, in response to the need to manage and make sense of multiple resources and types of information. Working across boundaries and in new space:time configurations was also found to involve frequent adaptations of roles where student agency and resourcefulness were critical. Digital media are culturally situated tools and artefacts, forming part of students' identity performances (Holland et al, 1998) as they moved between different specialisms and settings. The paper concludes that networked learning environments helped in managing the fluidity and changes of space and time when working and learning across changing contexts. Chronotopes acted as resources to help students make sense of their education and manage the continual changes of culture and identity, contingent on agency and available tools and artefacts. Networked learning environments offer distinct and dynamic chronotopes, allowing new forms of practice and discourse to emerge which are critical for students' sense making when transitioning between contexts and cultures.

Keywords

Chronotopes, transition, work-based learning, discourse, identity

Introduction

This paper is about transitions in higher education and in particular those that take place between different cultural settings when moving between work-based and educational contexts. The paper explores the role of networked learning in mediating the boundary crossings that take place when students are working across

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contexts and seeks to understand the nature and influence of chronotopes or space:time configurations (Bakhtin, 1981) in making such contexts and transitions meaningful.

Transitions in higher education are commonplace and there has been a lot of attention on transitions into and out of higher education (Ecclestone, Biesta, & Hughes, 2009; Knight & Yorke, 2013; Reay, Crozier, & Clayton, 2010). However transitions are also particularly important for students on professional programmes such as teaching, law, medicine, social work or nursing who may be crossing in and out of different settings and spaces regularly. Such transitions involve crossing both physical and online boundaries and always involve cultural change and adaptations. Most students in higher education are frequent users of the Internet, social networking and multiple digital tools (Conole, De Laat, Dillon, & Darby, 2008; Dahlstrom, de Boor, Grunwald, & Vockley, 2011) and this involves working across boundaries in formal and informal settings (Timmis, 2012). Ellis and Goodyear (2010) argue that undergraduates should become more adept at understanding their own learning needs and develop as 'apprentice knowledge workers' , using tools and media efficiently in their various 'learnplaces'. As students move across different 'learnplaces' as part of their daily routines, they will encounter new social and cultural repertoires in different settings and that adaptations and adjustments will be needed to accommodate such changes. This is even more critical for those who have chosen a programme of study that involves both work-based and university based elements where networked environments are often designed to support the educational programme elements but do not necessarily cross the boundaries into work-based settings where other online environments and systems must be accessed and used.

The paper is grounded in a sociocultural perspective and understands learning as a socially, culturally and historically mediated activity where tools and artefacts, including digital media and creations are part of the cultural production of the community (Säljö, 2010; Vygotsky, 1978; Wertsch, 1991). Learning can also be understood as a matter of identity building (Wenger, 1998) and creative process emphasising knowledge construction and meaning making (Kumpulainen, Mikkola, & Jaatinen, 2013; Lillejord & Dysthe, 2008). In the next section, the concepts of space and time and their relationships to learning, meaning making and identity are discussed.

Chronotopes - space:time configurations

> "Our sense of place, whether immediate or virtual, is made cumulatively and progressively as we act in and move through spaces, affording ourselves of their opportunities to perceive, feel, use, act, and move."(Lemke, 2004, p.1)

Lemke (2004) argues that space is typically understood metaphorically in western cultures to be a container waiting to be filled or simply as emptiness and that time is often considered as immutable, flowing independently of our lives and actions. In contrast, he argues that spatiality and temporality are related to action or material processes and that we experience space and time as we construct them. Bakhtin (1981) writing about literature and narrative in the 1920s developed the idea of a chronotope to explore how different forms of narrative move the scene of action from place to place and how events unfold over time. For Bakhtin (1981), time and space are inextricably linked to each other and space is always created through time so that they are dialectically related to one another. A dialectical relationship (usually depicted as a connected pair -e.g. space:time) is where one concept presupposes the other, they both determine and oppose each other (Timmis, 2013). Bakhtin's concept of a chronotope has been adopted recently in theorising on learning across contexts (e.g.Kumpulainen et al., 2013; Lemke, 2004; Ligorio, Loperfido, & Sansone, 2013). In particular, chronotopes give accounts of actions and discourses through which people make meaning and could be described as 'chronotopes in action' (Ligorio et al, 2013, p. 353). A chronotope is therefore a typical pattern of organisation and activities across space and time where "space becomes a place when, over time, it is attached with socially meaningful affordances" (Kumpulainen et al, 2012, p 4). Chronotopes can be considered as the defining features of a culture or subculture because they inform our design choices in shaping social and institutional spaces. Bakhtin (1981) was interested in how space:time relationships are configured, used and conventionalised differently by different authors, genres and generations. This gives us insight into how cultural groups' instantiate the typical forms of activities as trajectories across different places and over time.

> "As in art, so also in life. The cultural practices and norms of our society, or any society, and the ways these are embodied in the habitus of our bodies, our dispositions for action, the tools we are provided, and the architectures we live in also tend to conventionalize, if not routinize, the ways

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> in which we act in different places, move from place to place and setting to setting in the course of a day, a week, or longer, and make use of place and experience space and time in and across these settings." (Lemke, 2004, p2)

In considering these ideas in relation to students in higher education who are undergoing transitions between physical and online places and contexts, we suggest that understanding how space:time configurations are conventionalized and become part of our personal and cultural repertoires (and where and why they don't) can help us understand and make sense of the experience of transition and cross–contextual working. Working across different space:time configurations is always a matter of identity where the self is constructed in relation to others (Wenger, 1998). Identity and agency develop in relation to practices and activities which are themselves influenced by history, how social relations are enacted and cultures constructed (Holland, Lachicotte Jr, Skinner, & Cain, 1998). Identity building can therefore be considered as improvisations which are performed in relation to time and space (Holland et al, 1998).

Study of learning on clinical placements

Space:time configurations are now examined in relation to the findings from a recent study which aimed to investigate how digital tools and resources can contribute to the development of undergraduate medical students' learning in diverse educational, clinical and online settings.
Research questions were:

1 How do student make sense of working across educational and workplace boundaries?
2 What kinds of digital resources, tools and spaces are students using to support their studies across physical and online settings when on work-based placements?
3 How, when and where are they mobilized to support learning?

Methodology

A co-researcher methodology (Timmis & Williams, 2013) was adopted in this study, where all members of the team participated in the research. Student co-researchers explored their experiences firsthand, investigating their use of digital technologies in everyday situations, choices and decisions. This ensured commitment from students who were actively involved in the research design, planning and execution. Participants were third year medical students when students are fully immersed in clinical practice. Teaching takes place in geographically dispersed academies, attached to hospitals across the region and students only return to the university sporadically throughout the year for whole cohort teaching. Digital tools and online resources were reported by the university to be one way of redressing variations in teaching and learning and ensuring equality of access. The distributed model of medical education in this case study is not necessarily typical of other models of professionally oriented degree programmes, although many students on professional programmes are involved in work-based placements where they are required to work across a number of different settings, physical and online spaces.

Data collection and analysis

Students were invited to participate and six students from three academies, following different specialisms took part. Data collected was longitudinal and collected over six months. Informed consent was sought and agreed and an initial research plan was negotiated with students involved. Using handheld cameras, each student maintained a video diary from February to July 2010, recording entries approximately weekly. Students recorded over 100 entries, totalling over 500 minutes. Diaries included observations, demonstrations (of resources), contextual information and reflections on data (Altrichter & Holly, 2005).They described and demonstrated (on camera) how they used digital tools and resources including problems and resolutions. The longitudinal, video-based design enabled comparisons across time and contexts and facilitated collaborative analysis (Büscher, 2005). The video data was independently transcribed as verbatim transcripts and checked for accuracy. Initial thematic analysis of the diaries was conducted collaboratively through regular group analysis sessions, where groups of students and researchers worked together on thematic coding of other students' diaries, working towards a hierarchy of themes. The themes and sub themes were then discussed as a whole group in order to agree and stabilize categories and validate category assignment. During group discussions, students commented on and discussed the findings of the video diary analysis and their experience in relation to it, providing a further level of insight into the initial outcomes from the data. Data was subsequently analyzed as space:time configurations and trajectories across temporal and spatial sites of activity through discourse analysis

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of the relationships between space, time and activity in video diary entries and data from group discussions.

Transitioning across workplace and educational contexts

The major themes that emerged related to chronotopes or space:time configurations were:

- Cultures, specialisms and settings
- Access to and management of resources
- Creating and repurposing tools and artefacts.

However, it is important to note that because space and time are fundamental and cross cutting, these are interlinked and all contributed to the development of new chronotopes. The findings from these three, related areas will now be discussed.

Cultures, specialisms and settings

The medical students in this study were in their third year and were working mainly in clinical settings, returning to the university for a few days each term. They were found to be moving continually between different clinical and educational cultures and practices for example, different hospital departments, primary, mental health and social care settings, university education environments and home. Each day might consist of teaching or clinical practice in three to four distinct space:time configurations which students moved between. Each of these involved different activities, ways of working, access to and use of digital and physical spaces. For example:

> "At 8 o clock this morning I had a tutorial in the Respiratory department. This involved some case presentations,[…] then the tutor finished by showing us some x-rays and CT scans of a patient of his. I then went to my home ward to clerk a patient and then at 11 o clock I had some case presentation teaching with one of the endocrinology professors." (student 1, video 2)

The culture of the subject specialism (e.g. psychiatry, orthopaedics) meant that students had to improvise and adjust their practices and develop hybrid roles as the students were no longer just medical students but neither were they fully qualified doctors engaging in practices associated to both. Staff expectations of students also differed across specialisms. When considering that students moved between many settings and specialisms, these changes in culture and practice become more significant because of the requirement for improvisation and adaptation. The digital environments were also discipline and specialism dependent, including access arrangements and when they were available. Students needed to be flexible in managing time and space to ensure they could access and use these specialist tools at different times of the working week.

> "In general I think the PACS system is a brilliant aid for learning but I find it quite frustrating as we are completely reliant upon the doctors or the mentors to log us into this system." (student 4 ,video 6)

The PACS system is a radiology system that is widely available in the NHS and very comprehensive but access for medical students is not consistent.

Students had to learn whilst 'on the move' and needed to transport work with them. Being peripatetic made access to the internet and digital resources location dependent and not always under their control, creating spatio-temporal tensions, as the following quote shows:

> "It is a bit annoying if you don't have much time and you think you might want to take it with you. You are stuck- you are bound to your computer and you do need the Internet for it, which is a bit of a pain." (student 3, video 23)

Practices such as emailing oneself were used to manage transitions and create stability across space and time.

> "I went to the study room in [..] and did some more work on my clerking portfolios. And then the work I had done, I just emailed those documents to myself so that I'd be able to access them at home and print them off." (student 1, video 14)

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Access to and management of resources

Aside from the work conducted in the placement settings, students were also managing university assessments and work activities alongside. Carrying out assessed university work whilst on clinical placement represented another form of space:time configuration. Access to printers and printing was often temporally and spatially challenging for those based primarily in hospital or community medicine environments. Adapting to these challenges involved workarounds and improvisations.

> "Also had a bit of a problem with the email because I wanted to send my ISSC project to the Students Union print shop in order to get some copies printed off so that I can give copies of the brochure to members of the tutor group and some friends that wanted a copy. But, I tried to send it twice from different email accounts and I got a delivery failure notification sent back to me on both occasions. So I had to cycle up to the SU today to take it to them in person, which was very annoying because then I had to wait for ages in a queue of people printing off dissertations." (student 1,video 8)

Email communication on the go and access to key information was much easier for those with smart phones; those without were sometimes unable to pick things up as quickly as expected. However, tutors appeared to be unaware of the particular challenges of moving contexts and sometimes appeared to make assumptions about ease and speed of reading emails:

> "I also found, from not checking my emails, that I turned up to a teaching session that had been cancelled the day before." (student 1, video 8)

> "The benefits of using emails was that it meant I could continue to work at home, with all my books and information and computer there, without having to cart everything around to the wards to find him [doctor], and I wasn't even sure where he would be." (student 5, video 7).

Creating and repurposing tools and artefacts

In addition to transitioning and adapting to different cultures and practices, students stabilised and made sense of the multiple influences on their work by constructing new digital artefacts involving online tools and resources (e.g. internet sites, online journals, online tutorials, recorded lectures, their own notes, videos and images) in combination with printed sources to help them make sense of their experiences. Students reported that online resources felt ephemeral and they wanted ways of making transitionary knowledge more tangible and personal. Multiple levels and kinds of resources, from academic scholarly journals through to Wikipedia were brought together through patchworking practices (Bonderup Dohn, 2009), synthesising knowledge and creating their own study-related artefacts. These were often transformed into new multimodal documents which were frequently adapted, printed or annotated further. Printing and annotating added further levels of meaning and made artefacts more transportable.

> "I actually decided to make a bank of, sort of, photos in Microsoft Word based on the pictures that came up in the tutorial, because I just wanted something to refer to, so I'm going to get them printed off tomorrow. "(student 2, video 7)

> "Now I've got a copy of it I can annotate it and highlight it and stuff. And I find reading off the Internet for long periods of time quite hard to do. My eyes go funny. So… it's different when you're typing for some reason, when you're like staring, and trying to write down something I can't- I don't seem to be able to do it very well. So I prefer having like a piece of- having it on like a handout so I can go away and read it." (student 6, video 7)

Making their learning tangible and transportable across contexts appeared to be critically important for these students, ensuring resources would not disappear and helping to stabilise learning in transition. These chronotopic strategies demonstrate how both resourcefulness and improvisation helped students make sense of the different spaces and places they were encountering and how they developed their own forms of conventions to manage trajectories across and between the different space:time configurations or chronotopes that they encountered.

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In the discussion sessions, students also frequently reported directly on the challenges of transition and of being in the workplace and being a student at the same time. They confirmed that managing space and time were critical to navigating transitions. Transition is a different journey for everyone, however, and will always involve challenges which need to be creatively overcome and such improvisations help shape emerging identities.

Discussion

As the findings show, being on clinical placement is pressurised; the students in the case study were working across multiple settings where patient care takes priority. They were learning to become professional practitioners alongside continuing to operate as undergraduate students with the traditional expectations and requirements. As we have shown, multiple space:time configurations were operating traversally so that students experienced daily transitions across, within and between disciplinary contexts, physical and online settings and home, clinical and educational environments. Networks can be conceptualised as operating horizontally rather than vertically and networked learning environments assisted in managing the fluidity and changes in space and time across different clinical and educational cultures and contexts. Such environments also helped students make sense of the experience of different spaces and through this creating their own 'places'. Networked learning environments afforded opportunities for connecting and hybridising spaces, stabilising practices and creating artefacts and new discourses (Lemke, 2004), helping to instantiate the idea of 'space becoming place' through the meanings that are attached to it (Bakhtin, 1981; Kumpulainen, et al, 2012).

Space:time configurations or chronotopes are dialectic relations, held in tension, both opposing and mutually defining one another (Timmis, 2013) but these do not take place in isolation. Other dialectical relations operate alongside and are mutually intertwined such as physical:virtual, online:offline, individual:community, workplace:university. The concept of 'the university' and' the workplace' are therefore not clear cut and necessarily separate physical spaces. Equally digital tools such as mobile devices and tablets cross the boundaries between the physical and the virtual and offer new hybrid spaces and time uses. Networked digital tools open up the possibilities for new space:time configurations, including being constantly connected and working offline. Students in this study found that smart phones helped them with transitions by helping to shape what counts as 'institutional space' by being connected to the university network when working elsewhere. Where students didn't have smartphones, this was often challenging as important information was assumed by academic staff to be read immediately and resulted in missed appointments and opportunities. Since the study in 2010, this online:offline dynamic has become more critical as ipads and tablet use has increased and with the emergence of the App. Students create their own digital 'place' but this is offline. The medical students in this case study were also working individually and communally in tandem, where they must become enculturated into different specialisms in the workplace and were also working as individual students, developing their identities as 'becoming doctors'.

Other spatio-temporal conflicts emerged through the necessity of mobility when working in transit, where the students felt they had to take things with them which was not always possible. Because they were constantly on the move, students also felt that online resources were less tangible and less permanent. Through creating their own artefacts and devising workarounds they sought to even out the space:time disruptions and extend the reach of existing spaces over time and forming new chronotopic trajectories (Lemke, 2004). We have sought to show how time and space are inseparable and mutually constituting and that temporal or spatial challenges have to be managed in relation to one another as well as in relation to other dialectical tensions. Overcoming such challenges requires agency on the part of students, employing resourcefulness and improvisation in solving problems and working around the space:time constraints they encounter. Improvisation is part of the practices associated to identity construction and performance where new identities can emerge through both action and resistance (Holland et al, 1998). Working across boundaries and in new space:time configurations involves frequent adaptations of roles where student agency and resourcefulness are critical. Digital media are culturally situated tools and artefacts, therefore forming part of students' identity performances as they move between different cultures and settings. Students in the study reported in this paper had to develop hybrid, transitionary identities to accommodate the multiple spaces,cultures and communities encountered and these were sometimes in conflict with their existing roles as individual medical students, new roles as 'becoming doctors'(Monrouxe, Rees, & Hu, 2011) and the expectations of staff in how students manage new or transitionary roles.

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Conclusions

Since this study in 2010 technology has moved on, in particular the increased concentration of tablets and mobiles devices in use amongst higher education students, making the findings and discussion in this paper, we argue, even more relevant. Furthermore, the same issues associated to transitions, sense-making and stabilization are still faced by medical students today working in clinical and educational settings. Networked learning environments offer distinct and dynamic chronotopes that assist in managing the physical:virtual, online:offline, individual:community and workplace:university dialectical tensions that such transitions involve and allow new forms of practice and discourse to emerge which are critical for students' sense making when transitioning between contexts and cultures. Being in transition is always challenging and transformative. We conclude that learning in transition between workplace and formal educational spaces requires students to construct new chronotopes in order to make sense of their education and manage the continual changes of culture and identity necessitated by transitions. Chronotopes therefore act as resources for mobilizing human agency. Digital learning environments afford distinct chronotopes that can both stabilise and reconfigure time and space, enabling a place for identity working, improvisation and sense making.

Finally, we argue that the concept of chronotope can give insights into researching how spatiality and temporality frame our actions as they unfold and help to make sense of such actions. This has the potential to provide a rich seam for further research and investigation of higher education student learning and experience, particularly when this involves transitions between workplace and educational contexts.

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