Assemblage theory: coping with complexity in technology enhanced language learning

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Abstract. Language classrooms are complex systems, but theory often simplifies these processes making researching effectiveness difficult. Assemblage theory – a theory of complexity in the social sciences – allows us to examine complexity in the language classroom. In this paper, I present an account of the language classroom that captures the complexity, subjectivity, and temporality of technology enhanced language learning.

Keywords: complexity, theory, assemblage theory, technology enhanced language learning, TELL.

1. Theoretical background

The technology enhanced language classroom is a complex system combining technical processes (i.e. teaching) with natural, biological ones (e.g. the cognitive processes of learning). Theories of learning help us align these processes, providing frameworks for "intelligent and reasoned strategy selection" (Ertmer & Newby, 2013, p. 44) which are "useful for evaluating the quality of technologies for language learning" (Chapelle, 2016, p. 159).

But theories are like bricks: they "can be used to build [a] courthouse of reason [or they] can be thrown through the window" (Deleuze & Guattari, 1988, p. xiii). Theory necessarily simplifies complex processes, sorting objects into epistemological categories that are not real. These categories are subsequently generalised into abstractions and granted concrete properties (a process known as *reification,* Bewes, 2002). Concepts such as *student autonomy* and *social*

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constructivism are used to explain complex learning processes and underpin the practices and routines of language teaching, though they may be understood and applied in very different ways.

Distinctions between various applications of theories lead to methodological differences, where effectiveness is quantified using different techniques. Quantifying effectiveness and making direct comparisons between technological interventions becomes difficult to do. As a consequence, technology enhanced language learning has never been systematically investigated (Golonka et al., 2013; Hew et al., 2019).

This is not an argument to reject current theory – teachers and learning designers need to know learning theories as a lawyer needs to know the law. Instead, there needs to be a set of parameters within which language learning and technology can be explored. This paper's contribution is to present an account of the language classroom that is unshackled by reification and captures its complexity, subjectivity, and temporality.

2. Assemblage theory

Assemblage theory (DeLanda, 2016) draws on *dynamic systems theory* to explain self-organisation and self-regulation in the social and cultural world. DeLanda (2016) presents a material account of the social world, arguing that assemblage theory avoids reification by emphasising the fluidity of objects. An assemblage is comprised of objects and their connections, which combine to make up interconnected arrangements with their own functional properties and capacities. An object can be anything that has an effect on the world: humans, technology, animals, policies, or opinions. An assemblage can be any arrangement of objects: a football team, a zoo, a large-multinational, or a language classroom.

Key to an assemblage is its co-functioning; that an object's capacities only become realised in relation to other objects. For example, a teacher may use a mobile device to revise a particular language point. The technology on its own does not have the capacity to be used for language teaching. Only when it is used in combination with the students, the teachers, the software, the hardware, theories of learning, the task, and cognitive processes in the brain can its functional capacity be realised. Remove any of these objects, and the functional capacity of the device is lost. However, an assemblage cannot be reduced to these objects; all the component parts can be replaced by others, yet the functionality remains.

There are infinite possibilities and arrangements of an assemblage. In order to make sense of this complexity, DeLanda (2016) observes a series of formal operations that assemblages share, arranged along three continua:

- material-expressive;
- territorialisation-deterritorialisation; and
- coding-decoding.

First, assemblages can be defined by their material or expressive properties. The material components refer to the concrete properties of the assemblage. The language classroom comprises an array of material objects: technology, people, institutions, schemes of work, processes, methods, and policies that all interact to facilitate language learning. The expressive components meanwhile refer to the subjective properties of the assemblage. An example of expressivity can be found in the work of Stockwell (2013), who observes the importance of technology in motivating students. Motivation is an expressive component, an object may be motivating to some or not to others, or with different activities. Expressivity can help explain the dynamic nature of the language classroom.

A second continuum describes the processes of formation of an assemblage (territorialisation-deterritorialisation). Territorialisation refers to the extent to which an assemblage is bound together. Interaction between the constituent parts generates consensus, as parts find ways of working with each other. These processes determine the routines and limits of the assemblage (for example, setting up a subscription, defining roles, and establishing a designated online space are all examples of territorialisation of digital language learning). Deterritorialisation on the other hand refers to the processes of disassembling. For example, if a technology is replaced by another, then this is an example of deterritorialisation. Digital technologies have the effect of deterritorialising physical spaces, as it becomes possible to do more with digital devices. In this respect, *flipped learning* may be an example of deterritorialisation of language classrooms, taking learning outside designated spaces and times.

Related to the concept of territorialisation-deterritorialisation is the continuum of coding-decoding. Coding refers to the rituals, language, and routines of an assemblage. Formal assemblages such as a classroom tend to be highly coded, its language and routines are often clearly defined and prescribed through decades of practice and theory building. An example of coding is the language

of teaching methodologies, which are introduced and reinforced in teaching qualifications, Continuing Professional Development (CPD) training, conferences, and publications. Decoding meanwhile refers to changes in routines, habits, or practices. The introduction of new technologies have a disrupting effect that can change the way we talk about language learning and teaching. Concepts such as *gamification* or *multimodality* codify new practices.

Finally, while an assemblage has its core functions (for example to facilitate the teaching of languages), its influence extends far beyond this. These influences are known (perhaps a little abstractly) as *lines of flight* and serve to link the assemblage to the external world (ie. other assemblages). These lines of flight include links to external actors such as education boards, immigration bodies, and assessment companies – e.g. International English Language Testing System (IELTS) –, all of which influence the practices and routines of the assemblage. Big data is an example of how technology may exert an influence on the practices within a classroom. A teacher may use a platform such as ClassDojo to track students. However, there have been a number of criticisms on the reach and influence of the ClassDojo platform through the collection of data on students (Williamson, 2017). The algorithms ClassDojo uses as part of its platform reflect the worldview of San Francisco tech companies. Concepts such as grit, character, or perseverance are coded into the functioning of the platform, imposing on users particular classroom practices and behaviours that perform the values of the platform.

3. So what?

The perennial problem of the relationship between theory and practice is how theory can be practically applied in the language classroom. Assemblage theory allows us to unpick the objects and their relations in a systematic way, helping us to understand how processes or functions work. One practical application is the process of *mapping*. Mapping refers to a technique whereby designers identify all the objects, participants, and actions involved in a task. Typically this involves identifying the material objects in a system. Assemblage theory also allows us to map on lines of flight (such as assessment bodies) or expressive components, such as the attitude towards technology, or the time of day, all of which may exert an influence on practices. Concepts of territorialisation and deterritorialisation also allow us to understand the dynamic processes of language classrooms. Learning a new language point or a new skill has the effect (over time) of deterritoritalising and reterritorialising the language classroom, as new abilities allow for new powers and opportunities for creativity.

Assemblage theory also provides a frame of reference to explore other theories, such as student autonomy. Student autonomy is often reified into a series of *ideal behaviours* that successful language learners have been observed doing. By situating the student in the context of a socio-technical system, we can explore how autonomy may be constrained or enabled and how it takes shape over time.

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