The Interrelations of ICT and Professional Identity: Studying Group Formations in the Context of Higher Education

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Abstract

The currents of post-modernist thought during the late 20th century spurred an interest in identity as an object of scholarly exploration, as the massive social changes in this period revealed the instable nature of identity. Thus, the study of professional identity has been a recurrent theme in educational science through the last couple of decades, exploring the characteristics and development of professional identity. Simultaneously, the technological development in society has massively affected how we live and our work practices, increasing the intensity of Information and Communication Technology adoption and application of professionals. Educational practices of higher education are equally affected. New educational programmes emerge and course titles, pedagogies, and curricula are adapted to reflect technological changes. Thus, ICT has become a significant aspect of the content and practices of professions and disciplines, and consequently higher education. There is a lack of knowledge with regards to how professional identity are affected by developments and adoption of ICTs in society in general and higher education specifically. The author of this paper suggest Actor-Network Theory as an approach in understanding how Information and Communication Technologies contribute to the characteristics of professional identity in higher education. In the study of how actors are given an identity, the nature of groups is perceived as an on-going process made up of ties. Based on this approach, the study of professional identity must focus on the tracing of associations between heterogeneous actors and their practices. The nature or identity of the group is described through the mapping of spokespersons, anti-groups, boundaries and the inclusion of other professionals such as social scientists and statistics. When studying professional identity in the context of higher education, actors include but is not limited to students, educators, graduates, experienced professionals, but equally tools (including ICTs), curricula, professional legislation and employment statistics. The number or nature of the actors included in the mapping of ties cannot be defined from the outset. The approach will allow the voices of the actors to be heard in characterizing the social context of professional identity, revealing a multitude of perspectives. The author suggests future studies that will engage in higher education practices empirically, developing the theoretical contribution and thus elaborating our understanding of the interrelations of ICT and professional identity as well as serving as a contribution to the body of ANT literature.

Introduction

In the current information age and knowledge economy, Information and Communication Technology (ICT) is a significant artefact that delineates what should be included in education, practice, research, and policy of a profession or discipline. For instance, the pedagogical use of ICT as educational technologies is a major theme of educational research and practice. Moreover, the professional identity of e.g. nurses and student nurses is heavily affected by the adoption of technology in hospitals and clinics. Within higher education, new educational programmes emerge, and courses and curricula are adapted to reflect the technological developments of society. However, it remains unclear how and at what level these developments affect the identity of professions. Studies are needed to understand how this development in the area of ICT contribute to or affect the characteristics of professional identity.

Identity in general as a subject of scholarly exploration has had an increase since the late 20th century. This increase is in part brought on by postmodernist thought. Lawler (2014), referring to Bauman (2004), argues that it is not because identities have become unstable in the post-modern world compared to earlier. Rather, social changes such as the collapse of nation-states, changes in traditional family patterns and globalisation have made the instability of identities more obvious and visible. Likewise, studies of *professional* identity have been a recurring theme in academia during the past two decades. As an example, Ibarra (1999) investigates the characteristics and development of professional identity of investment bankers and consultants. Similar examples can be found in the fields of teaching (Rodgers & Scott, 2008), logistics (Zinn & Goldsby, 2014), medicine (Niemi, 1997), information technology (Denning, 2001), nursing (Cook, Gilmer, & Bess, 2003), engineering (Beam, Pierrakos, Constantz, Johri, & Anderson, 2009) and many others. However, one single, clear definition of professional identity cannot be derived from literature. In an attempt to define the concept, Trede, Macklin & Bridges (2012) review 20 scholarly articles where only one (Paterson, Higgs, Wilcox, & Villeneuve, 2002) prescribed a definition of professional identity as *"the sense of being a professional"* along with elements such as *"the use of professional judgment and reasoning ... critical self evaluation and SDL [self-directed learning]"*, *"a self-image which permits feelings of personal adequacy and satisfaction in the performance of the expected role"* and *"the attitudes, beliefs and standards which support the practitioner role"*. The remaining papers in the review offer only a *"very loose description of the professional identity development concept. All point to the notion that professional identity is a way of being and a lens to evaluate, learn and make sense of practice* (Trede et al., 2012 p. 374). The main bulk of scholarly publications in the field of professional identity deal with the *development* of professional identity, thus emphasizing a socio-cultural perspective, where the development of a professional identity is an on-going process that is social in nature and negotiated in communities of practice (Wenger, 1998). As such, these publications only to a lesser extent deal with the characteristics of professional identity (Horn & Md., 2016).

ICT is an umbrella term often used as an extended synonym for Information Technology (IT). ICTs include communication devices and applications, both hardware and software. In professions and disciplines, ICT is a significant actor that delineates what should be included in policy, research, and practice of a profession (Denning, 2001). As the level of ICT development and adoption in society in general develops, so does it for higher educational institutions and the professions and disciplines they educate. Aiming for a desired level of professional identity development, the skills and competences required in higher education for utilizing and adopting ICT depends on the category of the ICT-involved (i.e. specific, intensive, or supportive) discipline. Thus, Information and Communication Technology is a significant actor that affects and delineates what should be included in higher education.

These technological developments and societal changes do not only necessitate studies of identity. It also calls for approaches to understanding that make room for the complexity and the unknown of a changing situation shaped by technological innovations. To meet this end, the author of this paper suggests an Actor-Network Theory (ANT) approach to capture the interrelations of ICT and professional identity. To achieve this purpose, the paper initially gives a brief account of two publications that have introduced ANT as an approach in the study of identity. Subsequently, it gives an introduction to ANT, indicating an ontological position that places emphasis on Latour's *sociology of associations* (2005). This short introduction shies away from any in-depth description or clarification of concepts and presupposes a basic knowledge of ANT. First-time readers of ANT may delve into some of the ANT references introduced below for further introduction. By introducing Latour's work on group formations (Latour, 2005) the paper concludes by suggesting an approach in the study of professional identity and ICT.

ANT in the study of identity

ANT is not traditionally a theory of identity. However, Johannesen & Habib (2010) propose ANT as a framework for understanding professional identity and describes ANT as *"a purposeful system of concepts that allows for a description of professional identity as a process of negotiation and alignment between technological artefacts and social systems"* (Johannesen & Habib, 2010 p. 96). Of relevance to professional identity, Johannesen & Habib concentrate on three key concepts of ANT: *inscription*, *translation* and *blackboxing* (e.g. Callon, 1986; Latour, 1987). Hamilton (2012) proposes that identity in an ANT perspective could be viewed as a network effect, much in line with Foucault who rejected the view that identity was a fixed, inner essence of a person. Rather, he believed it to be shaped by relationships with others as a temporary construction expressed and formed through communication, i.e. a discursive approach to identity. Hamilton suggests ANT aligning with identity theorists like Holland (e.g. Herring, Holland, & Lave, 2001; Holland,

2001) who introduced the term "figured worlds" as a context for identity development. In the activities and social relations of the figured world, people figure out who they are, i.e. form identity – not as a fixed state, but as an effect of participating in the network of the figured world. In the figured world we define possibilities, activities and relations through interaction. As such, the figured world becomes a frame of meaning through which we understand the world. In the figured world, "individuals are positioned by others and by social discourse, cultural artefacts, embodied and material aspects of the world" (Hamilton, 2012), fully in line with the *principle of symmetry* (e.g. Law, 2007) of ANT, in which human and non-human actants are to be treated similarly in analysis.

ANT: a Sociology of Associations

Introductions to Actor-Network Theory often begin with the disclaimer that the theory is difficult to explain. In fact, proponents say, it cannot even be considered as a theory. The difficulty can in part be attributed to ANT's renunciation of common sociological dichotomies such as agency/stucture, human/non-human, micro/macro, and as such common macro structures like race, class and gender (Cressman, 2009; Fenwick & Edwards, 2012). The framework of ANT is therefore quite ontologically complex, but has even so had quite a spread in various disciplines. Often associated with the works of Latour, Callon and Law, ANT finds its origin within sociology of science, in studying the social aspects of scientific work. Canonical publications include the study of how scientists do science (Latour & Woolgar, 1979; 1986; Latour, 1987), an analysis of 17th century Portuguese expansion (Law, 1986), and the study of the efforts of a group of marine biologists to cultivate a population of scallops (Callon, 1986) that all have delineated the methodological approach. ANT has more recently taken an "ontological turn" focusing on what is, entertaining the idea of multiple, not necessarily consistent realities (Law, 2007). This ontological turn is often associated with the publication of a series of essays entitled *Actor Network Theory and After* (Law & Hassard, 1999), based on a concern that ANT in the initial form had limitations in grasping the complexity of reality. Publications associated with this ontological turn is sometimes referred to as "After-ANT" approaches and are based on the assumption that nothing exist outside of its performance in networks or webs of relations.

Other publications have elaborated and expanded the *'ontological turn'*, not least *Reassembling the Social* (Latour, 2005), subtitled *"An introduction to Actor-Network Theory"*. In the introduction of *Reassembling the Social*, Latour begins his argument by the dilution of the word *'social'*, rejecting the common use of the word, meaning a type of material of which society is made up. As such it is reduced to an adjective, not very different than *"terms like 'wooden', 'steely', 'biological', 'economical', 'mental', 'organizational', or 'linguistic'"* (Latour, 2005 p. 1). In this understanding of the word, the social becomes a specific domain of study, defining the role of sociologists as exploring the social aspects, the social factors and the specific causalities that apply in the social domain.

However, according to Latour, this approach falls short in situations that are subject to insecurities and instabilities, e.g. due to major innovations. By conveniently applying well-established social theories to these situations, we run the risk of limiting our understanding. *Reassembling the Social* (Latour, 2005) is an argument for a different approach to social studies, one that Latour calls the *'sociology of associations'*. According to Latour, rather than referring to a property of the object of study, 'social' refers to the processes with which society is held together. In this sense, social studies must focus on the tracing of associations between heterogeneous actors, focusing on exploring and characterizing these networks, the relationships of the actors and their practices.

Methodologically, Latour suggests reintroducing a slogan from classical Actor-Network Theory and urges scholars to 'follow the actors', allowing the actors to make up their own theories of the social. Only by learning from them, can we come to understand *"what the collective existence has become in their hands, which methods they have elaborated to make it fit together, which accounts could best define the new associations that they have been forced to establish"* (Latour, 2005 p. 12). Thus, the purpose is not to explain why actors do what they do, but for scientists to comprehend and learn from the actors themselves, as it is the scientists, not the actors, who lack understanding. This also explains the rather weak theoretical vocabulary of ANT. It has been the intention to create an approach to understanding that would not replace the rich vocabulary of the actor's practice with the vocabulary of the scientists. However, the sparse vocabulary of ANT has in some instances contaminated ANT practices, contrary to the original intention. According to Latour this is rather a sign that the vocabulary has not been poor enough, than the other way around. It is a methodological challenge for ANT researchers to create a vocabulary that allows the actors to define the world in their own terms (Latour, 1999).

Professional Identity as Group Formations

In *Reassembling the Social,* Latour describes *"the nature of groups"* and *"the way actors are given an identity"* as a classic sociological uncertainty (Latour, 2005 p. 22). The relation of an actor to one specific group over another (be it e.g. national, political, religious, historical, professional or based on interest) *"is an on-going process made up of uncertain, fragile, controversial, and ever-shifting ties"* (Latour, 2005 p. 28). By following the argument of a *sociology of associations,* there is no relevant group or category to use as a starting point for enquiry. Thus, in the study of professional identity, we do not start by delimiting professional identity as constituted by e.g. professional standards, the self-image or the personality traits of professionals. Instead, Latour defines the starting point of social enquiry to be quite the opposite as it begins *"with the controversies about which grouping one pertains to, including of course the controversies among social scientists about what the world is made of"* (Latour, 2005 p. 29). In defining a relevant vocabulary, Latour restricts himself to words like 'group', 'grouping' and 'actor', acknowledging their meaninglessness, but insists that this will allow the actors to be heard, rather than the sociologists.

Then how do we go about it when we attempt to understand the processes revolving around groups and group identity, without initially defining one unit of analysis as the starting point for the study? The answer is simple and beneficial to our empirical efforts: we study group formations rather than already established connections. An established connection, a formed, well-defined group will *'simply lie there'* (Latour, 2005 p. 31) whereas groups being formed will leave many more traces, generating data to study. Thus, the starting point for data collection and analysis is the four elements present in controversies about groups, according to Latour: *"groups are made to talk; anti-groups are mapped; new resources are fetched so as to make their boundaries more durable; and professionals with their highly specialized paraphernalia are mobilized"* (Latour, 2005 p. 31). Based on these four elements a study of controversies regarding group formation begins with the mapping of spokespersons *"defining who they are, what they should be, what they have been"* (Latour, 2005 p. 31), anti-groups *"by comparison with other competing ties"* (Latour, 2005 p. 32), boundaries that spokespersons define through *"a wide range of features, mobilized to make the group boundary hold"* (Latour, 2005 p. 33) and the *"social scientists, social sciences, social statistics, and social journalism"* (Latour, 2005 p. 33).

Studying Group Formations in Higher Education

Actor-Network Theory finds its true value in its application, and less in an abstract, theoretical description. This stresses the need for empirical engagement; a foundation in empirical studies, since an abstract description of ANT "misses the point" (Law, 2009). This implies an epistemological position where intervention and experimentation is fundamental to theorization. The methodical foundation of ANT is essentially ethnographic (Callon, 1986; e.g. Latour & Woolgar, 1986; Latour, 1987) and is as such mainly a qualitative, descriptive method that aims at mapping the many ways the social aggregate of group identity is constantly being formed.

In studying professional identity empirically, the researcher must necessarily choose a 'context' to explore, immersing him- or herself in the context as an anthropologist attempting to explore a foreign culture. Based on the understanding of professionalism as an on-going process as indicated above, the exploration of professional identity could indeed take place anywhere in a person's career. The context of interest for this suggested study is higher education, i.e. the first years of a student forming a group identity as a professional. It would be preferable to choose a specific educational programme (e.g. studying nursing professionals, communications professionals or IT professionals), as an ANT inspired approach to study is in nature lengthy and detailed (Latour, 2005).

Following the principle of symmetry when initially mapping the *spokespersons* requires interpreting *'persons'* broadly. Spokespersons that attempt to define a professional group includes students, graduates, experienced professionals, but also the educators, the curriculum, the tools that the professionals use (including ICT), employment statistics and legislation regarding professional practice. Studying performativity places emphasis on the practices and not the properties of the actors, thus engaging in a praxiographic approach (Mol, 2001) to studying e.g. ICTs *as practices,* instead of ICTs *in practice* (Hansbøl, 2010). In this way, emphasis is placed on how the actors become enacted, on what kinds of connections are made between them. Through this approach,

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the empirical data will provide a multitude of perspectives – or rather controversies. The mapping of these controversies is to be considered as the end result of analysis. In 'classical' sociology, the researcher would attempt to define 'social' factors and causalities that define group identity. In Latour's *sociology of associations,* however, the primary purpose is to allow the actors themselves to define the assemblages of the social.

Conclusion and future perspectives

As the interest for research in identity rises, so does the pursuit of new theoretical perspectives that might provide an extended understanding of the concept. This is not least the case in light of the technological development that is affecting our educational and work practices to a degree that we must question how this development affects the concept of professional identity. This paper proposes Actor-Network Theory as a possible framework that allows for an understanding of the world in which technology is not just something that humans use, but an actor that influences our practices and identities.

By applying Latour's ideas on group formation, professional identity is not a matter of defining certain characteristics that an actor can live up to or not to belong to a specific group. It is rather a matter of a constant, on-going process of shifting ties that can be explored by a mapping of controversies regarding the group. For the social scholar, the process starts by exploring spokespersons for the group, delineating anti-groups and boundaries as well as including other professional actors such as social scientists and statistics. Through an ethnographic approach of allowing the actors to express their views of associations and connections in the network, the result is an insight and understanding of the complex social reality of professional groups.

Such is the outline of the theoretical contribution proposed in the paper, an outline that will only gain true value in its application. Thus, the author of this paper suggests further studies to elaborate this approach methodically and empirically. Through such studies, the approach will not only elaborate our understanding of professional identity, but also contribute to the body of literature on Actor-Network Theory and After-ANT approaches.

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436

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437