

# Chapter 51

## Knowledge Networks in Higher Education

**Filipa M. Ribeiro**  
*University of Porto, Portugal*

### ABSTRACT

*Networks function as an appropriate device to explore the processes of creation and adoption of knowledge by academics in higher education institutions (HEIs), and how it can be operationalized with the concept of epistemic authority and the analysis of knowledge networks. The claim that underlies this chapter is that emergent processes of knowledge creation—in terms of epistemic states—are highly shaped by the social and knowledge networks in which academics are engaged. The primary focus of this approach to knowledge networks will be on knowledge creation. Thus, instead of focusing on the vehicles of distribution of knowledge and scientific outputs, the emphasis will be on the role of knowledge networks – seen as epistemic conduits.*

### INTRODUCTION

The theme of knowledge creation is approached by focusing on the link between creation of knowledge and the relations among actors. This article aims at conceptualizing and discussing knowledge networks in the field of higher education.

### BACKGROUND

The role of social networks for the creation of knowledge has been studied outside the educational field, highlighting the crucial role of formal and informal networks in organizational learning by stimulating new knowledge and new practices (Ahuja, 2000; McGrath and Krackhardt, 2003). However, less is known about the role of social networks in the field of education. In fact, up to this point there is only one book published on social networks and education (Daly, 2010).

DOI: 10.4018/978-1-5225-7365-4.ch051

A social network is a collection of individuals (commonly called actors) and an enumeration of the relations (or ties) among such individuals (Kindermann, 2008). The term social network is depicted from Barnes' work (1954), when he used it to designate the social relationships found in a community in Bremmes, Norway. Since then, the term has been associated to many different types of relations among many different types of individuals. Contemporary networks, unlike local communities, are not only centered on place-based affiliation, but more based on niche cultural affiliations and knowledge communities. These new ways of sharing culture and knowledge have broad implications on the relations between production and consumption and the traditional sources of authority for culture and knowledge. Standards are continuously being reshaped as networks have become the dominant cultural logic (Varnelis, 2008). "Today, network culture succeeds postmodernism. It does so in a more subtle way. No new 'ism' has emerged: that would lay claim to the familiar territory of manifestos, symposia, definite museum exhibits, and so on" (Varnelis, 2008, p. 149). As it happens in other spheres, universities are made of networked actors<sup>1</sup> and, thus, the cultures that emerge are varied.

In this networked society, the creation and production of knowledge and expertise rises the likelihood that current knowledge will be retained and multiplied in new knowledge and practices. Recent educational studies stressed the importance of strong social networks among teachers for the spread and depth of policy, reform, innovation and change implementation (Coburn and Russel, 2008; Moolenaar, Daly and Slegers, forthcoming; Penuel, Frank and Krause, 2007, Brown and Duguid, 2000; Chiffolleau, 2005; Carre et al., 1989).

Forman and Markus (2005), Drejer and Jorgensen (Drejer & Jorgensen, 2005), and Hkupic et al. (2002), have studied knowledge creation and the role of collaboration. They identified the need for further research on social network characteristics relating to the creation of knowledge in a collaborative research environment. Also Drejer and Jorgensen (2005), and Hkupic et al. (2002), have observed the need for further research integrating the domains of social networking and knowledge creation. These researchers recognized that although collaboration and interdisciplinary research are often recommended, there is still a lack of empirical or theoretical research that validates the role of network sociology in the context of knowledge creation. Forman and Markus (2005) also recognize the value of an area of further empirical quantitative exploration of their own existing qualitative research on this subject.

Moolenaar and Slegers (2010) tried to find out more exactly to what extent the characteristics of teacher's social networks affect schools' innovative climate, when this is mediated by trust. The authors used a whole network approach, i.e, they focused on specific network characteristics, such as density, reciprocity and centralization, of the social network of the school team as a whole. Findings suggested that the density of the network related to work discussions was significantly associated with school's innovative climate and trust.

Diane Crane (1972) developed a seminal work in trying to understand where the knowledge learnt at universities come from. Who is responsible? Who should wield it? The author argues that the problem of the relationship between the internal structure of a particular cultural institution and the cultural products developed and accepted within has been neglected by the sociology of knowledge. The tendency to view social groups as abstract entities rather than as collections of individuals whose modes of interaction can be precisely observed was probably responsible for this gap. This task requires, as Diana Crane already pointed out back in 1972 (Crane, 1972), the analysis of the development of belief systems of these groups as well as sociometric analysis of the relationships between their members, of the relations between such groups and of the relations of such groups to the larger social structure. The development of social network analysis has been giving a relevant contribution to fill the gap identified by Crane.

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