



Review article

Occupational safety and health professionals' skills – A call for system understanding? Experiences from a co-operative inquiry within the manufacturing sector

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ABSTRACT

Sector specific skills in occupational safety and health (OS&H) are crucial for being able to contribute to good work environment and decrease today's high levels of sick absences. Large manufacturing companies are due to tradition good at OS&H and can serve as an interesting context for investigating the knowledge level in the area today, and needs for the future. For this purpose a case study was performed in this sector as a co-operative inquiry, including 10 OS&H professionals (engineers and ergonomists) employed at in-house and external occupational health services (OHS).

Professional experiences, good examples from practice and current research were shared jointly within the inquiry. The results show needs to work more preventively than today comprehending aspects as system understanding, integrated work teams, participation, a clear role in change projects plus skills in risk assessments. Skills in how to conduct well-functioning dialogues with stakeholders were also on the agenda.

1. Introduction

The intention of both WHO¹ (2017) and ILO² (2017) is that all employees should have access to Occupational Health Services (OHS), including risk prevention. However, it varies greatly over the world how this intention is fulfilled, and statistics show a range from 3 to 97% when it comes to how many employees that are covered by OHS in different countries (Rantanen et al., 2013). Also, the organisation and funding of OHS varies, although the majority of the countries studied by Rantanen et al. (2013) have combined funding from both employers and different kinds of insurances.

In Sweden (where this case study was performed) the market for OHS firms was deregulated in 1993, followed by withdrawn state subsidies. This action led to reduced profitability and a competitive climate between the firms in the sector. Many small providers of OHS have since then merged into larger firms, but the total number of employees in the sector has despite this fact successively decreased. At the same time we see rising sickness absence rates in Sweden and in Europe (European Commission, 2017), which among other things implies an increased demand for sector specific knowledge in occupational safety and health (OS&H).

A minor part of the performed services in Sweden today are of preventive character (Swedish Occupational Health Services, 2017). Instead, health checks and rehabilitation are among the most common performed services. This is a discourse within the OHS sector that has resulted in a focus on individual solutions and reactive work instead of proactive improvements on organisational levels (Schmidt and Sjöström, 2015).

Risk assessment tools are highlighted as one way of fulfilling the intentions of working preventively (European Commission, 2017; Lind and Rose, 2016) and improve the work environment. For instance, an evaluation among work organisations in the EU shows a good level of compliance when performing such assessments (EU-OSHA, 2015; European Commission, 2017). One of the reasons for not performing risk assessments is a lack of OS&H expertise (European Commission, 2017). On the other hand, it has also been noted that the quality of the assessments needs to improve, as well as the management of risk.

According to the discussion above and the well-known fact that the OHS sector is heading a large proportion of retirements, there is a significant need for knowledge development but also transfer of professional skills between experienced and less experienced OS&H professionals. In this case, we focus on OS&H engineers and ergonomists,

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¹ World Health Organisation.

² International Labour Organisation.

operating within OHS in Sweden serving the manufacturing sector. The OHS sector has been facing substantial challenges since the 1990s (Bohlin and Hjalmarson, 2007; Froneberg, 2007) and the demands on the co-workers, are described as extensive when it comes to professional skills (Swedish Occupational Health Services, 2017; Utredningar, 2007). The Association for OHS in Sweden has pointed out lack of knowledge transfer of such importance that it may risk the growth of the sector and adversely affect the further development (Swedish Occupational Health Services, 2017).

The research in this area is scarce (Eliasson, 2017) and there is consequently a call for understanding what knowledge areas and professional skills that are needed in contemporary OHS. In line with this there are needs of finding arenas for knowledge development and sharing within and between OS&H professions and the research community.

The aim of this case study was to illuminate what kind of knowledge areas OS&H engineers and ergonomists working in the manufacturing sector highlight when participating in a co-operative inquiry, where learning and knowledge dissemination are crucial factors. The research question was: What kind of professional skills do OS&H engineers and ergonomists working in the manufacturing sector (i) express needs of as well as (ii) share with each other when collaborating with researchers?

The methodological approach was action-oriented (Gustavsen, 1992; Reason and Bradbury, 2001) and performed on a democratic basis with close collaborations between its actors. In practice a co-operative inquiry (Heron and Reason, 2006) was established as a learning network with OS&H engineers, ergonomists and researchers as actors.

1.1. Professional skills in a complex knowledge area

OS&H is a complex knowledge area that can be described as interdisciplinary and practice oriented. Accordingly, OS&H professionals need to have a broad view and understanding of the context, in combination with sector specific skills. In order to understand this complexity, different theoretical perspectives can be used. Models of socio-technical systems theories have been used in different sectors such as the automotive industry (Schöttl and Lindemann, 2015), shipping (Klein, 2014), health care (Righi and Saurin, 2015) and airports (Wu et al., 2015), as well as for different purposes such as major ICT projects (Maguire, 2014) and accident analysis (Davis et al., 2014). Furthermore, socio-technical system theories and perspectives can be said to be the basis for macro ergonomics (Holden et al., 2015), a term often used in ergonomic analysis performed on organisational levels (Hendrick, 2000). Davis et al. (2014) argue for a broadening of the application of socio-technical systems thinking and to include contextual aspects more clearly than today. This is illustrated in a hexagon comprising six elements: people, buildings/infrastructure, technology, culture, processes/procedures and goals (Davis et al., 2014, p. 173). According to Davis et al. (2014), these elements interact with each other and at the same time they are embedded within an external environment consisting of financial and economic circumstances, regulatory frameworks and stakeholders. The model attempts to capture the characters of modern organisations, such as a more pronounced dependency on external actors and, to a greater extent, integrated processes in work organisations (Davis et al., 2014; Thorsrud, 1976; Trist, 1981).

Recent research on OHS pinpoints six key factors supposed to contribute to a change from reactive toward more preventive OHS (Schmidt et al., 2015). One of these key factors is a consultative approach in order to strengthen the collaboration between OHS providers and their client companies (Schmidt et al., 2015). Broberg and Hermund (2007) are on the same track when they argue for OHS consultants (mainly technicians and ergonomists) as facilitators of learning in workplace design processes. To sum up, current research gives signal for a need to move away from today's reactive and individually based OHS into a more holistic and proactive approach.

Learning in practice is a core aspect when developing professional

skills (Argyris and Schön, 1996; Ellström, 2010, 2011; Schön, 1983). An essential part of this type of learning is reflection which is emphasised (Gustavsson et al., 1996) as a necessary component in competence development. Reflective learning also is a tool and perspective that comprises formal as well as informal processes based upon theoretical and practical based knowledge (Svensson et al., 2004). This kind of approach is recommended especially regarding learning about managing complex, instable and uncertain situations (Nilsen et al., 2012; Schön, 1983).

2. Co-operative inquiry in terms of a network

One network set up as a co-operative inquiry (Heron and Reason, 2001) formed the research process. The aim was to identify and disseminate sector specific skills about OS&H. Co-operative inquiry (Heron and Reason, 2006) is an action-oriented and participative method that with advantage can be used for knowledge dissemination and development, as it paves the way for learning (Godden, 2017). The underlying basis for co-operative inquiry is continual cycling between ideas and reflections on one side and experience, knowledge and action on the other side (Heron and Reason, 2006; Mash and Meulenber-Buskens, 2001). The latter implies that the research should be conducted in collaboration with practitioners, in this case OS&H engineers and ergonomists, and not conducted on them (Aagaard Nielsen and Svensson, 2006). Therefore all participating actors in the inquiry act as co-researchers (Godden, 2017).

The implementation process was heavily inspired by Heron's and Reason's description on how to start-up and run an inquiry (Heron and Reason, 2001). In short the process consisted of the following activities; common agreements on where and when to meet as well what to more specifically investigate (phase 1), self-reflections between the network meetings (phase 2), reflective learning and knowledge dissemination at network meetings (phase 3), actions in the field based upon new insights (phase 4) (Fig. 1).

The network was initiated by the professional researchers who invited employees (engineers and ergonomists) at different OHS providers as co-researchers (Vånje and Nord Nilsson, 2015). Crucial was that despite professional background all participating actors were going to take the role of being a co-researcher. This is also a presumption for being able to establish mutual respect and learning on a democratic basis (Aagaard Nielsen and Svensson, 2006).

The recruitment process was carried out by telephone contacts and invitation letters to the five largest OHS firms in Sweden plus internal OHS providers at large manufacturing companies operating in Sweden. The sample was chosen through personal contacts and snowball sampling (Noy, 2008). In total 12 actors with different professional

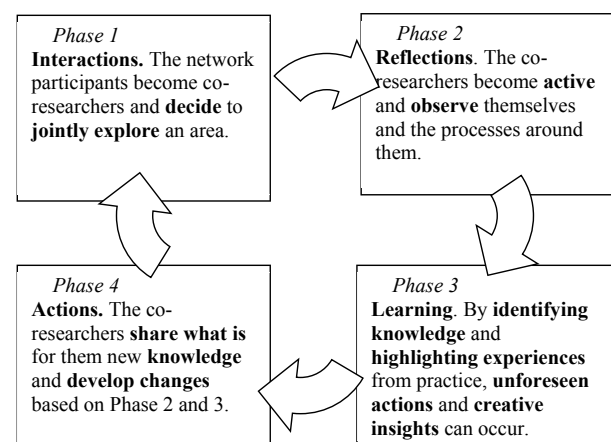


Fig. 1. The process of the co-operative inquiry methodology (Vånje et al., 2016, Fig. 2, p. 8), inspired by Heron and Reason (2001).

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