How do employees learn at work ?

Maike Gerken

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*Understanding informal learning from others
in different sectors*

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PROEFSCHRIFT

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SUMMARY

Organizations have turned to employee's continuous professional development to increase the responsiveness towards ongoing change and the ability to foster innovation. Especially, workplace learning is an issue of emerging interest. In this context, informal learning in the workplace in contrast to formal learning has become a major component for acquiring and developing knowledge and skills that are important in organizations to stay competitive and increase quality. However, the concept of informal learning has been difficult to explain as it is undecided in which kind of informal learning behaviors employees engage in. As yet, researchers have tackled this issue by noticing all possible informal learning behaviors and activities. This resulted in a broad overview and scholars later categorized informal learning in either learning from oneself such as reading literature or learning from others such as exchanging feedback with others. This approach has limitations: using a broad categorization can lead to fallacies if the findings are used to make clear statement on the possible effects of informal learning on professional development.

The present dissertation builds on these efforts and responds to the limitations by focusing on informal learning from others. The goal is to gain a refined understanding of the informal learning from others behaviors employees engage in and how this contributes to their professional development. The concepts of employability and innovative work behavior were selected as indicators for professional development as these constructs are recognized in literature to be influenced by learning. More specifically, four empirical studies were set up to each make an individual contribution to the goal by addressing the influence of specific informal learning behaviors from others on employee's employability and innovative work behavior. The contribution of study 1 in Chapter 2 lies in the further operationalization of concrete informal learning behaviors based on prior research studies. This study compared the relation of informal learning and formal learning on employees' employability in the field of emergency medical services. The findings revealed that two behaviors, creating opportunities to gather information and proactive learning from others, positively related to employability. Next, the results showed that employability is foremost related to informal learning and not to formal learning. Study 2 in Chapter 3 expanded the results of the first study in two directions. First, by further operationalizing the concept of informal learning from others and looking at three specific behaviors that emerged from the first study: acting upon feedback, information seeking, and help seeking. These behaviors are also referred to in Chapter 4 and 5. Second, this empirical study took place in a different sector, namely higher education and studied the learning behavior of faculty staff. The results of the second study showed that acting upon feedback from colleagues significantly positively

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related to employability. In addition, informal learning from others had a stronger relation with employability than formal learning.

In relation to the expectation of lifelong employability, employees are also asked to fulfill tasks that lead to the development of new ideas and innovations. Study 3 (Chapter 4) examined the relation between informal learning from others and innovative work behavior across employees working in different sectors. The results revealed that two learning from others behaviors, that is, acting upon feedback from colleagues and information seeking were significantly related to employees' innovative work behavior. Study 4 (Chapter 5) took a different perspective on informal learning from others by identifying employees' preferences for acting upon feedback, information seeking, and help seeking and its relationship with their background characteristics. The results demonstrated that employees prefer certain behaviors over others depending on job mobility and work experience. Accordingly, employees will engage in ways that best serve their purpose and assist their career trajectory. In conclusion, this dissertation extends previous findings from literature leading to a more sophisticated understanding of the concept and effects of informal learning from others in the workplace on both employability and innovative work behavior.

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Darin besteht das Wesen der Wissenschaft:
Zuerst denkt man an etwas, das wahr sein könnte.
Dann sieht man nach, ob es der Fall ist
und im allgemeinen ist es nicht der Fall.

BERTRAND RUSSELL
(1872 – 1970)

TABLE OF CONTENT

1.1 INTRODUCTION

Informal learning is a new hype in the workplace. A quick glimpse on LinkedIn and Twitter shows us that informal learning appears to be a trendy theme within the human resource (HR) and human resource development (HRD) world. Charming cartoons and simple diagrams teach us that the workplace is employees' main place for learning. Not less than 70% is said to be learned on the job without support or systematic involvement of an external expert (Cross, 2007). This is particularly true for knowledge-intensive organizations where work is rapidly changing and innovative. In order to keep up with the changes and even anticipate on them, these work environments are characterized by a need for collaboration and interaction among employees and will feature informal learning. This all sounds very promising and although organizations may have an intuitively clear picture of what informal learning may be, the reality in fact is more complex.

The term informal learning was first introduced in 1950 by Malcolm Knowles in his work on informal adult education (Watkins & Marsick, 1992). Since that time, many researchers have written about informal learning, offering their unique perspective on the meaning of the term. The work of Marsick and Watkins (2001) has led the research for over a decade. The authors state that, informal learning is unique to the individual and control of learning rests primarily in the hand of the learner. Generally speaking, informal learning is said to be characterized by a low degree of planning and organization in terms of context, support, time and goals (Eraut, 2007; Noe, Tews, & Marand, 2013). Informal learning opportunities are not restricted to a particular context, but result from daily activities in which learning is not the primary goal (Marsick, 2009). Under the umbrella term of informal learning, research categorizes informal learning as either individual informal learning or informal learning from others (Noe et al., 2013). Individual informal learning includes learning from non-personal sources like professional literature and the internet. Informal learning from others involves learning in a social context from personal sources like colleagues, supervisors, and relevant others. However, prior empirical studies did not make a distinction between these categories. A lot of studies operationalized informal learning either as a whole range of behaviors and activities or measured it in a rather vague holistic way making it difficult to discern whether the focus was on individual or social informal learning (Lohman, 2005, 2006). Recent studies indicated that to enhance their professional development employees rely more on social interaction with others than individual informal learning (Froehlich, Beausaert, Segers, & Gerken, 2014; Kyndt, Dochy, & Nijs, 2009). Yet, research is lacking a clear picture of the behaviors that employees engage in when talking about informal learning from others and how this relates to employees professional development.

1.2 PROBLEM STATEMENT AND AIM

To support informal learning from others at work it is necessary to find out which specific learning behaviors occur at work. In the past, research on informal learning has focused on a broad range of behaviors. Although general effects have been established, it is acknowledged that it is difficult to study antecedents and effects of a phenomenon like informal learning when it is not clear which specific learning behaviors is focused upon. In this respect, increasing attention is now being paid to the social processes and activities in workplace learning. Literature states that social interaction with colleagues and supervisors is the main source of learning at work (Billett, 2004; Eraut, 2007). Nevertheless, in existing instruments measuring informal learning at work, little attention has been given to the social dimension of informal learning (Richter, Kunter, Klusmann, Lüdtke, & Baumert, 2011). As a result, the specific behaviors by which informal learning from others takes place have not yet been well explained. This dissertation aims to fill this research gap by increasing our understanding of specific learning behaviors related to informal learning from others. More specifically, we focus on feedback seeking behavior, help seeking behavior, and information seeking behavior.

Employees need to not only update job specific skills but, to an increasing extent, have to prepare themselves for future jobs, tasks, roles and many other new challenges in the workplace (Mihail, 2008; Nauta, Vianen, Van der Heijden, Dam, & Willemsen, 2009). In this regard, employability and how Learning and Development departments can contribute, is high on the strategic agenda of many organizations. Organizations are interested in supporting employees' employability but also recognize the need to provide a workplace environment that encourages and shapes various opportunities for informal learning. Despite this research evidence of the effects of informal learning from others on employability is still scarce (Klink, Heijden, Boon, & Rooij, 2014; Van der Heijden, Boon, Van der Klink, & Meijs, 2009). Therefore, the purpose of this dissertation is to get a better understanding of informal learning from others and how it contributes to employees' employability. Employability refers to "the continuous fulfilling, acquiring or creating of work through the optimal use of competencies" (Van der Heijde & Van der Heijden 2006, p. 435). Employability refers to five dimensions, which are occupational expertise, anticipation and optimization, personal flexibility, corporate sense, and balance (Van der Heijde & Van der Heijden, 2006). Occupational expertise refers to having knowledge and skills for the current job. Anticipation and optimization means taking an active role in reflecting on the current developments in one's field, and acting upon those developments. Personal flexibility means passively adapting to changes related to the tasks and functions in the workplace. Employees show corporate sense when they identify themselves with the corporate goals of an organization and accept responsibilities. Balance is defined as the compromise between the employer's interests and the employee's work, career, and private interests. For this dissertation, we were interested in the expertise (occupational expertise) and adaptability of employees (anticipation and optimization and personal flexibility) in the job. These competences are subject to learning and the context and can most easily be influenced by Learning and Development departments and the organization.

Related to the interest in employability, how to accelerate innovation in organizations has captured the interest of many organizations. It has been argued that for this acceleration to happen, investing in innovation has to be part of the behavior of each employee (Rogers, 2002; Scott & Bruce, 1994). In this respect, the concept of innovative work behavior is referred to. Innovative work behavior is defined as work activities that employees carry out in their work context, either individually or in social interaction, in order to accomplish a set of interdependent innovation tasks (Janssen, 2000; Messmann & Mulder, 2012; Scott & Bruce, 1994). Four dimensions of innovative work behavior can be distinguished: opportunity exploration, idea generation, idea promotion, and idea realization (Messmann & Mulder, 2012). Although it has been argued that investing in Learning and Development is an essential lever for supporting employees' innovative work behavior (Kessel, Hannemann-Weber, & Kratzer, 2012), to date, empirical evidence is scarce. Therefore, in this dissertation, in addition to employability, we explore the relation between undertaking informal learning from others and the extent to which employees show innovative work behavior.

Finally, there is currently no answer to the question if employees' have a preference for information seeking, feedback seeking or help seeking behavior as the three discerned specific informal learning from others behaviors. Depending on the work environment and the situation, employees might choose certain learning behaviors over others. In other words, what are the motives that cultivate different preferences for informal learning from others behavior? The answer can lead to a more refined understanding of how informal learning from others can be supported in the workplace. For instance, human resource development practitioners could help employees to be aware of their preferences for continuous learning.

In summary, in this dissertation we intend to contribute to the theoretical and empirical knowledge of informal learning from others behaviors, more specifically feedback seeking, help seeking and information seeking. The central research questions are:

1) **What is the relationship between formal and informal learning from others on employability in different work environments?**
2) **What is the relationship between informal learning from others on innovative work behavior?**
3) **What are motives for engaging in informal learning from others?**

In the next paragraphs, we begin by discussing informal learning from others, with particular emphasis on key activities that govern informal learning from others behavior. We then turn to an examination of the antecedents and consequences of informal learning from others. This chapter concludes with the conceptual model researched in this dissertation and an outline of the accompanying chapters.

1.3 THE CONCEPT OF INFORMAL LEARNING

Although the term informal learning was introduced in the midst of the 20th century (Watkins & Marsick, 1992), research on informal learning was first conducted in the 1980s by analyzing workplace learning and the development of competences (Conlon, 2004). Research on informal learning has blossomed in the past years (Berg & Chyung, 2008; Eraut, 2007; Jeon & Kim, 2012; Lohman, 2006; Marsick, 2009). Informal learning is often explained in contrast to formal learning although scholars argue that they complement each other (Sawchuk, 2008; Svensson, Ellström, & Åberg, 2004). Formal learning is defined as learning that is institutional, structured and planned (Choi & Jacobs, 2011; Marsick & Volpe, 1999), for instance the learning that takes place in trainings or seminars. Informal learning occurs during daily work activities, is predominantly unstructured and mostly occurs spontaneous (Cunningham & Hillier, 2013; Marsick & Volpe, 1999). Until now, most research on informal learning has been bottom-up; researchers asked participants about particular informal learning behaviors and then developed theory to describe and explain it (Lohman, 2006). As a consequence, there is no common definition of the concept of informal learning. Accordingly, each definition is distinct from one another and highlights a certain aspect of the umbrella term of informal learning. For example, informal learning is defined by Mulder (2013, p.52) as "cognitive and physical learning activities (that lead to cognitive activities) that can be deliberate or reactive, and that lead to competences but not to formal qualification". Hoekstra et al. (2009) state that informal learning "refers to learning in the workplace where systematic support of learning, such as professional development trajectories, is absent" (p. 663). According to Noe et al. (2013) informal learning is defined as "learner initiated, occurs on as-needed basis, is motivated by intent to develop, involves action and reflection, and does not occur in a formal classroom setting." (p. 3). The authors draw a distinction between individual informal learning and social informal learning from others. Individual informal learning behaviors involve learning from non-personal sources such as reading print and online material and seeking information to stay informed about new developments. Social informal learning includes learning from others such as colleagues, clients and supervisors. Employees especially benefit from social interactions with colleagues, supervisors or relevant others compared to individual informal learning (Jeon & Kim, 2012; Marsick, 2009). Recent studies indicated that interaction with others at work forms one of the most significant sources of learning compared to individual learning behaviors such as searching in the internet or reading books (Billett, 2004; Kyndt et al., 2009; Lohman, 2006). Conlon (2004) summarized that employees make use of informal learning from others "to obtain help, information or support, learn from alternative viewpoints, gain ability to give greater feedback, consider alternative ways to think and behave (planned or unplanned), reflect on processes to assess learning experience outcomes, and to make choices on where to focus their attention" (p. 287). Overall, although there is some evidence on the more general nature, antecedents, and consequences of informal learning from others, less is known about specific informal learning from others behaviors and their effects on professional development. This calls for a more systematic attention toward the particular behaviors employees engage in.

1.3.1 *ACTIVITIES THAT GOVERN INFORMAL LEARNING FROM OTHERS BEHAVIOR*

Researchers studying informal learning have begun to identify the activities in which employees shape their social interactions with others (Boud & Middleton, 2003; Froehlich et al., 2014; Kwakman, 2003; Meirink, Meijer, & Verloop, 2007). Throughout the literature attention has been given to the most common activities employees engage in (Cheetham & Chivers, 2001; Lohman, 2009) including conversations and discussions with each other. This means that employees who work together, share ideas, and request or give advice (Hodkinson & Hodkinson, 2005; Tynjälä, 2008). In particular, three key activities have been identified: proactive engagement in feedback from others, sharing knowledge and information with others as well as seeking advice (Ashford, 1986; Bamberger, 2009; Kyndt et al., 2009). This section focuses on these particular activities.

In the feedback literature, researchers showed that employees proactively seek and use feedback (Ashford, 2003). Feedback refers to an activity that employees undertake to obtain information about their performance and evaluations (Ashford, Blatt, & VandeWalle, 2003; Ashford & Cummings, 1983). The review by Ashford et al. (2003) suggests that feedback allows employees to assess how they are doing at achieving goals and how others perceive and evaluate their behavior. Feedback seeking typically includes informal methods of assessments such as questions posed to supervisors, peers, and subordinates. Employees often make conscious choices to ask others about a specific task or general feedback of their current performance (Shute, 2008). Feedback seeking is a process that involves the search for feedback, interpret it and then use the feedback afterwards. Using or acting upon feedback is an important aspect as it allows employees to correct their behavior and learn from it (Ashford, Blatt, & VandeWalle, 2003; Steelman, Levy, & Snell, 2004). Particular the aspect of acting upon feedback is crucial for learning. Feedback is evaluative and it is not always obvious if the employee will subsequently act upon it unlike seeking information or help. Seeking and acting upon feedback is intended to have an effect. Evidence shows that acting upon feedback is positively related to the career development of the employees (Anseel, Beatty, Shen, Lievens, & Sackett, 2015; Atwater & Brett, 2005; Smither, London, & Reilly, 2005).

Information seeking is defined as "deliberate, conscious efforts" for obtaining knowledge (Miller & Jablin, 1991; p. 102). Information seeking refers to the proactive behavior of an individual to compensate for a lack of information (Lee, 1997; Morrison, 2002). Employees can seek specific information on how to complete a task or general information about the organization's mission. Employees seek information from a variety of sources (Morrison, 1993). For instance, employees seek information from employees who they consider experts in a specific subject. Also, employees seek information from employees whom they have close social ties with or are physically close located to (Borgatti & Cross, 2003). Furthermore, studies show that employees seek different types of information from different types of co-workers (Morrison, 2002). Employees are more likely to pursue information about how to execute a job task from their supervisor and are more likely to seek work related social information from peers (Miller & Jablin, 1991).

Help seeking is a proactive behavior through asking others for their assistance, support or advice (Hofmann, Lei, & Grant, 2009; Van der Rijt et al., 2013). Like feedback and information seeking, help seeking is a proactive activity performed to expand resources like knowledge (Lee, 1997). Yet, it is distinct because help seeking results from the encounter of a specific problem whereas information and feedback seeking are also relevant in the absence of an explicit problem (Lee 1997). Employees in need of help define their problem, and proactively seek for those individuals in their work environment that have the resources to support them to find a solution to their problem. Lee (1997) showed that employees mainly seek help from peers. More specifically, employees seek help from colleagues that exhibit effective problem solving capabilities and from colleagues they consider experts in the area related to their problems (Hofmann et al., 2009; Lee, 1997).

1.4 *ANTECEDENTS AND CONSEQUENCES OF INFORMAL LEARNING FROM OTHERS*

In this dissertation, we have been addressing specific antecedents and consequences of informal learning from others. In this section, we will introduce these antecedents and consequences.

1.4.1 *ANTECEDENTS: JOB MOBILITY AND WORK EXPERIENCE*

Since lifetime employment has changed, employees become responsible for their own career (Mihail, 2008). This asks for proactive behavior in the workplace. Rather than reacting, proactive employees are aware and prepared for (future) challenges (Crant, 2000). Due to changes throughout their career employees seek out learning and development opportunities and engage in learning activities that expand their knowledge and skills (Boud & Middleton, 2003; Sonnentag, 2003). Moreover, prior research suggested that employees do not react to tasks as structured by supervisors, but also negotiate changes and actively change and expand tasks and their roles (Ashford & Black, 1996; Saks & Ashforth, 1996) which asks for engaging in learning activities. In addition, when changing jobs, functions and/or organizations, employees need to integrate their work experience into their career plans (Mihail, 2008) as well as update knowledge and skills in order to perform new tasks and skills. Given the dynamics in careers and their trigger for engaging in learning, in this dissertation we seek to investigate the influence of job mobility and work experience on informal learning from others. More concretely, in the studies reported in this dissertation, we are interested in the influence of the number of job functions of the respondents, the number of organizations they have been affiliated at and their overall number of years work experience. Chapter 5 specifically examines the influence of work experience and job mobility on employees' preferences for information seeking, feedback seeking or help seeking behavior.

1.4.2 CONSEQUENCES: EMPLOYABILITY AND INNOVATIVE WORK BEHAVIOR

As stated in the introduction, organizations need experts who can easily adapt to the constantly changing environment. In other words, employees need to be highly employable (Van der Heijde & Van der Heijden, 2006). Employability refers to the possession of the following competences: occupational expertise, anticipation and optimization and flexibility. Although limited, former research has been indicating the role of formal and informal learning in supporting employees' employability (Eraut, 2004; Van der Heijden et al., 2009). Moreover, a few studies suggest the power of learning from others for employability (Froehlich, Beausaert, Segers, & Gerken, 2014; Klink, Heijden, Boon, & Rooij, 2014). Chapter 2 and chapter 3 both build further on these studies. In two different sectors we investigate the relation between employees' informal and formal learning and their employability. Chapter 2 looks at employees working in the emergency medical services. Chapter 3 tests the relationship among faculty staff at a university.

Related to the expectation of lifelong employability, employees are expected to be innovative and to come up with new ideas and strategies about products and processes. Limited research has been conducted that explores which informal learning from others behaviors contribute to employees' innovative work behavior. The study in chapter 4 researches how the acting upon feedback, seeking of help, and seeking of information relate to employees' innovative work behavior in organizations. Analyses of data collected in different knowledge-intensive organizations are used to illustrate the relationship between informal learning from others and innovative work behavior.

1.5 OUTLINE OF THE DISSERTATION
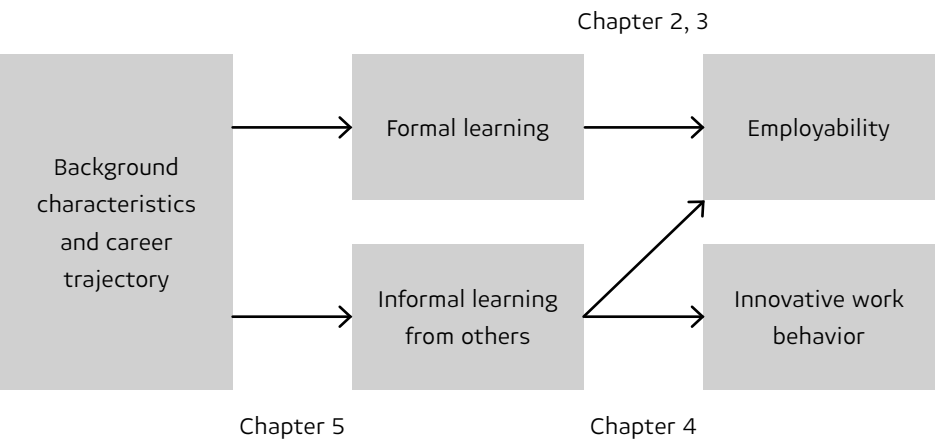
Figure 1.1 Overview of the studies

Figure 1.1 summarizes the research model of this dissertation and provides an overview of the focus of the different studies. More precisely, in the first study in Chapter 2 we started with an instrument measuring a variety of informal learning behaviors based on Kyndt et al. (2009). This study outlines the relation between formal learning, informal learning from others and employees' employability in the emergency medical services. Based on the results of the first study we focus systematically on three informal learning from others behaviors in Chapter 3, 4 and 5: feedback seeking, help seeking, and information seeking. Study 2 in Chapter 3 presents a study on formal and informal learning from others and their relationship with employability among faculty staff. In Chapter 4 we examine the relation between informal learning from others and innovative work behavior among employees in different contexts. In Chapter 5 we look at informal learning from others during the career trajectory. Employees will engage in ways that best serve their purpose and assist their career trajectory. In this study we attempt to map employees' preferences of informal learning behaviors from others thereby taking into account the influence of job mobility and work experience. We identified learning profiles of employees and looked at their relationship with their career trajectory. Chapter 6 provides a general discussion of the results presented in Chapters two to five. This is followed by the valorization addendum.

Please note
In this dissertation, the term informal learning from others is used interchangeably with the term social informal learning. Both terms refer to learning from others through social interactions. Moreover, feedback seeking, help seeking, and information seeking are behaviors that imply different activities such as asking for feedback, help or information, interpreting it and dealing with it.

This dissertation is a collection of closely related studies. Chapter two to five present these studies. Since every study is written to be read on its own, repetition and overlap between the chapters is inevitable.

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Chapter 2

*The influence of formal and informal learning
on employability in the workplace:
A study in the emergency medical services*

ABSTRACT

Although formal learning has received a lot of attention as a way to support professional development, recent research suggests that informal learning might be more important. This paper seeks to investigate the predictive role of formal and informal learning towards professionals' employability. The concept of employability comprises three dimensions: occupational expertise, anticipation and optimization, and personal flexibility. Informal learning refers to using feedback, creating opportunities to gather information, active engagement in learning opportunities and proactive learning from others. Quantitative data gathered among 121 professionals in an organization that offers emergency medical services were analyzed using correlation analyses and hierarchical multiple regression analyses. Results revealed that two informal learning behaviors, creating opportunities to gather information and proactive learning from others, affect the dimension anticipation and optimization. This suggests that these behaviors support employees to better prepare for and anticipate to future changes. Next, it was found that following formal learning programs relate to personal flexibility indicating that it helps employees to easily adapt to changes in the workplace. Moreover, informal learning had a stronger influence than formal learning on professionals' employability. The findings highlight the importance of supporting not only formal, but also informal learning in the workplace to keep employees employable.

2.1 INTRODUCTION

Today, lifelong learning in the workplace has become a necessity for individuals in organizations. The potential of an organization to perform optimally and compete in a changing environment depends on employees' capability to develop (De Vos, De Hauw, & Van der Heijden, 2011; Nauta, Vianen, Van der Heijden, Dam, & Willemsen, 2009). Organizations ask for highly flexible professionals who are skilled in performing various tasks and roles. Consequently employees are confronted with maintaining their expertise and their capability to develop. In this respect, the concept of employability has received increasing attention. Employability is defined as "the continuous fulfilling, acquiring or creating of work through the optimal use of competencies" (Van der Heijde & Van der Heijden 2006, p. 435). It implies that professionals are able to deal with the changing needs in the workplace and continuously develop new expertise and skills. When employability is crucial, how can organizations support employees to develop their employability?

To stay competitive and increase quality, organizations and specifically human resource development (HRD) practitioners use many forms of employee development to ensure continuous professional development (Ellström, 2001; Noe, Clarke, & Klein, 2014). The present study we will focus on formal and informal learning. Formal learning is accomplished in trainings, workshops, seminars or formal courses and is usually scheduled (Eraut, 2000). This view emphasizes that employees update their knowledge and skills in full- or half-day activities outside the workplace context in which teachers provide information that can be applied in the workplace (Svensson, Ellström, & Åberg, 2004). Previous research has been looking into the relation between formal learning and employability (Brown, Hesketh, & Williams, 2003; Thijssen et al., 2008; Van der Heijden, Boon, Van der Klink, & Meijs, 2009). The results show that the revenue and expenses of formal learning programs in terms of competence development is limited in the long term (Eraut, 2004; Marsick, 2006). At the same time, research revealed that the majority of learning in organizations does not occur in formalized programs (Flynn, Eddy, & Tannenbaum, 2006; Garrick, 1998; Tannenbaum, 1997). For example, an early study by Tannenbaum (1997) found that employees allocated only 10% of their professional development to formal learning compared to informal learning from sources such as their supervisor and colleagues. Informal learning is defined as "learner initiated, occurs on as-needed basis, is motivated by intent to develop, involves action and reflection, and does not occur in a formal classroom setting." (Noe, Tews, and Marand, 2013, p. 3). Informal learning mainly takes place during daily working activities (Doornbos, Simons, & Denessen, 2008; Eraut, 2004; Marsick, Volpe, & Watkins, 1999; Tannenbaum, Beard, Laurel, & Salas, 2010) and includes a wide range of learning behaviors and activities (see for example, Lohman, 2005). More specifically, individual informal learning behavior can be discerned from social informal learning behavior (Eraut, 2004). In this respect Noe et al. (2013) refer to learning from non-interpersonal sources such as reading professional literature and using the Internet as individual informal learning and learning from others as informal learning in social interaction. For example, sharing information at a conference, dropping by the office to seek assistance from a colleague, and using the feedback from a supervisor to improve a certain task, are all activities that illustrate opportunities to learn from others (Crommelinck & Anseel, 2013; Van der Rijt et al., 2012).

Although enhancing employability is high on the agenda of organizations and a well-studied topic by scholars, only a few studies measured the relationship between informal learning and employability (e.g. Van der Heijden et al., 2009). In this study, we extend literature by empirically investigating informal learning in the workplace. The present study seeks to explore how formal and informal learning relate to employees' employability in the emergency medical services.

2.2   THEORETICAL FRAMEWORK

In this section, we will first explain the concepts of employability and formal and informal learning. Next, we make the relationships between the three explicit before arriving at our hypotheses.

2.2.1   THE CONCEPT OF EMPLOYABILITY

The idea of lifetime employment has been largely replaced by an idea of lifelong learning and lifetime employability. The concept has been defined in a variety of ways (Carbery & Garavan, 2005; Clarke, 2008) from different perspectives (Fugate, Kinicki, & Ashforth, 2004; Grip, Loo, & Sanders, 2004; De Cuyper, Bernhard-Oettel, Berntson, De Witte, & Alarco, 2008; Thijssen et al., 2008). Given the change in human resource perspective from job-based human resource management (HRM) to competence-based HRM also has influenced the conceptualization of employability. In this respect, the work of Van der Heijde and Van der Heijden (2006) is crucial. Employability consists of domain-specific occupational expertise and four generic competences: anticipation and optimization, personal flexibility, corporate sense and balance (Van der Heijde & Van der Heijden, 2006). Occupational expertise means having the knowledge and skills to be able to function in the current job. Anticipation and optimization refers to taking an active role in preparing for future changes, the ability to reflect on developments in the field and understanding the requirements for its own professional development. Personal flexibility refers to the capacity to adapt to changes related to one's tasks and function. Corporate sense means identifying with the corporate goals of an organization and accepting collective responsibilities by participating in work groups. Balance is defined as the compromise between the employer's interests and the employees' work, career and private interests (Van der Heijde & Van der Heijden, 2006). The latter two components of employability (corporate sense and balance) are less subject to HRD policies assuming that learning plays a minor role here. In addition, research emphasizes the importance of occupational expertise as a mandatory component of employability as well as being able to adapt to changes in the workplace and being flexible on the personal career level and for the organization itself (Fugate, Kinicki, & Ashforth, 2004; Nauta et al., 2009; Van der Heijde & Van der Heijden, 2006). We therefore focus on the first three dimensions (occupational expertise, anticipation and optimization and personal flexibility) in this study. Because employability depends on employees initiative to actively identify opportunities and anticipate and deal with problems (Grant, Parker, & Collins, 2009; Kim et al. 2009), research suggests that further development of employability can only be enhanced if professionals are provided with important learning experiences in the workplace and frequent opportunities to extend their capabilities (Murdoch-Eaton & Whittle, 2012; Van der Heijden & Bakker, 2011).

2.2.2   FORMAL AND INFORMAL LEARNING

Traditionally, HRD professionals have relied upon and researchers focused on learning behaviors that happen in formal learning and development programs (Choi & Jacobs, 2011; Govaerts & Dochy, 2014; Panagiotakopoulos, 2011). Based on insights from research on deliberate practice, it has been argued that employees improve performance through specific goals and repetition of practicing tasks to increase knowledge and skills (Ericsson, 2006). This is done through formal learning programs in which trainers structure activities and disseminate information to improve performance (Eraut, 2004). Typically, the learning process is specified on forehand and structured in terms of the context, support and learning objectives. However, the majority of what professionals learn is not planned in the way training and development programs convey knowledge (Tannenbaum, 2001). The dynamics of the workplace pose challenges for employees to update their knowledge and skills by attending formally organized learning programs only (Tannenbaum et al., 2010). Recent research revealed that employees' development was mostly guided by practical experience rather than deliberate practice (Van de Wiel, Van den Bossche, Janssen, & Jossberger, 2011). Instead employees learned most from their daily experiences and through consulting relevant others in the workplace. The results suggest that more emphasis should be put on learning that is integrated in the daily work. This informal learning happens spontaneous at the employee's own initiative and preferences (Cheetham & Chivers, 2001; Ellinger, 2005; Kyndt & Baert, 2013; Malcolm, Hodkinson, & Colley, 2003). According to Noe, et al. (2013) informal learning can be distinguished between individual informal learning and social informal learning from others. Individual informal learning involves learning from non-personal sources such as reading print and online material and seeking information to stay informed about new developments. Social informal learning include learning from others such as peers, colleagues, clients and supervisors (Kyndt et al., 2009) and has been operationalized in different concrete learning activities. Following Kyndt et al. (2009) employees should be supported to engage in feedback from others, sharing knowledge and information with others as well as seeking advice. Prior research found a link between informal learning and job performance (Van der Rijt, Van den Bossche, & Segers, 2013), career development (Van der Sluis & Poell, 2003) or professional development (Kwakman, 2003; Lohman, 2005). Yet, to date, little research has been examined the ways in which formal and informal learning influences employees' employability.

2.2.3   THE RELATIONSHIP BETWEEN FORMAL LEARNING AND EMPLOYABILITY

Research on formal learning especially looked into the effect of formal learning on employability. A study by Sanders and de Grip (2004) among low-skilled workers shows that formal learning in terms of participation in courses has a positive influence on employability. In this study, employability is operationalized as external and internal employability. External employability refers

to the ability to take a job in a different company. Internal employability means either firm-internal employability where employees change jobs within the company or job-match employability where employees stay in their job within the company. Formal learning had specifically a positive effect on employees' internal employability (Sanders & Grip, 2004). Related evidence comes from a study by Groot and van den Brink (2000). The authors show that formal learning in terms of the number of on-the-job training courses relates to employability. They measure employability in two ways: the extent to which employees can be assigned to other jobs within the firm and by the way small problems are solved. In the same vein, Van der Heijden et al. (2009) find a positive relationship between formal job-related training, operationalized as the number of days participants attended training programs and three dimensions of employability: occupational expertise, anticipation and optimization, and corporate sense. However, a recent study by Froehlich, Beausaert, Segers, and Gerken (2014), building on the theoretical framework of Van der Heijden et al (2009) reveals that the hours spent on formal learning merely affects the employability dimension anticipation and optimization. In sum, formal learning contributes to employability. Therefore, we predict:

Hypothesis 1: Formal learning is positively related to employees' employability.

2.2.4   THE RELATIONSHIP BETWEEN INFORMAL LEARNING AND EMPLOYABILITY

Only a few studies have linked informal learning and employability. In a study among non-academic staff, Van der Heijden et al. (2009) tested how informal learning influenced employability. The authors measured informal learning in terms of networking inside and outside the university. A positive relation was found between networking inside the university and occupational-expertise, personal flexibility, corporate sense and balance (Van der Heijden et al., 2009). Additionally, networking outside the university predicted anticipation and optimization. Two other dimensions of employability, corporate sense and balance, were predicted by the communication with the supervisor. Froehlich et al. (2014) show that different forms of learning from others, i.e. feedback seeking, information seeking and help seeking, are related to three dimensions of employability: occupational expertise, anticipation and optimization, and personal flexibility. Evidence from a related line of research reveals the effect of informal learning on professional development. Van de Wiel et al. (2011) report in their study that informal learning is very much embedded in the clinical workplace of physicians. Participants in the study indicate to learn most from discussing patient cases with their colleagues. Especially advice seeking and feedback seeking are valued for professional development. Similarly, Van der Rijt, Van den Bossche, and Segers (2013) relate feedback seeking to professional development. They find that the quality of feedback has a bigger impact on perceived professional development among young employees than the frequency of feedback seeking. Based on these insights we formulate the following hypothesis:

Hypothesis 2: Informal learning is positively related to employees' employability.

We propose that informal learning has a higher influence on employability than formal learning. Several studies point out that informal learning is expected to contribute to professional development (Eraut, 2004; Lohman, 2005; Schulz & Stamov Roßnagel, 2010). Likewise, most learning in organizations does not occur in formalized learning programs (Flynn et al., 2006; Tannenbaum, 1997). Two of the research studies mentioned above indicate that informal learning has a bigger impact on employability compared to formal learning (Froehlich et al., 2014; Van der Heijden et al., 2009). Therefore, we hypothesize:

Hypothesis 3: Informal learning will have a stronger influence on employability than formal learning.

2.3   METHOD

2.3.1   RESEARCH SETTING

The research setting for this study was an organization in the emergency medical services in the Netherlands. The organization provides acute aid and medical assistance in a pre-hospital setting. Employees are trained medical professionals that operate in a fast-paced environment characterized by continuous change. This change is fueled by new insights from acute medical care, the integration of new technologies and the variety of situations employees must deal with such as car accidents or incidents of heart attack. In this setting, HRD practitioners currently offer formal learning programs in the form of trainings, courses and workshops. These formal programs are a mandatory part of employee's professional development to maintain certification. At the same time, formal learning creates challenges for the rapid changes and to keep up with all the minor and major problems that employees encounter in their daily job. Accordingly, informal learning might play a role for continuous professional development. Thus, the emergency medical services represent a natural setting to test our hypothesis about the impact of formal and informal learning on employee's employability.

2.3.2   PROCEDURE AND PARTICIPANTS

The organization was contacted and invited to participate in the research. After an introductory meeting, a survey was set up and adapted to the specific setting of the organization in cooperation with a HRD practitioner of the organization. The survey was distributed by HRD via email among all three hundred employees, with a link to the survey. To increase the response rate, all employees received one reminder after two weeks. The final sample consisted of N = 121 participants (response rate 40%), of which 32 were female (26%) and 89 were male (74%). The mean age was 43.43 years (SD = 8.31). The majority of participants was married (80%) and had children at home (72%). On average, participants had 10.52 years (SD = 7.29) of working experience in the organization and worked for 9.47 years (SD = 6.71) in their current function.

2.3.3 MEASURES

The survey consisted of four parts measuring formal learning, informal learning, employability and control variables. Table 2.1 gives an overview of the scales used in the survey. In line with previous research (e.g. Sanders & de Grip, 2004; Gerken, Beausaert, & Segers, 2015) formal learning was measured by giving participants a list of formal learning activities, i.e. participation in courses, trainings, symposia, and seminars that are offered by the organization. Participants indicated how many hours they spent on these learning activities during the last year.

Informal learning was assessed using an adapted version of the informal learning questionnaire developed by Kyndt et al. (2009). We modified the questionnaire to capture the actual learning behavior in the workplace instead of conditions for learning. All items were rated on a 5-point Likert scale. Because the questionnaire was adapted, an exploratory factor analysis was performed to validate the transformed questionnaire (Gerbing & Hamilton, 1996). The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO = 0.84) and Bartlett's Test (p = .000) indicated that the data set was appropriate for further analysis. Suppressing factor loadings lower than 0.40, a principal component analysis with direct oblimin rotation, yielded a solution with 5 factors and a number of cross-loading items. Cross-loadings were eliminated and resulted in the elimination of one factor. A four-factor solution was obtained, each with an eigenvalue greater than 1.00 accounting for 48.90% of the variance (see also appendix). The final questionnaire contained 23 items. The categories include: using feedback, creating opportunities to gather information from others, active engagement in learning opportunities, and proactive learning from others.

Employability was measured with a questionnaire developed by Van der Heijde and Van der Heijden (2006). We used three dimensions for our survey measuring occupational expertise, i.e. developing the expertise necessary to adequately perform the various tasks in a job; anticipation and optimization, i.e. preparing for and adapting to future changes; and personal flexibility, i.e. having the capacity to easily adapt to changes in the labor market. All 31 items were answered on a 6-point Likert scale. A confirmatory factor analysis confirmed the structure in our sample: Root Mean Square Error of Approximation (RMSEA) =.067, Comparative Fit Index (CFI) = .97, Non-normed Fit Index (NNFI) = .96 and Standardized Root Mean Square Residual (SRMR) =.077 (Hu & Bentler, 1999).

Control variables. Based on previous research, we selected age, gender, number of years working in the organization, and number of years working in current function as control variables for this study. We asked for chronological age, and how many years participants worked for the organization and in their present function. Gender was coded with woman as 0 and man as 1.

Table 2.1 Overview of the Scales used in the Survey

SCALE	ITEMS	SAMPLE ITEM	α
Using feedback	6	Feedback from my colleagues motivates me to act	0.90
Creating opportunities to gather information from others	5	I meet employees from other organizations by participating in symposia, conferences, workshops, and lectures	0.78
Active engagement in learning opportunities	6	I participate in project teams composed of employees from different departments	0.77
Proactive learning from others	6	When I need help, tips or advice, I ask my colleagues or members of the management team	0.80
Occupational expertise	15	I consider myself competent to engage in in-depth, specialist discussions in my job domain	0.93
Anticipation & Optimization	8	I take responsibility for maintaining my labor market value	0.82
Personal flexibility	8	How easily would you say you can adapt to changes in your workplace?	0.70

2.4 DATA ANALYSIS

Data were analyzed by first doing preliminary analyses (means, standard deviations, correlations) to explore the relationships between informal learning, formal learning and employability. Next, we used a series of separate hierarchical regression analyses to examine the effect of formal learning and informal learning behavior on three dimension of employability thereby including the control variables. The first hierarchical regression analysis focused on formal learning and employability to test hypothesis 1. The following hierarchical regression analysis tested the predictive value of the four informal learning activities separately (i.e. using feedback, creating opportunities to gather information from others, active engagement in learning opportunities, and proactive learning from others) on employability to test hypothesis 2. Finally, hierarchical regression analyses were conducted to test hypothesis 3, which states that informal learning has a stronger influence than formal learning on occupational expertise, anticipation and optimization and personal flexibility. The control variables were entered in step 1 followed by informal learning in step 2 and formal learning in step 3 to analyze how much variance is explained by the different independent variables.

2.5 RESULTS

The descriptive statistics (mean, standard deviation) for all variables in this study are displayed in Table 2.2. The mean score for formal learning indicates that participants overall spent 19.01 hours on training activities. The standard deviation (SD = 8.28) shows that the amount of hours spent on formal learning differed among participants. The findings regarding informal learning reveal that participants report to engage to a slightly lesser extent in active engagement in learning opportunities and proactive learning from others in comparison with the other two activities using feedback and creating opportunities to gather information. The mean scores for the three dimensions of employability show the participants have a more positive perception of their occupational expertise compared to anticipation & optimization and personal flexibility.

Next, we examined the relationships between formal and informal learning and employability (Table 2.2). The analysis reveals in general strong correlations between informal learning and employability (ranging from $r = 0.24$ to $r = 0.67$, $p < .01$). Formal learning is significantly positively correlated with all three employability dimensions: occupational expertise ($r = 0.18$, $p < .05$), anticipation and optimization ($r = 0.19$, $p < .05$), and personal flexibility ($r = 0.28$, $p < .01$). Regarding the control variables, there are some interesting results. Number of years in organization is significantly negatively related to two informal learning activities: using feedback ($r = -0.22$, $p < .05$) and proactive learning from others ($r = -0.19$, $p < .05$). It appears that the longer the employee works in one and the same organization, the less informal learning is taking place. In contrast, the number of years in the current function is significantly positively related to active engagement in learning opportunities.

Table 2.2 Descriptive statistics and correlations

VARIABLE	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	.74	.44												
2. Age	43.44	8.31	.09											
3. Years in organization	10.57	7.29	.16	.66**										
4. Years in current function	9.47	6.71	.16	.55**	.69**									
5. Formal learning	19.01	8.28	-.08	.08	-.06	-.04								
6. Informal learning: Using feedback	3.86	.76	-.10	-.17	-.22*	-.13	.11	(.90)						
7. Informal learning: Creating opportunities to gather information	3.73	.75	-.06	.06	.00	.02	.08	.38**	(.78)					
8. Informal learning: Active engagement in learning opportunities	3.30	.91	.02	-.02	.02	.22*	.13	.43**	.54**	(.77)				
9. Informal learning: Proactive learning from others	3.43	.77	-.14	-.18*	-.19*	-.06	.07	.59**	.45**	.59**	(.80)			
10. Occupational expertise	4.98	.52	.06	.07	.02	.18*	.18*	.28**	.29**	.29**	.31**	(.93)		
11. Anticipation and optimization	4.47	.68	-.09	-.07	-.14	-.06	.19*	.39**	.44**	.41**	.55**	.52**	(.82)	
12. Personal flexibility	4.61	.46	.01	-.04	-.05	.03	.28**	.24**	.34**	.41**	.36**	.67**	.61**	(.70)

Note. N= 121. Numbers in parentheses are Cronbach's alpha

* $p < .05$, ** $p < .01$.

2.5.1 HYPOTHESIS TESTING

The three hypotheses were investigated using hierarchical regression analysis. The results are depicted in Table 2.3. Hypothesis 1 specifies that formal learning influences employability. Results show that the control variables do not change the significant effect of formal learning on personal flexibility (ß = 0.24, p< .01). Employees who follow formal learning programs seem to better be able to adapt to all kinds of daily changes occurring in their work such as working with new colleagues or technical equipment. The results are partly consistent with hypothesis 1.

Hypothesis 2 predicts that all four informal learning activities influence the three dimensions of employability. The results show a significant relation of two informal learning behaviors on employability. Creating opportunities to gather information from others is positively and significantly related to anticipation and optimization (ß = 0.22, p< .05). The same accounts for proactive learning from others (ß = 0.40, p< .001) that also has a significant effect on the second dimension of employability. Therefore, hypothesis 2 is partly supported.

Hypothesis 3 states that informal learning has a stronger influence on employability than undertaking formal learning. Results concerning the predictability of employability through formal and informal learning are displayed in Table 2.3. As mentioned earlier, the results reveal that both creating opportunities to gather information and proactive learning from others significantly positively relate to anticipation and optimization, indicating that participant's determination to invest in their personal development is valuable for identifying opportunities and anticipating future changes. Formal learning significantly predicts personal flexibility but not the other two dimensions. Furthermore, the analysis shows that informal learning explains 20%, 36% and 21% of variance in occupational expertise, anticipation and optimization and personal flexibility. After entry of formal learning in step 3, the total variance is 22% for occupational expertise, 38% for anticipation and optimization and 27% for personal flexibility. The introduction of formal learning in the third step does not explain significantly more variance confirming Hypothesis 3.

As far as the control variables are concerned, we found a significant positive relationship between the number of years in the current job function and occupational expertise. Respondents working in the same job for several years seem to build up expertise necessary for the job.

Table 2.3   Results of hierarchical regression analysis for occupational expertise, anticipation and optimization, and personal flexibility

	DEPENDENT VARIABLES								
	OCCUPATIONAL EXPERTISE		ANTICIPATION AND OPTIMIZATION			ANTICIPATION AND OPTIMIZATION		PERSONAL FLEXIBILITY	
Variable	R²	R² Change	β	R²	R² Change	β	R²	R² Change	β
Step 1	.06	.06		.03	.03		.01	.01	
Gender			.04			-.07			.01
Age			.04			.03			-.03
Years in organization			-.22			-.20			-.13
Years in current function			.31*			.06			.14
Step 2	.20**	.14**		.36***	.33***		.21***	.20***	
Using feedback			.17			.03			-.03
Creating opportunities to gather information			.13			.22*			.15
Active engagement in learning opportunities			.00			.04			.23
Proactive learning from others			.15			.40***			.17
Step 3	.22	.02		.38	.02		.27**	.06**	
Formal learning			.14			.13			.24**
ΔR²	.14**			.32***			.21**		

Note. N= 121. Standardized regression coefficients (Beta) are reported
*p < .05, **p < .01, ***p < .001.

Interestingly, none of the variables predicts occupational expertise. However, we find that the number of years working in the current function play a role for occupational expertise (ß = 0.31, p< .01). Figure 2.1 depicts the results and gives an overview of the significant relationships between the variables.

Figure 2.1. Standardized estimates effects of informal learning, formal learning, and background characteristics on employability. Only significant effects are displayed.
Note. *p < .05, **p < .01. N = 121.
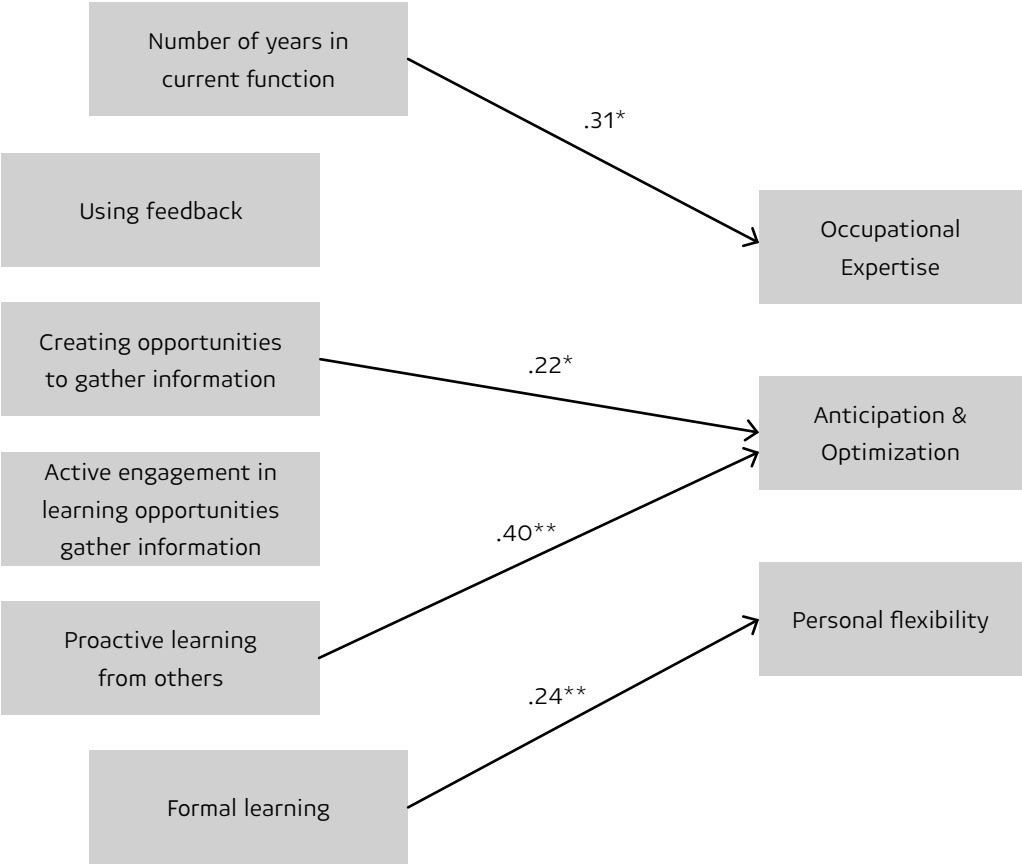
2.6 DISCUSSION

The current study was set up in the field of emergency medical services to empirically investigate how formal and informal learning relate to three dimensions of employability, i.e. occupational expertise, anticipation and optimization and personal flexibility. While literature has provided insight into formal and informal learning in the workplace in general (Boud & Middleton, 2003; Marsick, Volpe, & Watkins, 1999; Van de Wiel et al., 2011; Watkins & Marsick, 1992), this study examined the specific informal learning behaviors employees engage in. Our results reveal that two informal learning behaviors, creating opportunities to gather information and proactive learning from others, affect the dimension anticipation and optimization. Employees in the emergency medical services that create opportunities and proactively look for others are better able to anticipate possible changes in their career. They have the ability to reflect on developments in their specific discipline and understand the requirements that these impose on their own personal development. These results confirm previous research findings (Froehlich et al., 2014; Van Dam, 2004). For example, Van Dam (2004) showed that employees scoring higher on proactive behavior and take initiative were more willing to improve their employability.

Furthermore, employees taking part in formal learning programs help colleagues to deal with changes occurring in their daily work behaviors such as new tasks and roles. Our results suggest that formal learning seems to provide employees with a certain knowledge base and skills necessary to be flexible in handling all kinds of small changes in the workplace. These results contribute to earlier findings on formal learning and employability (Froehlich et al., 2014; Van der Heijden et al., 2009).

Although not part of the investigation, it is interesting to note we found contrasting results regarding the control variables. We found that the number of years working in an organization is negatively related to two informal learning behaviors (using feedback and proactive learning from others). It appears that by gaining a lot of work experience in an organization employee's learning decreases. In contrast, the number of years working in the current function is significantly positively related to active engagement in learning opportunities. It seems that the organization does not trigger to invest in informal learning the longer you stay in it. It even impedes learning. However, being longer in the function does seem to trigger informal learning. Previous research identified organizational culture having a strong impact on informal learning (Ellinger, 2005; Marsick, Volpe, & Watkins, 1999). Future research should investigate if the learning culture plays an antecedent role for informal learning.

Our findings also inform HRD practitioners and researchers on the complex mix of formal and informal learning behaviors employees engage in and their influences. Typically, formal and informal learning are described as parts of a continuum (Eraut, 2000; Malcolm, Hodkinson, & Colley, 2003; Svensson, Ellström, & Åberg, 2004) and might complement each other (Tynjälä, 2008). The findings of this study show that formal and informal learning behaviors enhance different dimensions of employability. This might be not surprising since formal learning is a mandatory part of the job in the emergency medical services. Employees have to follow formal training

programs to stay up-to-date and keep their job. Consequently, it is not clear to what extent the results can be generalized to other contexts in which training is not mandatory or has no consequences for maintaining a job. Repeating our study in those kind of context could be relevant. Next, informal learning behaviors have a stronger influence on employability than formal learning. This is in line with previous studies indicating that informal learning had a higher effect on employability than formal learning (Froehlich et al., 2014). This study is one of the first that defines informal learning by referring to concrete, observable behaviors and how these learning behaviors contribute to the dimensions of employability. Research should continue to explore in how far formal learning characteristics and organizational characteristics play a moderating role in the relationship between informal learning behaviors and the dimensions of employability.

2.7   LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

A few limitations and methodology issues are relevant for theory and future research. First, self-report data were used to map the learning experiences of employees. This means we used participant's perceptions to measure both employability and informal learning behaviors, also known as common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff, MacKenzie, & Podsakoff, 2012). Gathering data from different sources (for example, employees and supervisors) can prevent the common method bias (Podsakoff et al., 2003). However, informal learning behaviors occur in informal situations and are therefore less observable by others. The learners are the first to have sufficient information about to what extent they show informal learning behavior in different (emergency) situations. The same counts for employability: in the emergency medical services it is challenging for supervisors and colleagues to monitor closely the daily work of every employee that often occurs outside the view of the supervisor at the emergency scene. Future research could use multiple raters, for example, colleagues that are present at the emergency situation. In addition, further cross-validation in other organizations is recommended to increase generalizability. Second, although using a questionnaire is a valid method to arrive at statistical descriptions of a large sample, due to its format, it necessarily addresses a selection of the broad variety of informal learning behaviors that are taking place in the reality of every day working life. Therefore, future research could use qualitative research methods in tandem with the formerly used questionnaire method in order to explore the richness of the variety of informal learning behaviors employees engage in. Third, we did not take into account characteristics of formal learning programs. Literature on transfer of training focuses on learner characteristics, training design and the transfer climate of the organization (Kontoghiorghes, 2004). Future research could study similar research models, while also taking into account the three groups of characteristics that might influence transfer of training. As concerns the measurement of learning behaviors in informal settings, future research could also study the relation between (in)formal learning and other outcome variables that are related to employability such as innovative work behavior. Related to the interest in employability, increased competition also requires organizations to stay innovative and keep on developing new ideas or procedures. To accelerate innovation in organizations, it has been argued that inno-

vation has to be part of the behavior of each employee. Therefore, innovative work behavior of employees may be an interesting outcome for future research.

2.8   PRACTICAL IMPLICATIONS FOR HRD

The relation between formal learning, informal learning and employability also has practical implications, especially with reference to HRD. The above findings imply that it is worthwhile to pay attention to daily interactions that take place in the work environment by, for example, strengthening the exchange of feedback among colleagues in the workplace, to enhance employability. This could, for example, be stimulated by setting up an e-learning platform that supports employee's informal learning by identifying and making available the expertise of colleagues. Knowing which colleagues possess which knowledge can encourage employees to share knowledge and information in order to proactively learn from others. The interaction and collaboration lay the foundation for enhancing employability among employees.

Next, informal learning is not intended to replace formal learning. Formal learning adds most when it is relevant and timed but needs further informal learning for the best effect in the workplace. Ideally, both informal and formal learning are part of an employee's learning opportunities to sustain employability. Recognizing the value in supporting employees' continuous learning, HRD practitioners should create a supportive work environment. This work environment offers a variety of learning opportunities that stimulate employees to interact and learn from each other. For example, providing time and space can support informal learning (Tannenbaum et al., 2010) by encouraging employees to follow training and share their knowledge gained with the colleagues in the workplace. In line with our results, investing in interventions that support the relationship between colleagues in the workplace seems rewarding. One way is to create awareness of informal learning through the use of workshops in which HRD practitioners help employees to broaden their view on learning. These workshops can help unfreeze their view on learning. Employees could be asked to describe what they do when confronted with challenging issues where they do not know an answer immediately. Do they turn to their colleagues or supervisors and ask for advice? To maximize the benefits of these learning opportunities, HRD practitioners should support their employees by taking a more strategic look at their offerings.

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APPENDIX: ITEMS AND FACTOR LOADINGS

INFORMAL LEARNING				
	Loadings			
Items	1	2	3	4
Feedback from management motivates me to act	.914			
Feedback from management makes me reflect.	.892			
Feedback from colleagues motivates me to act.	.885			
Feedback from colleagues makes me reflect.	.848			
I help colleagues dealing with work issues.	.655			
I help management dealing with work issues.	.515			
I look into the results of job controls, audits, and inspections.		.830		
I attend lectures of guest speakers from outside the organization.		.719		
I use the internet to find information related to my work.		.586		
I participate in meetings.		.544		
I meet colleagues from other organizations by participating in conferences, workshops, and lectures.		.515		
I coach internal trainees.			.761	
When I have a question, I mostly ask colleagues that have the same educational background.			.719	
I participate in project teams composed of employees from different departments.			.590	
I participate in department meetings.			.570	
I participate in case discussion.			.496	
I participate in project groups to discuss work-related problems.			.406	
I discuss the results of quality audits with my colleagues.				-.716
When I need help, tips or advice, I ask my colleagues or members of the management team.				-.679
I am part of a learning or knowledge network (Community of practice).				-.604
I ask colleagues, supervisors, and subordinates for feedback about my own functioning.				-.558
Colleagues ask me for feedback.				-.461
I make recommendations for improvement based on project reports and dossiers.				-.417
Eigenvalue	9.17	2.73	1.53	1.23
Percentage explained variance	30.58	9.10	5.11	4.11
Cronbach's alpha	.90	.78	.75	.80

Note: Rotated factor matrix: oblimin rotation. Loadings below .40 omitted.
Excluded items:
I have a coach
I have a mentor
I meet colleagues in a common space (office, meeting room,…)

Chapter 3

*Working on the professional development of faculty staff
in higher education: Investigating the relationship between
social informal learning activities and employability**

ABSTRACT

In this study, we examined how social informal learning and formal learning of faculty staff in higher education relate to their employability. Data were collected from 209 faculty staff members working at a Dutch university. Results showed that social informal learning was related to the employability of faculty staff. Further analysis revealed that especially external information seeking and acting upon feedback from colleagues and not formal learning predicted the employability of faculty staff. The finding suggests that institutes of higher education should especially foster the professional development of their faculty staff by stimulating exchange of information and seeking and using feedback with colleagues in a proactive manner.

3.1 INTRODUCTION

The concept of lifelong learning has been recognized as a necessity for enhancing professional development (Carnevale & Smith, 2013). Reforms and fast-evolving knowledge continuously require faculty staff to innovate and rethink their practices to keep on delivering high-quality work (Futrell, 2010; Hökka & Etelapelto, 2014; Nicholls, 2005). Rethinking practices does not only imply updating professional expertise in the domain of learning and instruction; it also means being able to deal with new ideas and practices which are suggested or yet implemented as well as taking a proactive role in reflecting on the current developments in the field, and acting upon those developments (Darling-Hammond, 2010). In this respect, Van der Heijde and Van der Heijden (2006) use the concept of employability. Faculty staff that are employable possess the following core competences, namely occupational expertise (having the knowledge), anticipation and optimization (taking a proactive role in reflecting on the current developments in one's field and the potential changes for the job, and acting upon those developments), personal flexibility (passively adapting to changes related to the tasks and functions in the workplace), corporate sense (participation in different work groups and sharing responsibilties), and balance (having a work-life balance; Van der Heijde & Van der Heijden, 2006). Enhancing the employability of faculty staff requires professional development that involves both teaching and learning and creates new visions of what, when, and how faculty staff should learn in the workplace (Darling-Hammond, 2010; Futrell, 2010; Hökka & Etelapelto, 2014; Richter, Kunter, Klusmann, Lüdtke, & Baumert, 2011).

Traditionally, professional development needs of faculty staff have been answered with formal in-service training activities such as workshops or seminars based on the notion that knowledge and expertise are best updated outside the day-to-day work context (Futrell, 2010; Nicholls, 2005). However, formal activities have been criticized for not meeting the needs of faculty staff (Poulson & Avramidis, 2003). These needs include the notion that professional development evolves over time and that much of the learning takes place in an informal way in the daily work practice (Darling-Hammond, 2010; Eraut, 2004; Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009; Nicholls, 2005; Roscoe, 2002). Informal learning is generally defined as learning that is unstructured and happens spontaneously in the workplace without systematic support to foster learning (Hoekstra et al., 2009; Marsick & Volpe, 1999; Richter et al., 2011). According to literature, informal learning can take place individually through, for example, reading professional literature, and socially in collaboration with others (Eraut, 2004), and is expected to support the professional development of faculty staff (Lohman, 2006).

Prior studies measuring informal learning did not clearly differentiate between individual and social informal learning in relation to professional development (e.g. Kwakman, 2003; Lohman, 2003; Richter et al., 2011). However, increasing evidence for social informal learning is found making it necessary to research the influence of individual and social informal learning separately. For example, research on the professional learning communities of faculty staff showed that professional development is built upon learning from others through collaboration, reflective dialogue among colleagues and nurturing relationships for the purpose of collectively constructing

new meaning and improving the skills and knowledge that result in action (DuFour, 2004; Vescio, Ross, & Adams, 2008; Williams, 2003). In addition, Van der Heijden, Boon, Van der Klink, and Meijs (2009) indicated that especially networking as a part of social informal learning in terms of meeting and exchanging information with colleagues inside and outside the organization was associated with employability. Carbery and Garavan (2005) found that in times of structural and strategic change, individuals preferred to help and learn from colleagues in order to develop professionally. Other authors emphasized the importance of collaboration and professional dialogue in general for the professional development of faculty staff (Guasch, Alvarez, & Espasa, 2010; Horn & Little, 2010; Korthagen, Loughran, & Russell, 2006; Little, 2002; Van Kruiningen, 2013). Since these studies indicate the importance of social informal learning but have been conceptualizing social informal learning in a quite broad way (social networks, collaboration, and dialogue), the purpose of the current study is to investigate how specific social informal learning activities as well as formal learning activities relate to the employability of faculty staff.

3.2   THE EMPLOYABILITY OF FACULTY STAFF

The importance of dealing with and anticipating on changing work conditions is an important topic in research on teaching and teacher education (Avalos, 2011; Hökka & Etelapelto, 2014; Vescio et al., 2008). For example, innovation in the teaching domain requires faculty staff to adopt new pedagogical approaches (Putnam & Borko, 2000) and in turn direct their own professional development (Kwakman, 2003). However, not only the field of teaching is challenged by continuous change. In many professions, employees face increasing dynamics in the market they operate in. In order to be able to deal with these dynamics, the concept of employability has gained interest in workplace learning research (Fugate & Kinicki, 2008; Thijssen, Van der Heijden, & Rocco, 2008; Van der Heijde & Van der Heijden, 2006).

Employability is a widely used concept in organizations and has been defined in several ways (Forrier & Sels, 2003; Van der Heijde & Van der Heijden, 2006). Taking a historical perspective, Forrier and Sels (2003) presented a comparative conceptualization of the term employability. In the 1950s and 1960s, characterized by economic prosperity, full employment was high on the governmental agenda. In this respect, employability referred to the aim of getting the unprivileged and unemployed to the labour market. In the 1970s, the focus shifted to the employees having the necessary skills and knowledge in order to be as employable as possible. In the 1980s, employability was no longer defined as a labour market instrument but rather as an HR instrument in terms of reaching optimal functional flexibility. In the 1990s, employability was again defined from a labour market perspective, and did not only refer to the entry into the labour market, but especially focused on career possibilities within and beyond the borders of organizations. However, the fast rate of organizational and environmental changes makes it difficult to define employability from a labour market perspective. In addition, job-based human resource management (HRM) systems have been replaced by competence-based, person-related HRM systems during the past decade. This change has been fuelled by an increasing prevalence of cross-organizational careers and changing job descriptions (Brown, Hesketh, & Williams, 2003; McArdle, Waters, Briscoe, & Hall, 2007). Taking into account the organizational psychology perspective, employability is seen as the perceived likelihood of getting and maintaining a job (Berntson & Marklund, 2007). More specifically, it refers to an individual's perceived capabilities of getting new employment. In this context, Van der Heijde and Van der Heijden (2006) have been suggesting a competence-based conceptualization of employability in order to gain a deeper understanding of the individual capabilities of employability. They define employability as "the continuous fulfilling, acquiring or creating of work through the optimal use of competencies" (Van der Heijde & Van der Heijden, 2006, p. 435). Based on extensive literature and empirical research, they identified five competences of an employable employee (or dimensions of employability), namely occupational expertise, anticipation and optimization, personal flexibility, corporate sense, and balance (Van der Heijde & Van der Heijden, 2006). Occupational expertise refers to having knowledge and skills for the current job. Anticipation and optimization means taking an active role in reflecting on the current developments in one's field, and acting upon those developments. Personal flexibility means passively adapting to changes related to the tasks and functions in the workplace. Corporate sense consists of identifying with the corporate goals of an organization thereby accepting collective responsibilities. Balance is defined as the compromise between the employer's interests and the employee's work, career, and private interests (Thijssen et al., 2008; Van der Heijde & Van der Heijden, 2006). For this study, the concept of employability, as defined by Van der Heijde and Van der Heijden (2006), is selected as an indicator for the professional development of faculty staff, as the authors define employability as a construct that is subject to learning and the context. This competence-based approach enables faculty staff to keep track of their career needs (Van der Heijde & Van der Heijden, 2006). After the assessment of competences, faculty staff can take actions to improve their employability through job-related activities (Van der Heijde & Van der Heijden, 2005). More specifically, we are interested in the expertise (occupational expertise) and adaptability of faculty staff (anticipation and optimization and personal flexibility) in the job. The different dimensions of employability separately have gained attention in the domain of teaching, for example, when studying the professional development of faculty staff (Nauta, Vianen, Van der Heijden, Dam, & Willemsen, 2009). Professional development in education means that faculty staff members are flexible in the workplace (Darling-Hammond & McLaughlin, 1995; Little, 2002), deal with innovations and future changes (Gorozidis & Papaioannou, 2014), and possess the necessary professional expertise (Kwakman, 2003; Lohman, 2006). Consequently, they must be supported in developing these competences.

3.3   FORMAL AND INFORMAL LEARNING ACTIVITIES

Having discussed the importance of employability, we now focus on the variables predictive for being employable. Researchers in the domain of workplace learning stress that the dynamics in the workplace ask for supporting professionals' employability and in turn for providing them with learning experiences (Mulder, 2013; Van der Heijden & Bakker, 2011). Learning experiences

in the workplace can occur in different settings such as formal and informal, individually or in social interaction (Tynjälä, 2008). Previous research on employability mainly focused on formal learning activities (Nauta et al., 2009; Van der Heijden et al., 2009). Formal learning activities are intentionally planned educational activities that usually take place outside the classroom (e.g. in the form of training or workshops and seminars). Learning in this setting happens in a structured environment in which experts disseminate information that can be applied in the workplace (Tannenbaum, Beard, McNall, & Salas, 2010). Formal learning activities such as training, workshops, and courses are still the most widely used form for supporting professional development of faculty staff (Futrell, 2010; Richter et al., 2011). However, changes in the workplace are rapid and continual, which creates challenges for traditional, formal learning (Ellinger, 2005). Formal training cannot keep up and it becomes nearly impossible to follow the need for learning and development activities (Eraut, 2004). Moreover, research has shown that effects of formal learning on employees' performance are limited. Individuals attributed less than 10% of their personal development to formal learning activities (e.g. Flynn, Eddy, & Tannenbaum, 2006; Tannenbaum, 1997). Moving beyond the basic training programmes, Noe, Tews, and Marand (2013) estimate that informal learning accounts for up to 75% of learning that occurs within organisations. Informal learning is defined by Mulder (2013, p. 52) as "cognitive and physical learning activities (that lead to cognitive activities) that can be deliberate or reactive, and that lead to competences but not to formal qualifications". Hoekstra et al. (2009) add that informal learning "refers to learning in the workplace where systematic support of learning, such as professional development trajectories, is absent" (p. 663). Informal learning can happen individually (self-focused learning activities) or in social interaction (other-focused learning activities).

Prior research studies focused on the measurement of informal learning (e.g. Lohman, 2003; Poulson & Avramidis, 2003; Richter et al., 2011). These studies did not differentiate between individual and social informal learning and generally asked participants about whether they undertook several activities such as discussing issues with colleagues, collaboration, sharing materials and resources, mentoring or coaching, and also observing others or reading professional literature. However, increasing evidence for social informal learning is found making it worthwhile to differentiate between individual and social informal learning in order to study the effects separately. Influenced by socio-constructivist learning theories, the social nature of learning, that is, proactively seeking for relevant others in the workplace to fuel a continual update of knowledge and skills, has gained a lot of interest (Conlon, 2004; Eraut, 2004; Tynjälä, 2008). Being proactive in a social context is described as being central to informal learning (Eraut, 2004) and takes place at professional's own initiative (Grant & Ashford, 2008). Related evidence from the empirical research reinforces this view, revealing that acting upon feedback, information seeking and help seeking are components of social informal learning (Froehlich, Beausaert, Segers, & Gerken, 2014; Kyndt, Dochy, & Nijs, 2009). Information seeking refers to a proactive search for and giving of information (Cross, Rice, & Parker, 2001). Acting upon feedback means to identify the adequacy of one's behaviour and seek and use the feedback to secure certain goals (Ashford & Cummings, 1983). Effective feedback is a dialogue either between employees or between employee and supervisor to share information and perspectives about performance. Employees have to use the information they either sought or received and act

upon it to change or learn (Ashford, 1986). Help-seeking behaviour can be seen as a specific type of information-seeking behaviour (Lee, 1997) and involves asking others for assistance or advice (Karabenick & Knapp, 1988). A few studies demonstrated a positive relation between these three specific learning activities and performance (Ashford, 1986). For example, information seeking allows employees to experience less uncertainty and understand factors that lead to job success and higher satisfaction and performance (Borgatti & Cross, 2003; Morrison, 2002). Studies showed that feedback seeking helps individuals to continuously improve their performance at work (Gupta, 1999; Salas & Rosen, 2010; Van der Rijt, Van den Bossche, Van de Wiel, Segers, & Gijselaers, 2012) and improve learning processes and results (Shute, 2008). Moreover, employees who not only gather but also act upon the feedback are able to understand how to perform effectively, oversee perceptions about their potential, and assess their performance (Anseel, Lievens, & Levy, 2007). Acting upon feedback presents a relevant step in an employee's learning experience. Another important component to employees is help seeking. Help seeking supports to expand resources like knowledge (Lee, 1997) and is therefore seen as a key element to achieve job success (Hofmann, Lei, & Grant, 2009; Van der Rijt et al., 2013). Employees mainly seek help to solve problems and, in turn, further develop their expertise (Lee, 1997).

3.4 THE ROLE OF FORMAL AND SOCIAL INFORMAL LEARNING ACTIVITIES IN SUPPORTING THE EMPLOYABILITY OF FACULTY STAFF

Previous research focused on the link between professional development of faculty staff in general (e.g. Avalos, 2011) and autonomy (e.g. Clement & Vandenberghe, 2000) or learning in general (e.g. Borko, 2004). To our knowledge, however, only a few empirical studies have been looking into the relation between formal and social informal learning and employability (e.g. Van der Heijden et al., 2009). Van der Heijden et al. (2009) evidenced the importance of formal as well as informal learning for the employability of non-academic staff members at a Dutch university. They measured the role of the amount of formal learning activities as well as the role of network resources inside and outside the organization. Network resources refer to "all relationship ties that provide career and psychosocial support, and of which the individual is aware, as well as those relationship ties that assist career progression without the individual's full knowledge or awareness" (Van der Heijden et al. 2009, p. 8-9). The results show that the uptake of informal learning activities relates to more dimensions of employability than formal learning activities. More concretely, participating in formal training programmes positively relates professionals' occupational expertise as well as anticipation and optimization. Networking within the own organization is positively related to occupational expertise, flexibility, balance, and corporate sense. Networking outside the company is positively related to anticipation and optimization. Other research studies addressed the informal learning practices of faculty staff on professional development (Lohman, 2006; Panagiotakopoulos, 2011; Poulson & Avramidis, 2003; Richter et al., 2011). Lohman (2006) revealed in her study on informal learning that faculty staff preferred talking and collaboration with colleagues instead of individual activities such as reading professional literature. Panagiotakopoulos (2011) proposed that informal learning is seen as on-the-

job training where faculty staff can observe, imitate, and learn from others. In their study among 265 faculty staff members, Poulson and Avramidis (2003) identified collaboration and dialogue among colleagues as an informal learning activity that contributed to the expertise development of faculty staff. Richter et al. (2011) looked at the update of formal and informal learning opportunities among 1939 secondary school teachers. The authors operationalized informal learning opportunities as individual engagement in professional literature and as collaboration among teachers. They found that the uptake of these opportunities changed across the teaching career with older teachers collaborating less and using professional literature more frequently compared to younger teachers (Richter et al., 2011).

In summary, the results of the previous studies indicate that social informal learning is an important determinant of professionalization. However, these studies have been addressing the role of social informal learning on employability in a quite general way (social networks, collaboration, and dialogue), implicitly incorporating informal learning behaviours such as information seeking (Lee, 1997; Loh, Friedman, & Burdick, 2014), asking for help or advice (Karabenick, 2004), and seeking feedback (Ashford, 1986). In this study, we want to address this gap by investigating the relationship between social informal learning activities, formal learning activities, and employability.

3.5   RESEARCH QUESTION AND HYPOTHESES

The central research question is: how do social informal learning and formal learning activities of faculty staff relate to their employability in terms of occupational expertise, anticipation and optimization and personal flexibility? Based on the few prior studies addressing this question, we formulate the following working hypotheses:

> **Hypothesis 1: *Both social informal learning and formal learning activities are positively related to occupational expertise, anticipation and optimization and personal flexibility.***
>
> **Hypothesis 2: *Undertaking social informal learning activities predicts more dimensions of employability than participating in formal learning activities.***

3.6   METHOD

An online survey was conducted to measure the dependent variable of employability and the independent variables of social informal and formal learning in order to study their relations.

3.6.1   SAMPLE AND DATA COLLECTION

The sample of this study consisted of faculty staff working at a university in the Netherlands. Participants were appointed as teachers and their main task was teaching. In the margin they also fulfil additional tasks, such as administration service and research. Participants were invited via email to respond anonymously and voluntarily to the online survey. The email was sent via a central office of the university to all faculty staff. There were 2158 participants contacted with the invitation to respond to the survey. In total, 209 participants filled in the survey (response rate: 10%).

A total of 86 male and 123 female participants took part. Their age ranged from 22 years to 69 years with a mean age of 35.88 years (SD = 11.279). Out of the 209 participants 159 had a non-tenured position and 50 participants had a tenured position at the university. The teaching experience ranged from less than 1 year (7% of the participants) to more than 20 years (22 % of the participants). Most participants had teaching experience between 1 and 5 years (35%). The majority (52%) of the participants worked in their current position between 1 and 5 years.

3.6.2   MEASURES

For this study, social informal learning, formal learning, employability, and demographic characteristics of faculty staff were measured. Informal learning was based on a newly developed and validated scale (Froehlich et al., 2014). We slightly reformulated the label of the scales given the focus on the acting upon phase during the feedback-seeking process. The questionnaire consists of 10 items and comprises four sub-dimensions rated on a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree): acting upon feedback supervisor, acting upon feedback colleagues, external information seeking, and help seeking (see also appendix). In the original validation study, the exploratory and confirmatory factor analyses among 895 employees in various sectors found a stable set of four social informal learning activities: external information seeking (two items, sample item: "I meet employees from other organisations by participating in conferences, workshops, and lectures"), acting upon feedback from the supervisor (three items, sample item: "The feedback I receive from my supervisor motivates me to reflect"), acting upon feedback from colleagues (three items, sample item: "Feedback from colleagues makes me act"), and help seeking (two items, sample item: "Getting help would be one of the first things I would do if I were having trouble at work"). We confirmed this factor structure also in our sample (see also appendix). The model achieved acceptable fit: Comparative Fit Index (CFI) = 0.90, Root Mean Square Error of Approximation (RMSEA) = 0.13, and Standardized Root Mean Square Residual

(SRMR) = 0.05 (Hu & Bentler, 1999). All scales were internally consistent with a Cronbach's alpha of 0.80 for acting upon feedback supervisor, 0.71 for acting upon feedback colleague, 0.67 for external information seeking, and 0.62 for help seeking. Although two scales were below 0.70, the analysis was continued. For research purposes, reliability as low as 0.60 is still acceptable and the reliability has been proven to be satisfactory in several studies (Froehlich et al., 2014).

To measure formal learning, an open-ended question was used looking into the number of hours faculty staff spent during the past year on different formal learning activities such as trainings, seminars, and workshops.

The three competencies of employability were measured with a validated employability scale (Van der Heijde & Van der Heijden, 2006), looking into occupational expertise, anticipation and optimization and flexibility. All 31 items were rated on a 6-point Likert scale. Sample items are: "I consider myself competent to engage in in-depth, specialist discussions in my job domain" (Occupational expertise), "I take responsibility for maintaining my labour market value" (Anticipation and optimization), and "How easily would you say you can adapt to changes in your workplace?" (Personal flexibility). The internal consistency of all three scales was satisfactory with a Cronbach's alpha of 0.91 for occupational expertise, 0.85 for anticipation and optimization and 0.77 for personal flexibility. A confirmatory factor analysis confirmed the structure: CFI = 0.96, RMSEA = 0.062, and SRMR = 0.07.

The control variables included gender, age, and tenure, which have been previously found to be associated with employability. Gender was measured and coded with women as 0 and men as 1. We asked participants to indicate their age and whether they had a tenure position or not. Likewise, non-tenure was coded as 0 and tenure as 1.

3.7   DATA ANALYSIS

Data were analyzed by first doing preliminary analysis (means, standard deviations and correlations). Next, multivariate multiple regression analyses were performed. This analysis deals with more than one dependent variable and one or more independent variables (Huberty & Morris, 1989). Furthermore, this analysis takes account of the relation between the dependent variables. Social informal learning activities and control variables were entered as independents and occupational expertise, anticipation and optimization, and personal flexibility were entered as dependent variables.

3.8   RESULTS

3.8.1   PRELIMINARY ANALYSIS

The descriptive statistics in Table 3.1 provides an overview of all variables. The data show that faculty staff spent 61 hours on average on formal training activities such as courses and workshops in the last year. However, the standard deviation was high (SD = 56.84), indicating a large variation in the number of hours faculty staff spent on formal learning activities. Formal learning hours ranged from 0 to 200. Regarding social informal learning, the mean score of feedback seeking from the supervisor was the highest among the scales (M = 4.00, SD = 0.91). Help seeking had the lowest score (M = 3.40, SD = 0.67). Furthermore, the standard deviations of all social informal learning scales were rather low indicating that faculty staff undertake a comparable amount of social informal learning activities. What concerns employability, the mean of the scale 'occupational expertise' was slightly higher than the scores of the two other dimensions (M = 4.64, SD = 0.57) suggesting that participants believe to possess a lot of expertise in their field. Next, we examined the relationships between variables. The results of the correlational analysis are shown in Table 3.2. Regarding social informal learning, it was found that participants who acted upon feedback from colleagues showed more occupational expertise (r = 0.17, p < .05), anticipation and optimization (r = 0.33, p < .01), and personal flexibility (r = 0.21, p < .01). In addition, faculty staff that acted upon feedback from their supervisor, seeking external information and help seeking were also better at anticipating and optimizing (r = 0.20, p < .01; r = 0.35, p < .01; r = 0.14, p < .05, respectively). The results showed formal learning was significantly positively related to anticipation & optimization (r = 0.15, p < .05). This means that faculty staff that follow formal learning activities are also looking for change and anticipate future events.

3.8.2   THE RELATIONSHIP BETWEEN SOCIAL INFORMAL LEARNING, FORMAL LEARNING, AND EMPLOYABILITY

We predicted the employability of faculty staff by social informal learning and formal learning in order to address the first and second hypothesis. Multivariate multiple regression analyses were conducted with the three dimensions of employability as dependent variables. Using Wilks' lambda, there was a significant relation between age (Wilks' Lambda = 0.871, F (3, 198) = 9.790, p < .001, partial eta² = 0.129), acting upon feedback colleague (Wilks' Lambda = 0.917, F (3, 198) = 5.943, p < .05, partial eta² = 0.083), and external information seeking (Wilks' Lambda = 0.920, F (3, 198) = 5.736, p < .05, partial eta² = 0.080) on employability. Subsequent analyses revealed that age and acting upon feedback colleague were associated with occupational expertise, though the effect was rather small with 7% and 5% of the variance explained. The scores on anticipation and optimization were predicted by acting upon feedback colleague (7% of the variance explained) and external information seeking (7% of the variance explained). Finally, personal flexibility was significantly and positively predicted by age (2%), acting upon feedback colleague (5%), and help seeking (4% of the variance explained; see Table 3.2 for an overview). The results largely reject our first hypothesis stating that both social informal

Table 3.1 Means, standard deviations, and correlations

VARIABLE	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Gender	1.41	0.49											
2. Age	35.88	11.27	.17*										
3. Tenure	0.24	0.42	.16*	.38**									
4. Formal learning	61.01	56.84	.03	-.14*	-.03								
5. Acting upon feedback supervisor	4.00	0.91	-.05	-.39**	-.20**	.12	(.80)						
6. Acting upon feedback colleague	3.97	0.65	-.08	-.07	-.01	.04	.49**	(.71)					
7. External information seeking	3.46	0.83	-.02	-.23**	.10	.28**	.16*	.17*	(.67)				
8. Help seeking	3.40	0.67	-.04	-.10	.03	-.02	.36**	.19**	.04	(.62)			
9. Occupational expertise	4.64	0.57	.14*	.35**	.25**	-.00	-.11	.17*	.06	.05	(.91)		
10. Anticipation and optimization	4.25	0.69	.03	-.10	.08	.15*	.20**	.33**	.35**	.14*	.29**	(.85)	
11. Personal flexibility	4.30	0.52	-.00	.15*	.02	.02	-.00	.21**	.06	.16*	.54**	.47**	(.77)

Note. N= 209. Numbers in parentheses are Cronbach's alpha
*p < 0.05, **p < 0.01

learning and formal learning activities are positively related to occupational expertise, anticipation and optimization and personal flexibility. Overall, it was found that formal learning was not significantly related to the three components of employability and did not significantly explain any of the variance between faculty staff members. In contrast, in relation to social informal learning, acting upon feedback from colleagues related significantly positively to all three dimensions of employability. These results suggest that especially social informal learning activities are significantly related to employability and not both formal and social informal learning, which confirms our second hypothesis. No significant effect was found for acting upon feedback supervisor.

Table 3.2 Multivariate GLM with social informal learning, formal learning and control variables as independents and employability as dependent variables

INDEPENDENT VARIABLE	B*	Sig	PARTIAL ETA²
Occupational expertise (ΔR^2 =0.176)			
Gender	0.116	0.128	0.012
Age	0.015	0.000	0.071
Tenure	0.110	0.251	0.007
Formal learning	0.000	0.743	0.001
Acting upon feedback supervisor	-0.087	0.108	0.013
Acting upon feedback colleagues	0.206	0.002	0.047
External information seeking	0.069	0.153	0.010
Help seeking	0.080	0.172	0.009
Anticipation and optimization (ΔR^2 =0.195)			
Gender	0.098	0.280	0.006
Age	-0.003	0.492	0.002
Tenure	0.108	0.347	0.004
Formal learning	0.001	0.357	0.004
Acting upon feedback supervisor	-0.019	0.769	0.000
Acting upon feedback colleagues	0.308	0.000	0.071
External information seeking	0.230	0.000	0.074
Help seeking	0.081	0.246	0.007
Personal flexibility (ΔR^2 =0.084)			
Gender	0.004	0.955	0.000
Age	0.009	0.025	0.025
Tenure	-0.108	0.242	0.007
Formal learning	0.000	0.541	0.002
Acting upon feedback supervisor	-0.095	0.068	0.017
Acting upon feedback colleagues	0.203	0.002	0.048
External information seeking	0.052	0.266	0.006
Help seeking	0.156	0.006	0.037

Note. N= 209. *Unstandardized regression coefficients are reported

3.9 DISCUSSION

Employability of faculty staff is becoming more and more important given the fast-evolving knowledge and innovations they are continuously dealing with. Literature suggests that faculty staff can best work on their continuous employability by lifelong (in)formal learning. Prior research on informal learning mostly focused on individual informal learning and the use of non-personal resources such as books and the internet (Conlon, 2004; Richter et al., 2011). Therefore, the aim of the present study was to investigate the role of social informal learning activities and formal learning activities of faculty staff in higher education on their employability. Our main assumption was that social informal learning activities, defined as acting upon feedback from supervisor, acting upon feedback from colleagues, external information seeking, and help seeking, were significantly related to employability, that is, occupational expertise, anticipation and optimization and personal flexibility.

The results contribute evidence that in contrast to formal learning, social informal learning relates to employability (Richter et al., 2011; Van der Heijden et al., 2009). More specifically, acting upon feedback from colleagues and external information seeking help faculty staff to anticipate future changes and act upon them. In addition, seeking help from others helps faculty staff members to be flexible in their daily work and to react to different situations as needed. In that sense, our results underline the importance of social, proactive learning activities. In sum, these findings lead to the overall conclusion that employability is foremost supported by social informal learning activities. The faculty staff members high in acting upon feedback, external information seeking and help seeking have the proactive behaviour that is necessary to be employable. Professional development might benefit from the establishment of an informal learning culture where faculty staff is invited to proactively act upon feedback and seek help and information. These findings are in line with previous research (Richter et al., 2011; Van der Heijden et al., 2009; Vescio et al., 2008) showing that the uptake of social informal learning opportunities extends professional development. We did not find any support for the relationship between formal learning activities and employability. While the variation of formal learning hours among participants was high, it had no effect on their employability. This finding extends previous research stating that most learning occurs not in a formal setting but in a more natural, informal workplace setting (Tannenbaum et al., 2010).

Although not a central variable in this study, it is noteworthy that age was significantly positively related to two dimensions of employability, that is, occupational expertise and personal flexibility. Possibly, older faculty staff members possess expertise in their job and have dealt with different situations during their working life providing them with knowledge and information. In addition, this may be because older faculty staff members that are likely to have more work experience are more likely to see the potential of learning through interaction with others, or they serve as experts that rather give information and feedback to others. This result is in contrast with previous studies that consider age as a negative predictor of learning associated with a learning loss (Maurer & Weiss, 2010; Nauta et al., 2009) and found that older teachers preferred individual learning activities such as reading compared to younger teachers (Richter et al., 2011).

3.10 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Future research on the relation between social informal learning and employability should address some limitations of the study presented here. First, our study was primarily based on faculty staff working at a relative young medium-sized Dutch university. Taking into account that universities differ in terms of the extent to which they engage in innovation (see, for example, the Quacquarelli Symonds (QS) rankings of universities with respect to level of engagement in innovation) as well as in organizational culture and more specific learning climate aspects (Altbach & Knight, 2007; Folch & Ion, 2009; Zhu & Engels, 2014), cross-validation of our results in other universities is necessary. Second, this is a cross-sectional study and levels of education show significant differences in terms of engaging in innovations and building of professional communities (Little, 2002; Vescio et al., 2008). Therefore, our results cannot be generalized to other groups that were not represented in the sample, for example, teachers in secondary education and cross-validation to other levels of education is necessary. Moreover, these cross-validation studies offer the opportunity to measure the effect of differences in organizational structure as well as level of innovation on social informal learning behaviours and employability. Third, we only reached a response rate of 10% that might have biased the results. This low response rate might be a result of the online administration via a central office of the university. Communicating to faculty staff via a central office is the most time-efficient way; however, given the distance between the office and the staff, it is not always the most effective in terms of response rate. Faculty staff most often inherit several roles in teaching, research, and administration, that can influence the little time they have to spend on learning from others in the professional learning communities. In addition, it might be that only those faculty staff interested in learning responded to the survey. However, preliminary analysis showed that our sample data set was normally distributed. Future research could focus on obtaining the department chairs' support as they are in direct contact with faculty staff. Fourth, we used participant's perceptions to measure employability and social informal learning behaviours, also known as common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Podsakoff, MacKenzie, & Podsakoff, 2012). However, with respect to measuring learning behaviour that takes place in informal settings, participants are the first to be able to indicate to what extent they demonstrate this behaviour. The same counts for employability competences: except for those supervisors who monitor closely the daily work of their faculty staff, only faculty staff members have sufficient information to rate themselves. For future research, we suggest to ask respondents to provide concrete examples of learning behaviours to rule out the halo effect, at least to a certain extent (Van der Heijde & Van der Heijden, 2006). In this study we focused on social informal learning activities of faculty staff. However, we did not look into the role that individual informal learning might play (e.g. reading books or websites). Former research found out that older teachers tend to seek information from books and professional literature (Richter et al., 2011) and might be less interested in social informal learning. Future research could take into account both forms of informal learning and study their independent as well as combined effect on output measures such as employability and performance. In addition, future research would benefit from the further conceptual development of the terms social and individual informal learning. Once the term is conceptually further unraveled, questionnaires and interview guides could be further developed to grasp social and informal learning in the workplace.

3.11   PRACTICAL IMPLICATIONS FOR FACULTY STAFF

Jobs have become more complex and challenging and institutes for higher education cannot rely on formal learning experiences only to support the professional development of their faculty staff since transfer to the workplace is often limited and these training programs can often not keep up with the high-speed developments in practice. This study demonstrates that formal learning activities are insufficient for staying employable in higher education. In this respect, it is important to recognize the role of social informal learning activities as an integrated part of daily work that facilitates employability. Attention should therefore be paid to the integration and support of social informal learning in the workplace, or to stimulating acting upon feedback and seeking information and help in order to promote updated knowledge and skills. For example, this can be reached by stimulating a different form of collegial collaboration among faculty staff. Professional learning communities are an interesting medium for enhancing social informal learning. Given the advances in technology, online platforms such as Learning Management Systems offer ample opportunities to support faculty staff in connecting to each other as sources of information and help. Stimulating faculty staff to be each other's mentor can facilitate acting upon feedback from colleagues. Moreover, by collaborating in instructional activities, they have the opportunity not only to observe how colleagues approach instruction but also to ask and give feedback. The present study also emphasizes that faculty staff must be empowered in taking an active role in their professional development. A sustainable work-learning environment invites or requires taking initiative and responsibility not only in daily work but also in professional development. HRM policies in schools or universities play a vital role here, and also in how work is organized (e.g. do faculty staff cooperate in project teams? Are these project teams self-steering?). Given the power of social informal learning for enhancing employability of faculty staff, in addition to organizing formal training activities, HR policies in schools and universities might focus on how to facilitate and support professional development of faculty staff through social informal learning in order to increase their employability within and outside the organization.

3.12   REFERENCES

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APPENDIX: ITEMS AND CONFIRMATORY FACTOR ANALYSIS

INFORMAL LEARNING FROM OTHERS		
Scale	**Items**	**Item content**
Acting upon Feedback Supervisor	3	Feedback from my supervisor makes me reflect. Feedback from my supervisor motivates me to act. The feedback I receive from my supervisor is helpful.
Acting upon Feedback Colleague	3	Feedback from colleagues makes me reflect. Feedback from colleagues motivates me to act. The feedback I receive from my colleagues is helpful.
Information seeking	2	I attend lectures of guest speakers. I meet employees from other organizations by participating in conferences, workshops, and lectures.
Help seeking	2	If I were having trouble understanding something at work I would ask someone who could help me understand the general ideas. Getting help would be one of the first things I would do if I were having trouble at work.

APPENDIX: ITEMS AND CONFIRMATORY FACTOR ANALYSIS (CONTINUED)

CONFIRMATORY FACTOR ANALYSIS
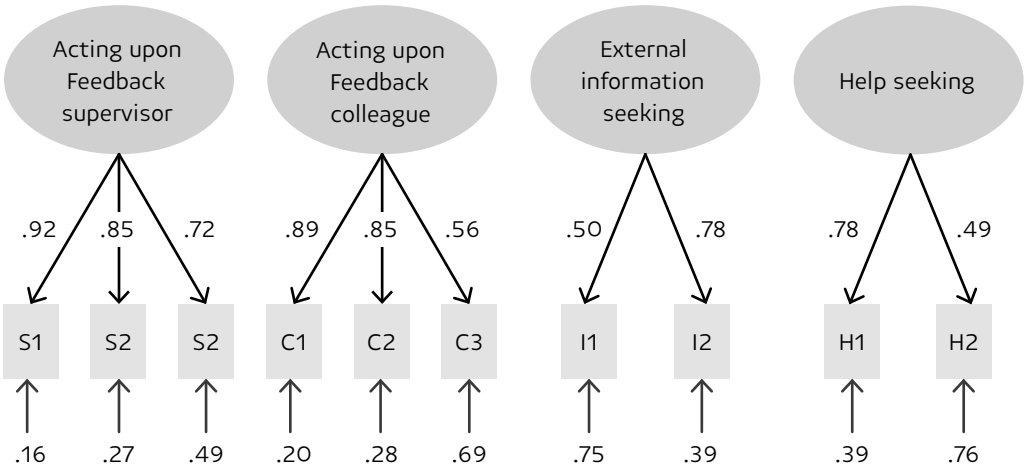
Note: *Standardized estimates and errors are presented; CFI = 0.90, RMSEA = 0.13, SRMR = 0.05*

Chapter 4

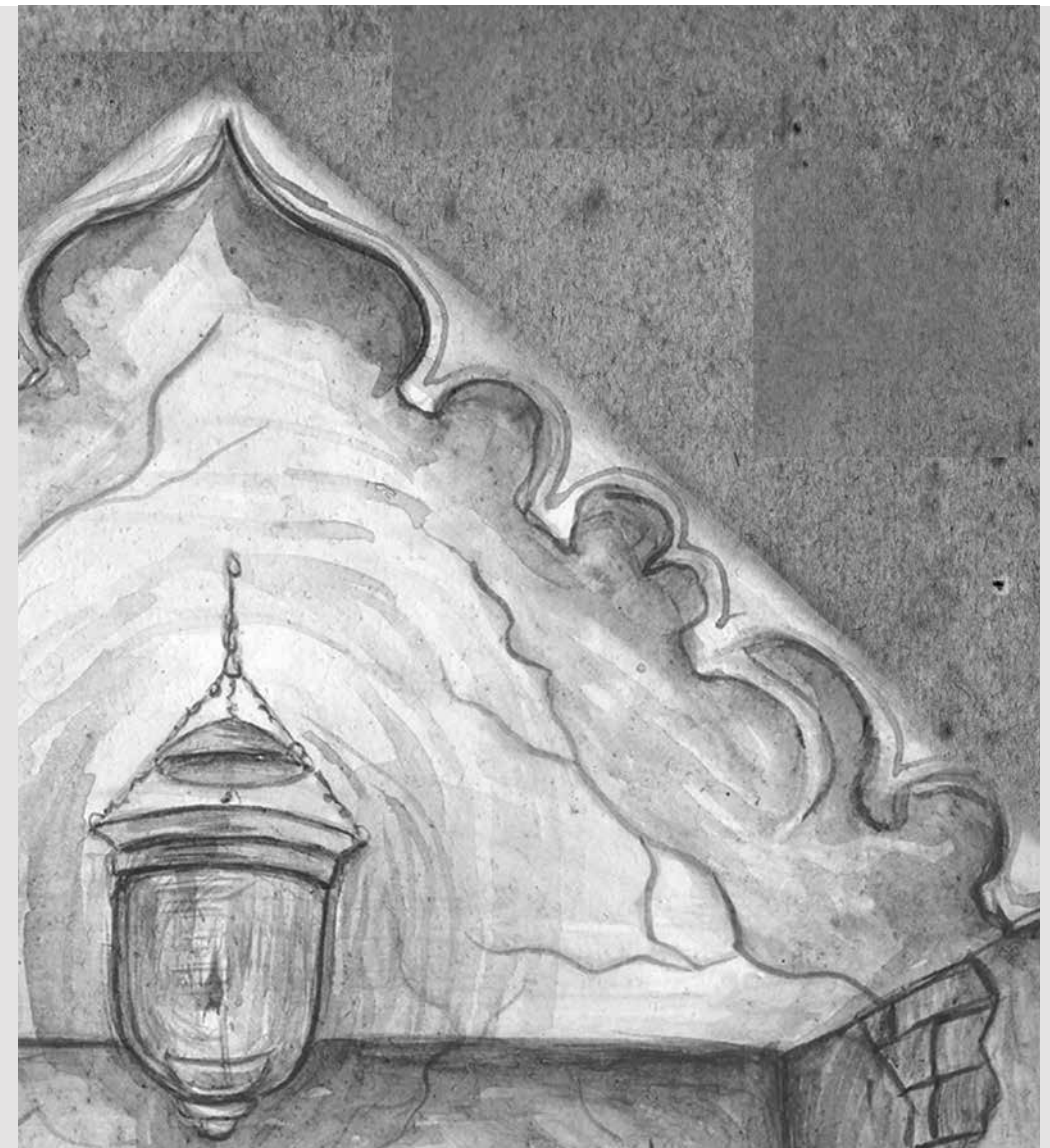### Informal learning from others at work as facilitator of employees' innovative work behavior

ABSTRACT

Today, employees are expected to be innovative and to come up with new ideas and strategies about products and processes. Limited research has been conducted that explores which specific social informal learning behaviors contribute to employees' innovative work behavior. This study aims to increase our understanding of informal learning from others by researching how acting upon feedback, help seeking, and information seeking relate to employees' innovative work behavior in organizations. Analyses of data collected in different organizations are used to illustrate the social side of informal learning and its relationship with innovative work behavior. Understanding employees' engagement in informal learning from others in organizations and the relationship of these behaviors with innovative work behavior is crucial because the results will indicate how to organize learning opportunities for employees in order to further develop their innovative work behavior.

4.1 INTRODUCTION

Increased competition requires organizations to keep developing new ideas, products, procedures, in short: to innovate (Damanpour & Schneider, 2006; Govaerts, Kyndt, Dochy, & Baert, 2011; Scott & Bruce, 1994). Innovation is described as "all intentional results of action (products or processes) that bring about perceived change within the organization" (Krause, 2004, p.79). These innovation processes are carried out by employees in the organization (Kanter, 1988; West & Wallace, 1991). More specifically, the development of innovation is determined by a set of tasks including the exploration of opportunities to generate ideas, and promoting and realizing these ideas in the organization (Janssen, 2000, 2003; Kanter, 1988; Messmann & Mulder, 2012; Scott & Bruce, 1994). Employees' fulfilment of the tasks is referred to as innovative work behavior (Messmann & Mulder, 2012). It includes all work activities that lead to the development of innovations. Although organizations might stimulate employees to engage in innovative work behavior, evidence on its determinants is required. The purpose of this study is to better understand the factors that make employees engage in innovative work behavior in the workplace.

Literature suggests that in order to stimulate employees to engage in innovative work behavior, they need to learn at work (Amabile, 1998; Carmeli & Spreitzer, 2009). Employees that develop new competencies and capabilities through work are more likely to see the possibilities for new ways of doing and trying things. Professional development is not only a result of participating in formal training programs. A review by (Tynjälä, 2008) indicates that people learn at work not only through formal education but by doing the job itself, through informal learning. Informal learning at work includes different informal learning behaviors such as interaction with colleagues, reflection, reading professional literature, and collaboration (Froehlich, Beausaert, Segers, & Gerken, 2014; Haider & Kreps, 2004; Lohman, 2006) that take place during daily work (Marsick, Volpe, & Watkins, 1999; Tannenbaum, Beard, McNall, & Salas, 2010). Informal learning is defined as learning that occurs as a by-product of other behaviors and at the employee's own initiative (Eraut, 2004; Marsick et al., 1999; Watkins & Marsick, 1992). A distinction is made between individual informal learning behaviors and informal learning in social interaction (Kyndt & Baert, 2013; Mulder, 2013). In this respect, Noe, Tews, and Marand (2013) refer to learning from oneself and learning from non-interpersonal sources as individual informal learning and learning from others as informal learning in social interaction. Learning from oneself refers to reflection and experimenting with new ways of thinking and acting. Learning from non-interpersonal sources implies learning behaviors such as looking up information in books or online. Learning from others involves interaction with peers, supervisors and relevant others in the learner's network by information, help or feedback seeking behaviors. Although many authors refer to these different types of informal learning and the related informal learning behaviors, previous research measured informal learning in a rather vague way including a range of behaviors and did not clearly distinct between specific informal learning behaviors (Kwakman, 2003; Lohman, 2003). For example, a clear distinction between cognitive informal learning behaviors, learning from oneself and learning from others (e.g. feedback exchange with colleagues) was not always made. Moreover, to date, research hardly offers insights in which specific informal learning behaviors contribute to employees' engagement in innovative work behavior. The aim of this

study is to investigate the extent to which informal learning behaviors can foster employees' innovative work behavior. In the following we first discuss innovative work behavior. Second, we examine the role of informal learning for engaging in innovative work behavior. Afterwards, we present the results of a study in which the relationships between different types of informal learning and innovative work behavior were examined. We conclude with practical implications and suggestions for future research.

4.2 THEORETICAL FRAMEWORK

4.2.1 INNOVATION

Innovation is a source for competitive advantage. In this respect, companies look for ways to encourage employee-driven innovation. Innovation has been studied in several disciplines and refers to all initiatives concerning the creation and application of useful ideas (Damanpour & Schneider, 2006; Kanter, 1988; Ramamoorthy, Flood, Slattery, & Sardessai, 2005; Scott & Bruce, 1994; West & Farr, 1989) with the intention to benefit the organization (Damanpour & Schneider, 2008; West & Farr, 1989). Yet, new ideas are not only developed in one specific unit of the organization but are often generated at the work floor when dealing with or anticipating problems. In this respect, researchers in the domain of innovation have been addressing the concept of innovative work behavior of employees (De Jong & Den Hartog, 2010; Janssen, 2003; Messmann & Mulder, 2012).

4.2.2 THE CONCEPT OF INNOVATIVE WORK BEHAVIOR

Innovative work behavior is defined as "the sum of all physical and cognitive work activities employees carry out in their work context, either individually or in social interaction, in order to accomplish a set of interdependent innovation tasks required for the development of an innovation" (Messmann & Mulder, 2012, p.45). Four dimensions of innovative work behavior can be distinguished (Messmann & Mulder, 2012): Opportunity exploration refers to the recognition of opportunities for change and improvement. Idea generation refers to the creation of new ideas, generating solutions for problems but also searching out new working methods or instruments. Idea promotion means to mobilize support and to acquire approval for innovative ideas and to make important organizational members enthusiastic for innovative ideas. Idea realization is defined as transforming innovative ideas into useful applications, introducing innovative ideas into the work environment in a systematic way and evaluating the utility of innovative ideas (Janssen, 2000; Kanter, 1988; Messmann & Mulder, 2010; West & Farr, 1989). These tasks are partly dependent but do not necessarily follow each other (Dorenbosch, Engen, & Verhagen, 2005; Messmann & Mulder, 2013). For instance, when promoting ideas employees might see new opportunities or generate different ideas.

4.2.3 INFORMAL LEARNING IN THE WORKPLACE

Informal learning behaviors are defined as "cognitive and physical learning activities (that lead to cognitive activities) that can be deliberate or reactive, and that lead to competences but not to formal qualifications" (Mulder, 2013, p.52). In line with this, Noe et al. (2013, p. 3) define informal learning "as learner initiated that involves action and reflection". Both definitions imply that informal learning is learner-initiated and provides opportunities for learner interaction in the workplace. In this respect, Noe et al. (2013) propose to differentiate between learning from oneself and learning from others. Learning from oneself refers to reflection on the effectiveness and efficiency of one's ideas. Informal learning from others entails talks and discussions between employees (Meirink, Meijer, & Verloop, 2007). Employees exchange ideas and information as well as seek feedback and help (Froehlich et al., 2014).

The specific dimensions of innovative work behavior represent interdependent innovation tasks that take place simultaneously and repeatedly (Dorenbosch et al., 2005; Messmann & Mulder, 2012). Consequently, behaviors that link these different innovation tasks and the corresponding work activities employees carry out in the innovation process are crucial. Such linking behaviors can be informal learning behaviors such as collaborating with colleagues or asking questions (Cunningham & Iles, 2002). In the following we will elaborate on informal learning from others.

4.2.4 INFORMAL LEARNING FROM OTHERS

Informal learning from others is the proactive seeking for relevant others in the workplace to share information and expertise. It has been argued to play a role for innovative behavior (Haider & Kreps, 2004; Scott & Bruce, 1994) and has gained a lot of interest recently (Conlon, 2004; Eraut, 2004; Grant & Ashford, 2008; Tynjälä, 2008). Employees commonly learn in a social context by working together with colleagues, participating during group activities and consulting each other (Eraut, 2004, 2007). In this sense, informal learning from others has been operationalized in different concrete learning behaviors in the workplace (Kyndt, Dochy, & Nijs, 2009).

A first proactive learning activity is acting upon feedback. Feedback is described by several authors as a core informal learning activity (Marsick et al., 1999; Noe et al., 2013). Employees seek and act upon feedback in order to identify the adequacy of one's behavior to secure certain goals. It has an evaluative character and might evoke negative emotions that in turn impede dealing with or acting upon the feedback. If the feedback seeker does not act upon the feedback, no learning will happen. Therefore, acting upon feedback is a crucial phase in the feedback seeking process. In this respect, research has showed that it is especially the extent to which an employee is acting upon feedback that contributes to employee's performance at work (Anseel, Lievens, & Levy, 2007; Gupta, 1999; Salas & Rosen, 2010; Shute, 2008).

A second informal learning activity is help seeking. Based on a review of studies on informal learning, Marsick and Watkins (2001) state that informal learning is a result of "everyday encounters while working and living in a given context. A new life experience may offer a challenge, a problem to be resolved… " (p. 29). In order to deal with challenges and problems, employees often engage in help seeking behavior. Help seeking behavior involves proactively consulting others on task-related issues or asking for assistance at work; more than feedback and information seeking, it is problem-focused (Karabenick & Knapp, 1988; Lee, 1997; Van der Rijt, Van den Bossche, Van de Wiel, et al., 2013; Veenman, 2005). Research on help seeking behavior emphasizes that employees gather missing information, assess different alternatives to solve problems, expand resources or receive social support (Lee, 1997; Ryan & Pintrich, 1997; Van der Rijt, Van den Bossche, Van de Wiel, et al., 2013). It is seen as a key component to achieve success (Hofmann, Lei, & Grant, 2009; Van der Rijt, Van den Bossche, Van de Wiel, et al., 2013) and employees mainly seek help to solve problems and, in turn, to further develop their expertise (Lee, 1997).

Third, employees engage in informal learning by proactively seeking information (Grant & Ashford, 2008; Morrison, 2002). According to Mills, Knezek, and Khaddage (2014) information seeking is a major component of facilitating the shift in formal to informal learning. This informal learning activity is more neutral and refers to proactive searching for information or knowledge from others (Borgatti & Cross, 2003; Cross & Sproull, 2004). The main goal is to gain specific resources (Ashford & Cummings, 1983; Eraut, 2004; Froehlich et al., 2014; Karabenick, 2004; Lee, 1997). Information seeking allows employees to understand factors in an organization that lead to higher performance (Borgatti & Cross, 2003; Morrison, 2002).

There is some evidence that learning from others has an influence on employees' innovative work behavior (Carmeli & Spreitzer, 2009; Scott & Bruce, 1994). In an early study, Scott and Bruce (1994) looked at the supervisor–employee relationship for stimulating innovative work behavior. Employees that perceived the quality of the relationship with the supervisor as trustful and supportive and thus sought help, reported to engage more in innovative work behavior. In addition, good relationships among employees in the work group also positively affected innovative work behavior. In a cross-sectional study among 172 employees from different organizations, Carmeli and Spreitzer (2009) found that trust and connectivity between colleagues were important factors relating to innovative work behavior. High quality connectivity means that colleagues are open to new ideas and proactively seek each other to discuss opportunities and ideas (Carmeli & Spreitzer, 2009). Therefore, we expect that learning from others will stimulate innovative work behavior. The present study focuses on employees' informal learning behaviors, i.e. acting upon feedback, help seeking and information seeking, and how these behaviors relate to innovative work behavior. The following hypotheses are formulated:

Hypothesis 1: *Acting upon feedback will have a significant positive effect on employees' innovative work behavior.*

Hypothesis 2: *Employees' information seeking behavior will have a significant positive effect on their innovative work behavior.*

Hypothesis 3: *Employees' help seeking behavior will have a significant positive effect on their innovative work behavior.*

To address the research question and the corresponding hypotheses, a study was conducted in which effects of learning from others on innovative work behavior was investigated. Employees working in different sectors in the Netherlands represent the research setting for these studies. Employees deal with all kinds of innovations and therefore represent a natural setting for testing our hypotheses.

4.3 METHOD

4.3.1 SAMPLE AND DATA COLLECTION

In April 2014 an online questionnaire was distributed in a postgraduate program, linked to a Business School in the South of the Netherlands as well as in the network of the postgraduate school. The employees enrolled in the postgraduate school were working fulltime. These employees and persons in the broader network of the school (i.e. other employees working in organizations) were invited to participate anonymously via the website and the monthly electronic newsletter.

The school and the broader network of the postgraduate school contain many employees working in different sectors: energy, IT, banking, consulting and health. After a period of four weeks, 493 employees filled in the questionnaire of which 243 answered the complete questionnaire. A strict data cleaning procedure was conducted to delete respondents who filled out the questionnaire multiple times (i.e. based on IP address and the combination of background characteristics) and persons with suspicious answer patterns (e.g. no variance in their responses). The final sample consisted of N = 215 employees.

The mean age of the sample was 42.7 (SD = 11.78). Regarding gender, 45 percent of the respondents were female. On average, 48 percent of the respondents worked between 1 and 3 years in their current function. With regard to the number of job functions employees worked in so far, 68 percent had between 1 and 6 job functions. The majority (72 percent) had worked for 2 to 6 different organizations in the past including their current organization.

4.3.2 MEASURES

Innovative work behavior. Employees' engagement in innovative work behavior was measured with a self-report questionnaire adapted from Messmann and Mulder (2012). The questionnaire consisted of the shortened version of 17 items and four dimensions tapping employees' engagement in opportunity exploration (4 items, sample item: "Keeping oneself informed about the latest developments within the company"), idea generation (4 items, sample item: "Addressing the things that have to change directly"), idea promotion (6 items, sample item: "Promoting new ideas to colleagues in order to gain their active support"), and idea realization (3 items, sample item: "Introducing colleagues to the application of a developed solution"). The items were rated on a 6-point Likert scale. Respondents were instructed to state how adequately each item described their actual behavior in the workplace.

Informal learning from others: Seeking for information and help and acting upon feedback. We measured these informal learning behaviors with a previously validated composite scale of employees' seeking for information and help, and acting upon feedback (Froehlich et al., 2014; Gerken, Beausaert, & Segers, 2015). The scale consists of 10 items measured on a 5-point Likert scale. A confirmatory factor analyses was performed among 895 employees in different sectors in the original validation study. The results showed four informal learning behaviors: information seeking (2 items, sample item: "I meet employees from other organizations by participating in conferences, workshops, and lectures"), acting upon feedback from the supervisor (3 items, sample item: "The feedback I receive from my supervisor motivates me to reflect"), acting upon feedback from colleagues (3 items, sample item: "Feedback from colleagues makes me act"), and help seeking (2 items, sample item: "Getting help would be one of the first things I would do if I were having trouble at work"). We confirmed this factor structure also in our sample: Comparative Fit Index (CFI) = .98, Root Mean Square Error of Approximation (RMSEA) =.05, and Standardized Root Mean Square Residual (SRMR) =.03 (Hu & Bentler, 1999). However, due to the low reliability of the help seeking scale (α = .55), we removed the help seeking items from further analyses. The remaining three scales show acceptable reliabilities (α = .79 - .89).

4.4 DATA ANALYSIS

A first exploration of the relationship between learning from others and innovative work behavior, was done through correlational analysis and multiple hierarchical regression analyses with opportunity exploration, idea generation, idea promotion, and idea realization as dependents. For the hierarchical regression analyses, background characteristics were entered in step 1, and learning from others in step 2. To complement the analysis and to investigate the three hypotheses, path analysis was applied with robust generalized least squares procedures based on the significant direct effects that emerged from the hierarchical regression analyses (Knight, 2000). When applicable, modification indices were inspected to apply changes (Wald and Lagrange

Multiplier tests). The path analysis was conducted in EQS version 6.2 (Bentler and Wu, 2002; Bentler, 2005).

4.5 RESULTS

The descriptive statistics in Table 4.1 provide an overview of all variables. The data show that the scales for all variables have acceptable internal consistencies. The mean score of acting upon feedback from colleagues was the highest among the scales (M = 4.23, SD = .67) and information seeking had the lowest score (M = 3.33, SD = 1.13). Concerning innovative work behavior, the mean of opportunity exploration was slightly higher than the scores of the three other dimensions (M = 4.78, SD = .83). The correlational analysis showed that all three informal learning behaviors were significantly positively related to all four dimensions of innovative work behavior.

Table 4.1 Descriptive statistics and correlations for learning from others and innovative work behavior

	M	SD	1.	2.	3.	4.	5.	6.	7.
1. Information seeking	3.33	1.13	(.79)						
2. Acting upon Feedback supervisor	4.08	.82	.20**	(.89)					
3. Acting upon Feedback colleague	4.23	.67	.30**	.61**	(.87)				
4. Opportunity exploration	4.78	.83	.32**	.31**	.36**	(.77)			
5. Idea generation	4.72	.82	.24**	.21**	.35**	.45**	(.80)		
6. Idea promotion	4.73	.86	.23**	.28**	.33**	.47**	.70**	(.88)	
7.Idea realization	4.34	1.10	.13*	.18**	.25**	.44**	.51**	.64**	(.85)

Note. N = 215. Values for Cronbach's α are presented in parentheses in the diagonal of the correlation matrix
*p < 0.05, **p < 0.01.

Next, multiple hierarchical regression analyses were conducted to investigate relationships that served as an input for the following path analysis. The results are depicted in Table 4.2. Both information seeking and acting upon feedback colleagues had a significant effect on opportunity exploration, idea generation and idea promotion. The effect of acting upon feedback from supervisor was not significant. Therefore, acting upon feedback supervisor was not integrated in the follow-up path analysis. The number of jobs was positively related to opportunity exploration and idea realization. In addition, the number of organizations was negatively related to idea generation and idea realization.

Table 4.2 Multiple hierarchical regression analysis

INDEPENDENT VARIABLES	DEPENDENT VARIABLES			
	Opportunity exploration	*Idea generation*	*Idea promotion*	*Idea realization*
Step 1				
Gender	.08	-.01	-.01	-.11
Age	.08	.16	.02	-.01
Number of jobs	.19*	.16	.15	.26**
Number of organizations worked for	-.14	-.24**	-.17	-.29**
Years in current function	.06	-.07	-.12	.05
Step 2				
Information seeking	.24**	.16*	.14*	.07
Acting upon feedback supervisor	.15	.00	.13	.05
Acting upon feedback colleagues	.18*	.28**	.19*	.16
Step 1ΔR²	0.02	.02	.01	.05
Step 2 ΔR²	.18	.13	.12	.09
R²	.21	.16	.15	.13

Note. N= 215. Standardized regression coefficients (Beta) are reported

*p < 0.05 , **p < 0.01

A path analysis was conducted in order to investigate the three hypotheses. Based on the re-sults of the hierarchical regression analyses, we could identify the relationships between two independent variables (information seeking, acting upon feedback colleague), two background variables (number of job functions, number of organizations) and the four tasks of innovative work behavior. Non-significant parameters were removed and modifications were implemented in two areas as suggested by the Wald test: the relations between the number of jobs and op-portunity exploration and the relation between the number of organizations and idea generation were dropped. The correlations between the independent variables ranged from -0.02 and 0.62. The relationships are presented in Figure 4.1.

Information seeking, and acting upon feedback from colleagues positively affected opportunity exploration. Acting upon feedback from colleagues and information seeking also affected idea generation and idea promotion. The results suggest that learning from others is especially im-portant for the act of exploring and generating ideas. There was no effect on idea realization. The results show that all two behaviors are related to innovative work behavior. Thus, the re-sults confirm hypotheses 1 and 2. No evidence could be obtained for hypothesis 3 since the help seeking scale was removed from further analysis due to low reliability.
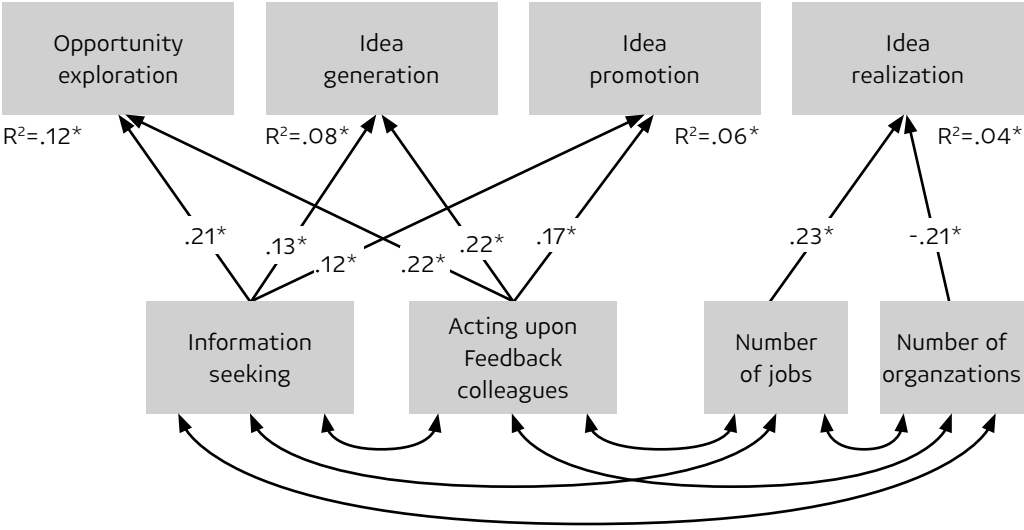

Figure 4.1 Standardized estimates effects of learning from others and background characteristics on innovative work behavior. Only significant paths are displayed.

Note. *p < .05, **p < .01. N = 215.

Looking at the background characteristics, we found that the number of jobs an employee had during work life was significantly positively related to idea realization indicating that the more functions an employee held, the more they indicate to transform ideas into useful applications. Interestingly, the number of organizations an employee worked for was significantly negatively related to idea realization. This means that employees that worked for more organizations find it difficult to realize idea and put them into practice in the organization.

4.6 DISCUSSION

The aim of this study was to investigate how acting upon feedback supervisor, acting upon feedback colleague, information seeking, help seeking can support employees' engagement in innovative work behavior. We hypothesized a direct relation between these behaviors and all dimensions of innovative work behavior. However, the role of help seeking could not be tested due to low internal consistency of the measurement scale.

The results of the study show that two learning from others-components, that is, acting upon feedback from colleagues and information seeking are significantly related to opportunity ex-ploration, the first dimension of innovative work behavior. The results underline the import-ance of proactively seeking information and using the feedback of colleagues to recognize and explore opportunities for change and improvement. Acting upon feedback from colleagues and information seeking also relates to idea generation showing that the quality of feedback is im-

portant to substantiate an idea. Next, acting upon feedback from supervisors was not related to innovative work behavior. Employees turn to their colleagues and use their feedback as well as seek information in order to promote their idea. Colleagues might be perceived as a credible source for feedback and are approached more easily than for example supervisors (Van der Rijt, Van den Bossche, & Segers, 2013). The lack of relationship could also be explained by the fact that supervisors do not stimulate innovative work behavior. In this respect, previous research recognized the influence of the learning climate on informal learning (Marsick, Volpe, & Watkins, 1999). Therefore, future research could investigate if the learning climate plays a role for informal learning from others and in turn innovative work behavior. Prior research on innovative work behavior has focused on the importance of connectivity among colleagues in a more general way (Carmeli & Spreitzer, 2009). Literature also suggests that contact and interaction with external others brings new perspectives to one's mindset (Kanter, 1988) and in turn increases innovative work behavior (De Jong & Den Hartog, 2010). Furthermore, the study reveals that learning from others does not affect idea realization, the fourth dimension of innovative work behavior.

In addition, the number of job functions is positively related to idea realization. It seems that employees who worked in different job functions are more likely to know the structures in an organization necessary to transform innovative ideas into useful applications and evaluating the usefulness of that idea. A certain level of experience in different job functions might help to transform ideas into useful applications. Interestingly, the number of organizations an employee worked for is negative related to idea realization. In other words, employees who have worked in many different organizations are less likely to realize ideas and put them into practice in the organization. This might be because employees who change organizations are unfamiliar with the procedures, do not have an elaborated network in the organization and lack the necessary knowledge to realize ideas within existing structures. This opposes prior research stating that experiences from working in different organizations increases innovative outcomes (Taylor & Greve, 2006).

4.7 LIMITATIONS AND FUTURE RESEARCH

The findings are subject to a number of limitations that should be addressed in future research. First, the results of the studies are limited to work contexts that are similar to the works context of this study characterized by rapidly changing work environments and the need to continuously improve their products or services to secure long-term success and survival. Innovative work behavior is a context-bound construct meaning that innovative tasks are integrated in the work context in which they are carried out (cf. Messmann & Mulder, 2012). Cross-validation studies offer the opportunity to further examine innovative work behavior. Second, the help seeking scale was removed from the analysis due to low reliability. Nevertheless, future studies should measure help seeking as previous studies have found acceptable reliability coefficients (Froehlich et al., 2014; Gerken et al., 2015; Karabenick, 2003). Third, self-report measures were used to assess informal learning, and innovative work behavior. This provides the advantage that

employees indicate most properly to what extent they were engaged in this behavior. However, using different data sources would be beneficial to prevent common method bias (Conway & Lance, 2010). In this respect, if in a given work context supervisors are closely monitoring the daily work of their subordinates they should be considered as an additional data source. A more objective measure of innovative work behavior could be attained through taking the number of innovations per employee into account. Last, future research would also benefit from further develop and disentangle the concept of informal learning during daily work activities and innovation processes.

4.8 PRACTICAL IMPLICATIONS

Organizations can use the research results to pay attention to learning from others both during daily work and in conjunction with ongoing innovation processes to enhance employees' engagement in innovative work behavior. For instance, it is important to realize that acting upon feedback of colleagues, and information seeking contribute to opportunity exploration. A work environment that stimulate employees to easily connect, to discuss opportunities for innovation and explore ideas, makes employees valuable by seeking opportunities to work with others and tapping into the expertise those colleagues possess to help carry out innovative tasks. Supervisors could stimulate this development by acting as broker in the beginning of the innovation process. Colleagues should also be aware of their feedback to employees during the innovation process. Likewise, organizations should illustrate how employees can use informal learning as a powerful tool to smoothen the accomplishment of work tasks during innovation processes. For instance, supervisors may encourage employees to examine their performance and underlying assumptions during and after work tasks. This could be done by supporting their ideas through feedback but also by providing on-demand support for their questions. The results of these studies highlight the vital role of learning from others to enhance innovative work behavior.

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Chapter 5

Profiles of employees' engagement in proactive learning from others and its relation with their career trajectory*

ABSTRACT

This study reports on employees' engagement in proactive learning from others, more specifically on three behaviors: feedback seeking, information seeking and help seeking. Insufficient empirical attention has been devoted to determining if employees prefer certain behaviors over others. Furthermore, this study also reports on the influence of work experience and job mobility on employee's engagement in learning from others. Based on latent profile analysis, the results revealed three profiles of learning from others and demonstrate that employees who stay longer in a job seem to have a preference for acting upon feedback from their colleagues in their job function and the involved tasks. Implications for research and practice are discussed.

5.1 INTRODUCTION

In the past years, the nature and idea of career development has been changed considerably. Boundaryless careers emerged that forced employees to take responsibility for their own career development (De Vos, De Hauw, & Van der Heijden, 2011; Fugate, Kinicki, & Ashforth, 2004; Tannenbaum, 2001). For example, employees are not bound to a single employer anymore, take on new jobs within or outside organizations, and perform diversified tasks (Rodrigues, Guest, Oliveira, & Alfes, 2015). The management of such careers depends on proactivity – a willingness to anticipate changes and be flexible in order to choose across a variety of options and possible career directions (Crant, 2000; Carbery & Garavan, 2005; Van der Heijden, 2002; Fuller & Marler, 2009).

One way for employees to express proactive behavior is learning from others at work (Ashforth, Sluss, & Saks, 2007; Saks, Gruman, & Cooper-Thomas, 2011). Learning from others consists of different activities characterized by interactions with colleagues and supervisors in the workplace resulting in professional development (Eraut, 2007; Richter, Kunter, Klusmann, Lüdtke, & Baumert, 2011; Van der Heijden, Boon, Van der Klink, & Meijs, 2009). Studies indicated that interaction with others at work forms one of the most significant sources of learning compared to individual learning activities such as searching the internet or reading books (Billet, 2004; Kyndt, Dochy, & Nijs, 2009; Lohman, 2006). Recent research has made important progress in identifying different behaviors that are part of learning from others (Froehlich, Beausaert, Segers, & Gerken, 2014; Gerken, Beausaert, & Segers, 2015; Kyndt et al., 2009). Especially three behaviors have emerged: information seeking (Morrison, 2002), seeking advice and help (Bamberger, 2009; Van der Rijt, Van den Bossche, Van de Wiel, et al., 2013), and seeking feedback from others (Ashford, 1986). The three behaviors can occur concurrently; however, most empirical studies have addressed them separately (Ashford & Cummings, 1983; Bamberger, 2009; Morrison, 2002; Borgatti & Cross, 2003). Yet, current research demonstrated significant but low correlations between the three behaviors (Froehlich, Beausaert, & Segers, 2015; Froehlich et al., 2014; Gerken et al., 2015). Moreover, the study of Froehlich et al. (2014) indicated that employees scored higher and thus had a preference for acting upon feedback and less for information seeking. Hence, employees may be inclined to one or other of these behaviors depending on their career trajectory. In support of this assumption, factors such as job mobility and a higher work experience have been identified to foster learning from others (Eraut, 2004; Miller & Jablin, 1991). For instance, a newcomer in an organization is more likely to seek information and feedback to compensate the initial uncertainty feeling, whereas employees with more work experience face a higher social cost in asking for information and therefore will seek less information (Ashforth et al., 2007; Miller & Jablin, 1991; Saks et al., 2011).

The current study makes a contribution to the literature by addressing the three learning behaviors jointly. This is done by identifying employees' preferences. Until now, there is no prior evidence outlining different profiles of employees' engagement in learning from others. Therefore, research is needed that specifically investigates how the three behaviors are related to each other. Next, this study examines the influence of work experience and job mobility on employees'

preferences. The results can be used to reconsider the design of the work environment or professional development programs and lead to a more refined understanding of how learning from others can be supported in the workplace.

5.2 THEORETICAL FRAMEWORK

5.2.1 LEARNING FROM OTHERS AT WORK: ACTING UPON FEEDBACK, INFORMATION SEEKING, AND HELP SEEKING

Workplace learning is often a collaborative or social process (Boud & Middleton, 2003). For employees, interaction with others such as colleagues and supervisors is the main source of learning (Doornbos, Simons, & Denessen, 2008; Eraut, 2007; Koopmans, Doornbos, & Eekelen, 2006). The question, however, remains which specific behaviors do employees engage in when learning from others. Three activities have attracted considerable attention in the past years and have been identified as crucial: proactive engagement in feedback from others, sharing knowledge and information with others as well as seeking advice (Kyndt et al., 2009; Bamberger, 2009; Ashford, 1986). These activities share similarities as they all emphasize proactive learning from others to obtain specific information. Information seeking relates to the proactive search for information or knowledge (Borgatti & Cross, 2003). Feedback seeking and help seeking can be considered as specific types of information seeking (Bamberger, 2009). Feedback seeking refers to the proactive search for feedback and concerns information about the self (Anseel, Lievens, & Levy, 2007). Therefore, feedback is often more emotional (Ashford, Blatt, & Vande Walle, 2003). Help seeking is focused on problems and involves intentional actions (Cornally & McCarthy, 2011). Only a few prior studies have been measuring the activities jointly. For instance, a study by Froehlich et al. (2014) showed that acting upon feedback, help seeking and information-seeking had different effects on dimensions of employees' employability. Information and help seeking predicted occupational expertise, anticipation and optimization, and personal flexibility. Acting upon feedback affected the dimension anticipation and optimization. Moreover, former studies show low correlations between the three activities (Froehlich et al., 2015; Gerken et al., 2015). Building on these findings, this study focuses on employees' preferences for engaging in information seeking, help seeking and acting upon feedback. In the following these three activities will be explained in more detail.

Acting upon feedback
Ashford (1986) defines feedback seeking as a "conscious devotion of effort toward determining the correctness and adequacy of activities for attaining valued end states" (p.466). More specifically, feedback seeking is a process that involves the search for feedback and using the feedback afterwards. From a learning perspective, using or acting upon the self-solicited feedback, is the most important step in the feedback seeking process. It allows employees to correct their behavior in order to learn from it (Ashford, Blatt, & VandeWalle, 2003).

The motives that induce people to engage in feedback seeking behavior are: to understand the environment, making self-evaluations, and, to develop and sustain feelings of competence (Ashford & Cummings, 1983). Individuals can obtain feedback through proactive behavior to gather relevant information from colleagues or supervisors about their own behavior (Ashford et al., 2003; Ashford, 1986; Gupta, 1999). In this way, employees commonly desire to master the environment in order to achieve their goals to advance their career, being appreciated by colleagues (Grant & Ashford, 2008) and for socializing with colleagues (Ashford & Cummings, 1983). In addition, feedback provides information about the relevance of the goals in the organization. In short, feedback solicited from relevant others represents a valuable source of information about the behavior of the feedback seeker as well as about his/her organization (Ashford & Cummings, 1983; Gupta, 1999). A study of Tannenbaum (1997) claimed the pivotal role of the supervisor in acting upon feedback and in improving continuous learning. With respect to the effects of feedback seeking and more concretely the for learning important step of acting upon the feedback sought, evidence shows that acting upon feedback is positively related to the career development of the employees (Ashford et al., 2003; Atwater & Brett, 2005; London & Smither, 2002; Smither, London, & Reilly, 2005).

Information seeking
Miller and Jablin (1991) define information seeking as "deliberate, conscious efforts" for obtaining knowledge (p. 101). In general, information seeking refers to the proactive behavior of an individual to compensate for a lack of information (Lee, 1997; Morrison, 2002). Information can be sought from non-personal sources like web searches and professional literature as well as from personal sources, in interaction with others. The present study takes into account the personal sources of information seeking. Potential sources of information include management or supervisors and co-workers, other member of the organization such as secretaries, or external members such as clients (Miller & Jablin, 1991). Information seeking is an important source for learning how to perform ones tasks, clarifying ones role within the organization, understanding the organizational culture, and to become socially integrated within ones work group. Usually, newcomers tend to seek more information from supervisor and co-workers about their new tasks (Ashford, 1986; Miller & Jablin, 1991). However, information seeking is a concept not only relevant for newcomers but more generally functions as a mean to stay up-to-date and informed about the developments within ones professional field or to gain relevant information from colleagues or supervisors, necessary to solve uncertainties (Hofmann, Lei, & Grant, 2009). The effect of information seeking has been demonstrated in prior research (Cross, Rice, & Parker, 2001). People benefit from information seeking in different ways such as solutions to a problem, increased knowledge about a task, problem reformulation, or validation of plans or solutions (Cross et al., 2001; Cross & Sproull, 2004).

Help seeking
Help seeking is defined as an activity in which individuals deliberately approach others whom they consider to be better capable or having the resources required to solve a problem (Karabenick & Knapp, 1988). Helping describes efforts to seek assistance and aid from others. It is a proactive behavior through asking others for their assistance, support or advice (Hofmann

et al., 2009; Van der Rijt, Van den Bossche, Van de Wiel, et al., 2013). Employees in need of help define their problem, and proactively seek for those individuals in their work environment that have the resources to support them to find a solution to their problem (Lee 1997). Therefore, it is a concept similar to information seeking and feedback seeking. Yet, it is distinct because help seeking results from the encounter of a specific problem whereas information and feedback seeking are also relevant in the absence of an explicit problem (Lee 1997).

Prior research showed that help seeking depends to a great extent on the quality of their relationship to potential help providers (Van der Rijt et al. 2013b). Employees are most likely to seek help from people they trust and can access easily, as help seeking also entails the risk of revealing one's weakness and incompetence. Hofmann et al. (2009) showed that help seekers tend to consult more frequently the experts, since these are considered to be a higher quality source of help. However, the study also demonstrates that accessibility and trust influence the help seeking activity, suggesting that there are psychological and interpersonal factors that contribute to determine from which source the help is sought. Regarding the effects of help seeking, literature suggest that it is an important strategy of self-regulation to promote learning (Karabenick & Knapp, 1991), improve performance and increase understanding of a certain topic (Butler & Neuman, 1995; Ryan & Pintrich, 1997).

Although the concept of acting upon feedback, information seeking, and help seeking share similarities, most research has been focused only on one of them. As a consequence, much is known about the specific activities separately but comparatively little is known about the preferences that characterize employee's engagement in learning from others. Still, questions such as "Do people have a preference for certain learning activities?" have been asked before in other domains, namely, in the domain of individual learning styles and learning strategies (Berings, Poell, & Simons, 2005; Kolb, 1984; Mumford, 2002). Researchers in this field discovered that individuals differ in their learning strategies and started to make learning profiles (Bernsen, Segers, & Tillema, 2009; Kolb & Kolb, 2005). Learning profiles group common ways that individuals learn. Some may have a preference for a certain learning activity while using other activities to a lesser extent. Yet, the same question regarding preferences can be raised for proactive learning from others given the increasing evidence that learners act based on their own goals (Tannenbaum, Beard, McNall, & Salas, 2010). In support of this question, Grant and Ashford (2008) noted that we have devoted insufficient attention to the different profiles that characterize employee's engagement in proactive activities. Moreover, prior research showed significant but low correlations between the three activities (Froehlich et al., 2015, 2014; Gerken et al., 2015). The study of Froehlich et al. (2014) indicated that employees scored higher and thus had a preference for acting upon feedback and less for information seeking. This study takes research a step further to determine whether different learning profiles of learning from others can be distinguished. Therefore, we formulate the following research question:

> **Research question 1: Can different profiles regarding the engagement in learning from others (i.e. information seeking, seeking help, and acting upon feedback) be identified?**

5.2.2 MOTIVES TO ENGAGE IN LEARNING FROM OTHERS: WORK EXPERIENCE AND JOB MOBILITY

Employees may choose to engage in different learning activities from others depending on the situation. Prior research, for example, found that employees who experience novel or challenging situations through new job functions or a variety of new tasks tend to participate more in workplace learning (Billett, 2002; Doornbos et al., 2008; Fuller & Unwin, 2004). Ashforth et al. (2007) argued that employees need to learn the processes and procedures coming along with the new task or job. Much research on the motives to engage in information seeking, help seeking and acting upon feedback has been done among newcomers in organizations (Morrison, 2002; Hays & Williams, 2011). With respect to the specific learning activities of help seeking and information seeking, former research has been indicating the role of instrumental motives (Bamberger, 2009; Miller & Jablin, 1991; Morrison, 1993) in contexts that are high on contextual uncertainty (Morrison, 2002; Van der Rijt, Van den Bossche, Van de Wiel, et al., 2013), novelty (Morrison, 1993), and change (Bamberger, 2009). Seeking help and information can reduce uncertainty regarding one's tasks or when encountering problems at work. New employees seek different types of information depending on the kind of information needed and the hierarchical position of the colleague whom they are seeking information from. Specifically, research highlighted that technical information was asked to supervisors whereas social information was asked to co-workers (Morrison, 1993). Finally, Morrison (1993) confirmed that not only newcomers but also employees holding a job for a longer time who are unsure about their performance tend to seek more information from others. Thus, job mobility, that is changing jobs or organizations, might drive employees to engage in information seeking and help seeking.

Regarding feedback seeking behavior, employees seek to obtain information or feedback but can also refrain from seeking when they feel it is potentially threatening to their ego (Ashford et al., 2003). Former studies indicated that employees seek feedback to reduce uncertainty and anxiety regarding ambiguous situations and the performance contingencies in a new environment (Ashford & Cummings, 1983). Employees use the information gained to adapt and improve their job performance and satisfaction (Ashford, 2003; Van der Rijt, Van den Bossche, & Segers, 2013), evaluate their progress, change their behavior or to increase their self-awareness (Ashford, 1986). However, context plays a role. Employees that feel psychologically safe in their work environment in the sense that they believe that problems can be brought up and mistakes can be made, tend to ask more feedback from their colleagues (Van der Rijt, Van den Bossche, Van de Wiel, Segers, & Gijselaers, 2012). Yet, as employees become more familiarized with the new work environment, feedback and information seeking become less frequent as those activities might undermine their confidence (Ashford & Cummings, 1983). Research on work experience showed that employees with a higher work experience have a particular approach to and participation in learning (Felstead et al., 2005; Fenwick, 2012). Work experience was reported to be helpful in focusing on relevant information resulting in higher learning behavior (Maurer & Weiss, 2010; Paloniemi, 2006). In contrast, employees with more work experience gained increased job knowledge and skills over time and invested less in learning from others (Richter et al., 2011). They better understand how well they are doing on the job and, as a consequence, they seek less

feedback, information or help (Berg & Chyung, 2008).

Empirical studies such as mentioned above have helped to develop a better understanding of factors influencing the three learning activities. For example, uncertainty predicts higher levels of information seeking and feedback seeking behavior (Ashford et al., 2003). Given the findings, we assume that work experience and job mobility have an influence on employee's preferences. This study focuses on how work experience and job mobility, i.e. having worked in different jobs as well as organizations, relates to employees learning profiles. Thus, we formulate the following research question:

> **Research question 2: How are employees' work experience and job mobility related to their learning from others profile?**

5.3 METHOD

5.3.1 PARTICIPANTS AND PROCEDURE

Data were collected by means of an online survey on learning in the workplace among employees. Employees working in different sectors, such as energy, IT, metal, consulting and health care were invited to participate anonymously via a website (www.fl2i.com) between April and October 2014. After filling in the online survey measuring feedback seeking, information seeking, help seeking, and career trajectory characteristics, participants received immediate feedback on how to optimize their learning in the workplace. In total, 387 employees started the questionnaire of which 369 completed the questionnaire. We conducted a strict data cleaning procedure and removed respondents who completed the questionnaire several times (i.e. based on IP address and the combination of personal characteristics). In addition, respondents with suspicious answer patterns were deleted (i.e. no variance in their responses) which resulted in a final sample of 355 respondents. The respondents were between 18 and 66 years old (M = 41.85, SD = 11.73). The sample consisted of 157 (42.5 percent) men and 193 (53.7 percent) women. On average, participants had 18.37 years of work experience, worked for 3.76 different organizations, and had 4.76 different job functions on average.

5.3.2 MEASURES

The online survey consisted of 15 questions measuring the learning from others construct as well as career trajectory characteristics, including the career trajectory. Learning from others was measured with an existing questionnaire based on Froehlich et al. (2014). The scale consists of 10 items rated on a 5-point Likert scale ranging from 1 ("completely disagree") to 5 ("completely agree") measuring four activities: acting upon feedback supervisor, acting upon feed-

back colleague, information seeking, and help seeking. We confirmed the previously validated 4-factor structure in our sample (RMSEA = 0.05, X^2/df = 2.17, CFI = .98, TLI = 0.97, SRMR = .03 (Hu & Bentler, 1999)). The four scales had acceptable reliabilities, with Cronbach's alpha ranging from 0.61 to 0.81. Sample items are "feedback from my supervisor makes me reflect" (acting upon feedback supervisor, 3 items), "the feedback I receive from my colleagues is helpful" (acting upon feedback colleague, 3 items), "If I were having trouble understanding working material I would ask someone who could help me understand the general ideas" (help seeking, 2 items), and "I meet employees from other organizations by participating in conferences, workshops, and lectures" (information seeking, 2 items).

Career trajectory characteristics included the number of work experience in years, the number of job functions employees had so far, and the number of organizations employees worked for in total.

Control variables. Age and gender were selected as control variables. We asked participants for their chronological age. Gender was coded as women = 0 and men = 1.

5.4 Data analysis

Before answering the research questions, the data were inspected for normality and homogeneity of variance. Next, bivariate correlation analysis was used to explore the relations between the variables. In this study we were particularly interested in determining the relationship between the type of learning profile and employees' career trajectory characteristics. First, learning profiles were generated using latent profile analysis. This statistical analysis is a person-centered method that estimates the number of classes of an underlying continuous latent variable and which accounts for the relationships between observed variables (Magidson & Vermunt, 2002; Nylund, Asparouhov, & Muthén, 2007). This method creates subgroups of respondents who answer in a similar way to the observed variables of acting upon feedback supervisor, acting upon feedback colleague, information seeking and help seeking. The model parameters include class membership probabilities. The model fit was assessed using Bayesian Information Confirmation (BIC) and entropy (Magidson & Vermunt, 2002). Entropy indicates to which extent the latent classes are distinct from one another and a number close to 1 indicates clear classification. The analysis was conducted using Mplus 7 (Muthén & Muthén, 2012).

Second, once the suitable latent class structure of learning from others was determined, using the fit criteria, the latent class model parameters were fixed in order to conduct multinomial logistic regression. This analysis predicts the probability that an observation falls into one of the three categories of learning from others based on the career trajectory characteristics. We calculated odds ratio (with 95% confidence intervals) that compares classes to the baseline class. We examined the odds ratio to identify those employees that had a higher probability of being in a certain class, given their career trajectory characteristics.

5.5 RESULTS

5.5.1 PRELIMINARY ANALYSIS

Table 5.1, which presents correlations between learning from others and career trajectory characteristics, shows strong relations between the four learning behaviors ($r = 0.13$, $p < 0.05$ to $r = 0.47$, $p < 0.01$). The number of jobs was significantly positively correlated to acting upon feedback from colleagues and information seeking. Furthermore, work experience was significantly positively correlated with information seeking and negatively correlated to acting upon feedback from the supervisor. This shows that employees with more experience act less likely upon feedback received from their supervisors. There was a positive correlation between the number of organizations and help seeking and gender correlated positively with acting upon feedback supervisor and help seeking. Other relations between learning and career trajectory characteristics were not significant.

Table 5.1 Descriptive statistics and correlations for learning from others and career trajectory characteristics

	M	SD	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Age	41.85	11.73									
2. Gender	0.55	0.49	-.18**								
3. Work experience	18.37	11.68	.92**	-.17**							
4. Number of jobs	4.76	2.52	.56**	-.21**	.60**						
5. Number of organisations	3.76	2.12	.33**	-.09	.35**	.63**					
6. Acting upon feedback supervisor	4.06	0.68	-.13*	.13**	-.14**	-.02	-.07	(.81)			
7. Acting upon feedback colleague	4.15	0.50	.04	.01	.04	.14**	.05	.50**	(.71)		
8. Information seeking	3.78	0.91	.12*	-0.3	.14**	.20**	.07	.14**	.26**	(.78)	
9. Help seeking	3.87	0.73	.02	.14**	-.01	.07	.13**	.25**	.45**	.22**	(.61)

Note. N = 355. Values for Cronbach's α are presented in parentheses in the diagonal of the correlation matrix
*p < 0.05, **p < 0.01

5.5.2 LATENT CLASS ANALYSIS

Next, we addressed the types of learning profiles among employees. Latent profile analysis showed that a three-class structure was the best solution as this had the lowest Bayesian Information Criterion (BIC 2790, entropy 0.89). The certainty of the classification for the three-class solution was high, as indicated by the average latent class probabilities (Table 5.2). For example, employees who are classified to be most likely in latent Class 1 have a .94 probability of falling into Class 1, a .06 probability of falling into Class 2, and a .00 probability to fall in Class 3. Similar probabilities were obtained for Class 2 and Class 3.

Table 5.2 Latent profile analysis: average class probabilities for learning from others

	AVERAGE CLASS PROBABILITY		
Class membership	Class 1	Class 2	Class 3
C1	.94	.06	.00
C2	.01	.95	.03
C3	.00	.05	.94

Note. N = 355

Class 1 representatives are engaging in all four learning behaviors (Table 5.3). These employees indicate to participate frequently in acting upon feedback, information and help seeking. Class 2 represents the employees that foremost act upon feedback from their colleagues. They score lower on information seeking and help seeking but report to seek and use feedback from their colleagues. Finally Class 3 representatives have a preference for acting upon feedback from their supervisor and colleagues although they score lower on both items. They do choose to seek less information and help.

Table 5.3 Latent class means and standard deviations for learning from others

	CLASS 1		CLASS 2		CLASS 3	
	25.35%		68.73%		5.92%	
Item	Mean	SD	Mean	SD	Mean	SD
1. Acting upon feedback colleague	4.78	.03	4.02	.02	3.14	.10
2. Acting upon feedback supervisor	4.63	.06	3.92	.03	3.50	.18
3. Help seeking	4.33	.07	3.77	.04	2.91	.22
4. Information seeking	4.05	.09	3.76	.06	2.76	.28
Cases per class	90		244		21	

5.5.3 MULTINOMIAL REGRESSION ANALYSIS

Table 5.4 shows the results of the multinomial logistic regression analysis. The number of jobs significantly negatively predicted whether employees belong to class 2 or class 3, b = -0.18, Wald χ^2 (1) = 5.19, p < .05. This means that the higher number of jobs one employee had, the less likely the employee belongs to class 2 (acting upon feedback colleagues). Next, work experience significantly predicted whether employees belong to class 2 or class 3, b = 0.03, Wald χ^2 (1) = 4.58, p < .05. Employees are more likely to act upon feedback from their colleagues (class 2) if they have more work experience.

Table 5.4   Multinomial logistic regression analysis of latent classes and career trajectory characteristics

	B (SE)	95% CI for Odds Ratio		
		LOWER	ODDS RATIO	UPPER
Class 1 vs. Class 3				
Intercept	-.68 (.53)			
Work Experience	-.04 (.03)	.90	.96	1.02
Number of jobs	-.14 (.17)	.61	.86	1.22
Number of organisations	-.08 (.16)	.78	1.08	1.51
Class 2 vs. Class 3				
Intercept	.84 (.30)*			
Work Experience	.03 (.01)*	1.00	1.03	1.06
Number of jobs	-.18 (.08)*	.70	.83	.97
Number of organisations	.07 (.07)	.92	1.07	1.26

Note. N = 355. R^2 = .04 (Cox & Snell), .06 (Nagelkerke). Model χ^2 (8) = 17.45, p < .05

*p < 0.05

5.6   DISCUSSION

Earlier research into information seeking, help seeking and acting upon feedback showed that each activity has value in certain situations and for certain purposes. The current study examined these behaviors jointly to detect employees' preferences and their relationship with work experience and job mobility. We identified employees' preferences in their information seeking, help seeking and acting upon feedback behavior using latent profile analysis. The results revea-led three classes of proactive learning from others. Employees in the first class engage in all learning behaviors above the overall sample average. These employees do not make a difference between information seeking, help seeking and acting upon feedback, they invest in all of them. In the second class employees engage foremost in acting upon feedback from colleagues and less in information seeking and help seeking. This implies that employees would be less likely to seek for help or information in a given situation. Employees in the third class have a preference for acting upon feedback. They do not make a difference between feedback received from supervisors or colleagues and seem to act upon feedback given by both parties. It seems that employees in class 1 use the full potential from all three learning from others behaviors whereas employees in class 2 and 3 make suboptimal use of the value of learning from others.

The second research question examined relevant career trajectory predictors (work experience and job mobility) for employees' engagement in learning behaviors. Employees that change jobs less often are more likely they belong to the second class. Less mobility and more work experience apparently lead to less information seeking and help seeking. A possible reason could be that employees have gained a lot of knowledge and insights in their job and tasks. At the same time, employees are more likely to act upon feedback from their colleagues. In other words, employees with more work experience and that stay longer in one job function get to know their colleagues better and are prone to seek and act upon feedback from them. That may be due to the fact that employees might have more confidence and therefore the tendency to seek evaluative feedback and use it. The results might indicate the role of psychological safety for learning as demonstrated by Edmondson and Lei (2014). Psychological safety describes the perceptions of being comfortable to take interpersonal risks. It can help to explain why employees feel secure and capable of seeking and using evaluative feedback – a learning behavior that might be threatening otherwise.

5.7   LIMITATIONS AND FUTURE RESEARCH

A number of limitations of the current study deserve some discussion. First, the study has been conducted within a wide range of organizations. Although this variation of organization enhances the possibility to generalize the findings of the study, it does not take into account the various work contexts of the participants that may influence acting upon feedback, information seeking, and help seeking. Second, help seeking did not differentiate between the source of help, if either from supervisor, colleague, or other parties. Knowing from which source employees mostly tend to seek help, organizations could, for example, facilitate the interaction with the best source of help enabling the seeker to learn better and faster. Third, the data collection was cross-sectional meaning that the data was collected at one point in time. Future research could adapt a longitudinal approach to investigate the development of types of learning profiles over time and its interaction with career trajectory characteristics and environmental characteristics. Fourth, we used self-reports to capture learning in the workplace which might cause selection bias (Heckman, 1979). It might be that only those employees interested in learning

responded to the survey. Still, participants themselves are the first to have information about to what extent they show learning behavior in different situations. Other alternatives for measuring learning from others might be considered, such as direct observation by other sources such as supervisors and independent ratings provided by others. Fifth, focusing on work experience, the number of jobs and the number of organizations provides only a starting point for the motives for engagement in learning from others. Future research could examine a broader range of antecedents that influence learning from others. A promising direction could be the interaction between employees' motives that underlie acting upon feedback, information and help seeking, and the learning climate in organizations (Ashford et al., 2003; Garvin, Edmondson, & Gino, 2008; Yang, Watkins, & Marsick, 2004).

5.8 PRACTICAL IMPLICATIONS

The findings of this study have various implications for practice. Organizations should raise awareness among their employees on the importance of learning from others. The results shed new light on understanding that employees are prone to engage in certain learning behaviors. Employees in class 2 and 3 make suboptimal use of the value of learning from others. Especially for these clusters, raising awareness of the value of all three behaviors seems important. Organizations might not be aware of the important role of help seeking and information seeking. Supervisors can help to empower and facilitate all three behaviors by adopting roles that include development responsibilities (Ellinger, Watkins, & Bostrom, 1999).

Moreover, work experience and the number of the jobs appear to be of influence on learning. These results support organizations to have a look at the job variety within the organization. Employees that move frequently from one job position to another are less prone to seek information and engage less in help seeking and acting upon feedback. Based on this information, organizations can design the work environment in a way that supports employees. First of all organizations should make employees aware of their learning preferences to empower them to make the most out of their learning opportunities. For instance, professional development programs can be tailored to the needs of employees. In addition, HRD practitioners can help employees to monitor their preferences and help them assimilate to a learning behavior in a certain situation. For example, in case of uncertain situations employees should instantly seek information whereas in other situations it is better to wait to act upon feedback or seek help. Different learning situations can ask for different learning from others behaviors depending on employees' preferences.

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6.1 GENERAL DISCUSSION

This chapter summarizes, integrates and clusters the main research findings of this dissertation and the theoretical contributions made to research on informal learning from others in the workplace. Next, research limitations and directions for future research are discussed. The chapter concludes with practical implications for practitioners and organizations where innovation and employability are high on the agenda and that wish to invest in their employees' informal learning from others in the workplace.

This dissertation started with the observation that informal learning is a central theme in organizations and seen as important for employee's professional development. Empirical research studies on informal learning claim that informal learning is a major component for acquiring and developing knowledge and skills that are important within organizations (Eraut, 2004; Tynjälä, 2008). As yet, the nature of informal learning is difficult to define as it contains various behaviors (Lohman, 2006). Previous research identified a whole range of different informal learning behaviors in which employees engage in. As a consequence, several definitions of informal learning exist and there seems to be disagreement about the specific characteristics on informal learning (Lohman, 2006; Manuti, Pastore, Scardigno, Giancaspro, & Morciano, 2015). Literature made important progress by differentiating between individual informal learning and informal learning from others (Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009; Noe, Tews, & Marand, 2013; Richter, Kunter, Klusmann, Lüdtke, & Baumert, 2011). Following Noe et al. (2013) we refer to informal learning from others as the proactive seeking for relevant others in the workplace to share information and expertise. This includes learning from colleagues, clients and supervisors. Literature indicated that employees rely especially on interaction with others as part of informal learning (Billett, 2004; Eraut, 2007). Yet, research is lacking a clear picture of the behaviors that employees engage in when talking about informal learning from others and how this relates to employees professional development. Therefore, the present dissertation aimed to investigate the different ways employees can engage in informal learning from others. Behaviors of informal learning from others we have been addressing are acting upon feedback, information seeking and help seeking. More specifically, this dissertation examined the impact of formal and informal learning from others on employees' employability, the impact of informal learning from others on innovative work behavior and tried to find out if employees have a preference for certain informal learning behaviors and what motivates them to engage in these behaviors. Regarding employability we were interested in the expertise (occupational expertise) and adaptability of employees (anticipation and optimization and personal flexibility) in the job as defined by Van der Heijde and Van der Heijden (2006). Related to the interest in employability, we also refer to the concept of innovative work behavior. Innovative work behavior refers to a set of four innovation tasks that employees carry out (Messmann & Mulder, 2012). These are: opportunity exploration (the recognition of opportunities for change and improvement); idea generation (generating solutions for problems and searching out new working methods); idea promotion (mobilize support and acquire approval for innovative ideas); idea realization (transforming innovative ideas into useful applications and evaluating the utility of innovative ideas). In sum, this dissertation tried to find an answer to the following research questions:

1) **What is the relationship between formal and informal learning from others on employability in different work environments?**
2) **What is the relationship between informal learning from others on innovative work behavior?**
3) **What are motives for engaging in informal learning from others?**

The questions are addressed in four different research studies, using data from employees working in different sectors in the Netherlands.

6.2 KEY EMPIRICAL FINDINGS

This part summarizes the key empirical findings based on the main research questions and research results across all four empirical studies (Chapter 2 - Chapter 5).

6.2.1 INFORMAL LEARNING FROM OTHERS RELATES TO EMPLOYEE'S EMPLOYABILITY

The results of the studies in Chapter 2 and Chapter 3 showed that informal learning had an effect on employability. More specifically, in Chapter 2 we reported a first exploration of the relation between informal learning from others and employability by using an existing instrument that measured informal learning in a general way. Chapter 2 revealed that two informal learning behaviors, creating opportunities to gather information and proactive learning from others, affected only the dimension anticipation and optimization. Employees that proactively look for opportunities or engage in networks are able to reflect on developments in their specific discipline and understand the requirements that these impose on their own personal development. From Chapter 3 onwards, we systematically focused on three specific informal learning from others behaviors: feedback seeking (specifically using generated feedback), help seeking and information seeking. Chapter 3 showed that informal learning supported the employability of faculty staff (Gerken, Beausaert, & Segers, 2015). Acting upon feedback from colleagues affected all three dimensions of employability under study, indicating that informal learning from others plays is an important role in staying employable. Information seeking enhanced anticipation and optimization whereas seeking help predicted personal flexibility. Faculty staff that

proactively look for opportunities and information or engage in professional knowledge networks are better able to anticipate possible changes in their career. They have the ability to reflect on developments in their specific discipline and understand the requirements that these impose on their own personal development. Employees that seek help are able to deal with the daily small changes and challenges. To conclude, the results of our studies in two settings indicate that informal learning from others contributes to employee's employability.

6.2.2 INFORMAL LEARNING FORM OTHERS HAS A BIGGER IMPACT ON EMPLOYEE'S EMPLOYABILITY COMPARED TO FORMAL LEARNING

The findings from Chapter 2 and 3 also inform researchers on the complex mix of formal and informal learning and their effects. Typically, formal and informal learning are described as parts of a continuum of learning behaviors (Eraut, 2000; Malcolm, Hodkinson, & Colley, 2003; Sawchuk, 2008; Svensson, Ellström, & Åberg, 2004; Tynjälä, 2008). The results of Chapter 2 show that formal and informal learning enhance different dimensions of employability among employees in the emergency medical services. Yet, informal learning behaviors had a stronger influence on employability than formal learning. More specifically, the results of the study in Chapter 2 show that formal learning relates to the dimension personal flexibility. This finding suggests that formal learning can provide employees with a certain knowledge base and skills necessary to be flexible in handling all kinds of small changes in the workplace. In contrast, the research findings in Chapter 3 indicate that formal learning had no impact on employability among faculty staff at a Dutch university. The results of both studies extend previous research stating that most learning occurs not in a formal setting but in a more natural, informal workplace setting (Tannenbaum, Beard, McNall, & Salas, 2010).

6.2.3 INFORMAL LEARNING FROM OTHERS INFLUENCES EMPLOYEES' INNOVATIVE WORK BEHAVIOR

Prior research on innovative work behaviour has focused on the importance of connections among colleagues in a more general way (Carmeli & Spreitzer, 2009). The research results of Chapter 4 show that two informal learning from others behaviors, that is, acting upon feedback from colleagues and information seeking are related to opportunity exploration, idea generation and idea promotion, the first three dimension of innovative work behaviour. The results underline the importance of proactively seeking information and using the feedback of colleagues to recognize and explore opportunities for change and improvement. Moreover, the quality of feedback is important to substantiate an idea. Next, employees turn to their colleagues and use their feedback as well as seek information in order to promote their idea. Yet, informal learning from others does not affect idea realization, the fourth dimension of innovative work behaviour. Rather, the number of jobs and organizations influence idea realization. The results indicate that a certain level of seniority and experience in different job functions and organizations might help to transform innovative ideas into useful applications in an organization.

6.2.4 EMPLOYEES HAVE PREFERENCES FOR CERTAIN INFORMAL LEARNING BEHAVIORS FROM OTHERS

The results in Chapter 5 demonstrated that employees prefer certain social informal learning behaviors over others and that these preferences are driven by their job mobility and work experience. Using latent profile analysis we identified employees' preferences in their information seeking, help seeking and acting upon feedback behavior. The results revealed three classes of informal learning from others. Employees in the first class engaged in all learning behaviors above the overall sample average. These employees do not make a difference between information seeking, help seeking and acting upon feedback, they invest in all of them. In the second class employees engaged foremost in acting upon feedback from colleagues and less in information seeking and help seeking. This implies that employees would be less likely to seek for help or information in a given situation. Employees in the third class had a preference for acting upon feedback. They do not make a difference between feedback received from supervisors or colleagues and seem to act upon feedback given by both parties. Moreover, employees with more work experience and that change jobs less often are more likely to belong to the second class where employees act upon feedback from colleagues but seek less information and help. One of the reasons might be that employees already gained knowledge and insights in their job and therefore ask for less help or information. Another possible reason could be that employees with more work experience and that stay longer in one job function get to know their colleagues better and are prone to seek and act upon feedback from them. Employees might have more confidence and thus the tendency to seek evaluative feedback and use it. Although prior evidence on preferences for specific informal learning from others behaviors is scarce, our results seem not to confirm the argument that employees with more work experience invest less in acting upon generated feedback (Ashford, 2003).

6.3 THEORETICAL CONTRIBUTIONS

The specific implications and contributions of the research studies are discussed in each individual chapter. In this section, general implications and contributions of the dissertation are discussed. The theoretical implications can be summarized in three main contributions.

6.3.1 TOWARD A FRAMEWORK FOR INFORMAL LEARNING FROM OTHERS

In the past, research on informal learning has been mostly reactive in nature. Researchers have tackled informal learning by noticing all possible behaviors employees engage in and then built theory around it. This resulted in a broad overview of behaviors. Later, researchers have begun to explore the dynamics of informal learning by categorizing the behaviors in either learning from oneself such as reading literature or learning from others such as exchanging feedback with others (Conlon, 2004; Hoekstra et al., 2009). Although general effects have been established,

it is acknowledged that it is difficult to determine the immediate impact of informal learning on professional development. This dissertation built on these efforts to advance research toward a deeper understanding of the behaviors employees can engage in regarding informal learning from others. The first contribution lies in the value of integrating multiple literatures that, although largely unconnected domains of research, are all examples of informal learning from others. For example, the literature on feedback seeking, the literature on help seeking as well as the literature on information seeking allowed bringing together knowledge about informal learning from others and contributed to further theory development. For researchers that wish to gain a deeper understanding of how and when informal learning from others occurs and what the drivers and consequences are, it might be worthwhile to keep on integrating the separate but related research on acting upon feedback, information seeking, and help seeking. A consolidation of research findings will allow for a greater progress in theory building, with a more significant impact on empirical research and practices supporting informal learning from others in the workplace.

6.3.2   UNDERSTANDING THE ROLE OF INFORMAL LEARNING FROM OTHERS FOR EMPLOYABILITY

Another theoretical contribution of this dissertation lies in the effects of specific informal learning from others behaviors on employees' employability. By linking informal learning from others to employability, the present dissertation supports prior insights on professional development (Tannenbaum, 2002; Tynjälä, 2008). Traditionally, organizations have relied upon and researchers focused on learning that happens in formal training and development programs (Govaerts & Dochy, 2014; Panagiotakopoulos, 2011). Research on employability has hardly focused on the relationship with informal learning from others. Moreover, the research that has been done offers limited insights to better understand the specific learning behaviors that support employability. In Chapter 2 we found that two informal learning behaviors (creating opportunities to gather information and proactive learning from others) were positively related to employees' employability. The results of Chapter 3 showed that informal learning behaviors from others had a stronger influence on employability compared to formal learning. In both Chapters, formal learning had less or no effect on employability. In that sense, our results underline that informal learning from others plays a role for employability.

6.3.3   THE ROLE OF THE CONTEXT

As a third contribution, the empirical studies show how work context can cultivate different informal learning behaviors from others. Whereas literature provided important insights into the characteristics of employees that engage in informal learning from others, less is known about how informal learning from others unfolds in different contexts. The research results in this dissertation take a first step in overcoming this gap. Chapter 2 showed that in the context of emergency medical services employees have to operate in a fast-changing environment and

provide medical care in acute situations. Although HRD offer formal training programs that are mandatory for all employees, the results show that informal learning from others explained more variance and thus had a stronger effect on employability. Chapter 3 focused on a different context by looking at faculty staff working at a Dutch university. In this particular context, formal learning was not mandatory. The results show that informal learning from others was related to the three dimensions of employability. In this context, formal learning was not related to employability.

Regarding innovative work behavior, much research has been done in the context of vocational education (Messmann, Mulder, & Gruber, 2010). This calls for further research in other contexts. The results in Chapter 4 add to this call and demonstrated the positive relation between informal learning from others and innovative work behavior across employees working in different sectors (i.e. energy, IT, consulting, and medicine) where innovation is high on the agenda. The results enable scholars to understand how innovative work behavior is taking place in practice and how informal learning from others influences this behavior.

In Chapter 4, the results indicate that the work context in terms of career trajectories play a role in the employees' learning from others profile. Those employees, who show lower job mobility and those who have more work experience than others, engage more in feedback seeking from colleagues and less in information seeking and help seeking.

In general, the findings indicate that the context may be important in research on informal learning from others. The present work suggests that informal learning from others might especially be relevant in rapidly changing environments, uncertain or ambiguous situations where employees are continuously required to innovate and to deal with new ideas and practices.

6.4   AN AGENDA FOR FUTURE RESEARCH

Next to the research suggested previously in this dissertation, there are three avenues that future research may want to address: optimizing the measurement of informal learning and exploring alternative ways of measuring informal learning, the dynamics of informal learning from others in different contexts, and situational antecedents of informal learning from others.

6.4.1   AVENUE ONE: OPTIMIZING THE MEASUREMENT OF INFORMAL LEARNING AND EXPLORING ALTERNATIVE WAYS OF MEASURING INFORMAL LEARNING

Regarding the measurement of learning behaviors in informal settings, future research could take the combined effect of formal and informal learning behaviors on output measures such as employability and performance into account. In addition, future research would benefit from further conceptual development of informal learning. Surveys and interview guides might benefit

from the conceptualization and could be improved to grasp informal learning from others even better. In the present work, we adopted a cross-sectional view on informal learning from others. Future research could study how the informal learning process unfolds over time. The longitudinal perspective can help us understand how certain key events influence informal learning from others. Key events may be opportunities for learning such as new tasks or situations, a change in performance expectations or the change of organizational policies that force employees to recognize the value of informal learning from others. This raises additional questions for future research. For example, it would be valuable to know who employees contact, for example older or younger employees, or how interpersonal favorable or negative relations with others influence their informal learning behavior. In that sense social network analysis (SNA) represents another method that might provide useful insights. SNA allows us to study, for example, psychological safety and feedback seeking on an interpersonal level (Cross, Borgatti, & Parker, 2002; Van den Bossche, Waes, & Van der Rijt, 2014). However, studying different informal learning behaviors together has received less attention in research. This would allow research as well as HRD professionals to further understand how informal learning from others is shaped at the workplace. For example, HRD could use SNA as a mapping tool to detect isolated networks in the organization with the goal to connect and facilitate collaboration among employees.

In this dissertation self-report data were used to map the social informal learning experiences of employees. Other possibilities to measure informal learning might be considered as well, however. Alternatives are: direct observation by other sources such as supervisors and taking into account their independent ratings. Nevertheless, participants are the first to have sufficient information about to what extent they show informal learning behavior in different situations. Moreover, it can be challenging for supervisors and colleagues to monitor closely the daily work of every employee that often occurs outside the view of the supervisor. A fairly new method to capture social interactions is by means of sociometric badges (Kim, McFee, Olguin, Waber, & Pentland, 2012). These wearable devices collect social behavioral data to utilize patterns that show the communication between employees. This method can offer a unique perspective on informal learning from others.

This dissertation only addressed a selection of the broad variety of informal learning behaviors that take place in the reality of work. It might be interesting to focus on the interplay between social and individual informal learning in future research. For example, it would be interesting to study the role of reflection and informal learning from others. Reflection enables employees to think about their behavior and adapt it accordingly. In addition, qualitative methods such as vignette case studies might be appropriate to further explore the richness of learning behaviors. Future research could use qualitative research methods in tandem with the formerly used questionnaire method in order to reach an in-depth understanding of informal learning from others.

As concerns the measurement of learning behaviors in (in)formal settings, future research could also study the characteristics of formal learning programs. Literature on transfer of training focuses on learner characteristics, training design and the transfer climate of the organization (Kontoghiorghes, 2004). Future research could study similar research models as the one used in

this dissertation, while also taking into account the three groups of characteristics that might influence transfer of training.

6.4.2 AVENUE TWO: THE DYNAMICS OF INFORMAL LEARNING FROM OTHERS

Cross-validation of informal learning from others in various sectors deserves further examination and is recommended to increase generalizability. Since the results of this dissertation show differences among various contexts it is expected that informal learning from others occurs in different ways in different organizations, depending on contextual conditions. For example, informal learning preferences may change depending on employees past successes or failures in a certain work context. In addition, it might be interesting to know how knowledge exchange with multiple sources such as colleagues, supervisors, and subordinates interacts and subsequently affects informal learning from others. Likewise, the development of informal learning from others over time and across workplaces and organizations may be interesting to research.

6.4.3 AVENUE THREE: SITUATIONAL ANTECEDENTS OF INFORMAL LEARNING FROM OTHERS

More research is needed to examine the situations in which informal learning from others occurs and the role of both personal and contextual antecedents. One promising direction includes the learning climate within an organization (Clarke, 2005). Previous studies have emphasized the organization's responsibility to create a favorable learning climate to support the (informal) learning of employees (Clarke, 2005). A learning climate refers to the extent to which an individual perceives that learning (i.e. creation, usage, and sharing of knowledge) is supported and expected by the organization or its employees (Yang, Watkins, & Marsick, 2004). Researchers have proposed that the learning climate can influence the behavior of employees (Kirby, Knapper, Evans, Carty, & Gadula, 2003). Therefore, in future research attention should be paid to the learning climate and its specific relation with informal learning from others.

6.5 IMPLICATIONS FOR PRACTICE

The research findings of the present dissertation suggest practical consequences for employees. Organizations and more specifically HRD should raise awareness among their employees of the need for, and the value of, learning from others. Because informal learning from others is often undertaken voluntarily outside of formal job descriptions, employees tend to have a narrow view on learning in general and do not realize themselves how they learn in the workplace. As such, the knowledge about their informal learning from others is tacit which prevents organizations and their employees to get the most out of it. One way to create awareness of social informal learning in the workplace is through the use of workshops in which HRD practitioners help em-

ployees to broaden their view on (informal) learning. This entails that employees recognize the value of informal learning from others for their continuous learning. In the workshop employees are asked to describe their daily work practice and what they do when confronted with challenging tasks or issues at work. For instance, do they turn to their colleagues or supervisor to ask for advice? This workshop approach represents a first practical step on how to create awareness about informal learning from others in the workplace.

There are more ways to support informal learning from others in the workplace. Given the advances in technology, online platforms such as Learning Management Systems (LMS) offer plenty opportunities to help employees to connect with each other. One possibility is to make expertise of colleagues available through this LMS. This can be stimulated by creating for example an application 'ask your colleagues' in which employees are supported in finding expert colleagues on a particular topic in order to contact them on certain subjects. The tool presents an overview of colleagues' expertise otherwise left unknown in organizations. Knowing the expertise and knowledge of colleagues can encourage employees to share information, discuss opportunities for innovative projects and explore ideas together. Moreover, finding other employees that help carry out innovative tasks can stimulate employees to connect. As a result, the interaction and collaboration lay the foundation for enhancing employability and encourage innovations.

Coaching represents another way of stimulating informal learning from others. Coaching is a form of guided learning at work directed and developing valued behaviors (Mumford, 2002). The coach can be a supervisor, colleagues or someone external to the organization that guides the employee over time. The coach offers information about expectations that hold for the individual and gives opportunities to practice new behaviors as well as praises them. The coach can encourage the use of feedback, seeking information or help. The coach might also guide employees' informal learning from others through using the well-known personal development plans. These personal development plans can be presented as learning and development tool (Beausaert, Segers, & Gijselaers, 2011). Employees have certain career aspirations, formulate learning objectives, identify what needs to be learned in order to be employable in their present or future job and, with the help of a coach, reflect on how they will develop further, by learning formally or informally. Until now PDPs often do not take into account informal learning.

The findings also offer practical insights for supervisors. Supervisors can have a central role in empowering and facilitating informal learning from others. It will be valuable for supervisors to adopt roles that include development responsibilities to create a climate and install norms that encourage employees to engage in acting upon feedback, information seeking, and help seeking. For example, by acting as role models to underline the importance of informal learning from others and reward the behavior. Supervisors can also show support through being open to new ideas and the appreciation of changes. Next, by providing practical support in terms of time and space for social interactions such as instructional activities, employees get the opportunity to collaborate, ask and give feedback but also seek information and advice. Moreover, encouraging employees to be each other's mentor might stimulate informal learning from others as well. The present dissertation emphasizes that employees must be invited and empowered to take responsibility for their own professional development through informal learning from others.

6.6 CONCLUSION

Although a growing body of studies accentuates informal learning in the workplace, the research has been neither systematic nor integrated. This dissertation adds to the ongoing literature on informal learning by shedding light on informal learning from others and the relationship with employability and innovative work behavior. We attempted to extend previous findings from literature leading to a more sophisticated understanding of the concept and effects of informal learning from others in the workplace.

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Many companies have become aware of the limited power of formal training programs and are looking at how workplace learning can be encouraged and supported. Still, for many organizations, it is not clear how they can facilitate, support and encourage informal learning from others among employees. The research findings of this dissertation have been transferred into several practical interventions that are implemented in the workplace. The goal of all these interventions is to stimulate informal learning from others among employees.

APPLICATION "FROM LEARNING 2 INNOVATION" (WWW.FL2I.COM)
Attracted funding from: Network Social Innovation (NSI)

The goal of this application (free access) is to provide organizations a basis for structurally supporting informal learning from others thereby increasing employability. We developed and implemented an application that not only measures informal learning from others, but also provides suggestions on how to optimize employees' informal learning in the workplace. Employees develop "naturally" in the company which often remains unnoticed. For instance, they ask their colleagues for advice, share information or make mistakes and correct them. In this context, this diagnostic tool measures the strengths and weaknesses of a company (or unit) in terms of informal learning from others and employability. When employees fill in the survey, they will receive immediate feedback on their level of informal learning from others and how this is related to their employability. The application can be filled in multiple times over a longer period to show employees how their informal learning from others developed over time.

THE LEARNING ECO-SYSTEM
Attracted funding together with the Staff Development Center of Maastricht University from: Sociaal Fonds voor de Kennissector (SoFoKles)

In this project we developed and implemented an online learning platform (Learning Management System) for university staff. This learning eco-system offers a variety of learning paths tailored to today's employees. Different opportunities for informal learning from others, such as discussion fora and the Ask-Your-Colleagues App (see below), are at the heart of the learning platform. The learning platform is based on the principle that employees are responsible for their own learning and development. Employees can develop their skills based on their own needs, interests and responsibilities with the goal to increase career opportunities and their mobility inside and outside the organization. Employees learn at their own pace and in their learning style, both individually and in teams stimulated by relevant content. The content is both general and specific and is presented in various ways: short interactive sessions such as podcasts given by experts, short interactive courses on managing professionals, assessments, discussion fora and workshops. By implementing the platform, the organization facilitates 'learning' to be a permanent topic of the conversations between all employees. This can in turn have a positive impact on the learning culture within the organization. Furthermore, administrative documents such as performance evaluation forms could have a place in the learning system. The forms evaluate employees on their proficiency in certain competencies. If made available online, employees are able to connect their learning progress to their competencies and use this as a basis for the evaluation meetings with the supervisor.

APPLICATION "ASK YOUR COLLEAGUES"

As part of the learning eco-system we also developed and implemented an application that allows employees to find experts on a certain subject within the organization. The application is made to stimulate employees to contact one another with questions or ask for advice and feedback. The interactive map presents an overview of experts otherwise left unknown in organizations. Employees can use the search function to find experts on a certain topic (e.g. EU project management) and get in contact with a colleague. Knowing the expertise and knowledge of colleagues can encourage employees to share information, discuss opportunities for innovative projects and explore ideas together. Moreover, finding other employees that help carry out innovative tasks can stimulate employees to connect. As a result, the interaction and collaboration lay the foundation for enhancing employability and encourage innovations.

PERSONAL DEVELOPMENT PLANS TO STIMULATE INFORMAL LEARNING FROM OTHERS
Attracted funding together with Ambulancezorg Limburg Noord from: Nederlandse Stichting voor Psychotechniek (NSvP)

In a first project in 2013, we created a learning map on how employees learn formally and informally in the Ambulancezorg Limburg (emergency medical services) and how this, in turn, influences their employability. Formal training programs are a mandatory part for employees working in the emergency medical services to keep up-to-date with the latest technology and emergency procedures (e.g. cardiopulmonary resuscitation). The results showed that formal and informal learning enhanced different dimensions of employability. Yet, informal learning had a stronger influence on employability than formal learning. A more detailed description of the study and the results can be found in Chapter 2 of this dissertation.

A follow-up project is presently taking place at the Ambulancezorg Limburg Noord, the Netherlands. Based on the results of the first project, we are setting up an intervention study to stimulate informal learning from others among employees by means of personal development plans (PDP). Professional development plans are used to "gather and document information

about the competencies the employee worked on and is planning to further develop" (Beausaert, Segers, & Gijselaers, 2011b, p.232). Literature suggests that PDPs can stimulate employees' formal and informal learning to develop professionally (Beausaert, Segers, & Gijselaers, 2011a). Currently, in most PDPs, future learning activities are formulated within the context of formal training programs. So far, few scholars and practitioners have taken into account how informal learning from others can be a resource for professional development. The goal of this intervention is to give informal learning from others a central role in personal development plans. The PDP can be connected to the learning that takes place daily in the workplace by adding core reflection questions to the PDP asking about employees' informal learning from others. Questions like "who do you turn to when facing a problem?", "what are the core characteristics of your memorable learning events and why are they memorable for you?" and "what is your next step given your experience?" can be part of the PDP. The aim is to make employees aware that professional development is a daily activity and that powerful learning experiences are not restricted to participation in formal training programs but take place minute-by-minute during daily work. An introductory session given by HRD for supervisors can help to integrate the PDP into the workplace. Another way of stimulating informal learning from others is to schedule a follow-up meeting in response to a training or experience in the workplace whereby participants exchange information and feedback on the acquired knowledge and skills. The richness of the learning experiences is then mapped in the PDP.

MENTORING AS A TOOL TO STIMULATE INFORMAL LEARNING FROM OTHERS
Attracted funding together with Université Catholique de Louvain (Belgium) from: Municipality Kerkrade (the Netherlands)

In a different project, inspired by our research findings and supported by the author of this dissertation and her colleagues, the staff at the municipality Kerkrade is currently exploring mentoring as a tool to stimulate informal learning from others. It's a master-apprentice learning method to retain the knowledge of senior staff in the organization and allow the transfer to younger staff. More specifically, a mentor is a more experienced colleague who will move to another job or soon retire and assists and gives advice to younger colleagues. At the same time, the young colleagues can bring new innovative ideas to ensure that the necessary changes are made in the organization. Employees can be prepared for their master/apprentice function by attending workshops given by HRD. The workshop can be based on previous experiences of employees and examine the way they give (constructive) feedback and to stimulate their reflection in order to maximize learning opportunities. The master-apprentice method helps employees to share information, feedback and give assistance; which in turn will have a positive impact on the development of occupational expertise and active and passive flexibility (three dimensions of employability).

STIMULATING INFORMAL LEARNING FROM OTHERS OF UNEMPLOYED PEOPLE
Pilot project in cooperation with VDAB (Belgian public employment service of Flanders)

The goal of this pilot project was to stimulate informal learning from relevant others in your network to be more aware of your talents (beyond the specific jobs a participant has had in the past). Together with a regional centre of the VDAB, the Belgian public employment service of Flanders that offers employment services, training and career guidance, we set up an intervention in order to stimulate informal learning from others of unemployed people. The project lasted for six months in 2015. Participants were asked by VDAB if they want to take part in the project. They were divided in an experimental and a control group. Participants in the experimental group (N = 16) received the informal learning intervention given by the VDAB in cooperation with us. Participants in the comparison group (N= 14) took part in the 'traditional' career guidance offered by the VDAB.

The informal learning intervention consisted of five group meetings supported by 2 VDAB coaches. The first meeting was a defreezing workshop where participants got to know each other. The goal was to "unfreeze" their potential through activities and make them aware of informal learning. After that, three coaching sessions took place in month 2, 3, and 4 and a final meeting in month 6. The goal of the coaching sessions was to guide participants in their development using different methods to explore their profile in terms of unique talents as well as sources for feedback, help and information to fine-tune their profile.

The intervention activities as well as the measurement of informal learning in this project draw on a social network perspective to capture the participants' social relationships and the acquiring of information, feedback and help. In particular, an egocentric network technique was used to investigate the participant's relationship within their network (Cross & Sproull, 2004; Van den Bossche et al., 2014). The method obtains information about the contacts in the network thereby providing a closer look at informal learning from others. Participants set their own boundaries that make it possible to ask about contacts in the private as well as (past) professional environment. In addition, data have been collected on self-efficacy, three dimensions of employability (occupational expertise, anticipation and optimization, personal flexibility) and a self-chosen competence, at the start and at the end of the intervention, for the experimental as well as control group. Given the limited numbers of participants, the findings need to be interpreted carefully. The main finding indicates that participants in the intervention group stated to have a broader network compared to the control group at the end. Participants in both groups also experienced a growth in their competences. Currently, the ideas developed in this pilot project are disseminated in other regional centers of VDAB.

6.7 REFERENCES

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Informal learning is a central theme in organizations. Charming cartoons and simple diagrams teach us that not less than 70% is learned informally on the job. This is particularly true for knowledge-intensive organizations where work is rapidly changing and innovative. However, the concept of informal learning has been difficult to explain as it is unclear in which kind of informal learning behaviors employees engage in. Researchers have tackled this issue by observing all possible informal learning behaviors and activities resulting in a broad overview. This approach has limitations: using a broad overview can lead to fallacies if the findings are used to make clear statement on the possible effects of informal learning. The goal of this dissertation was to gain a refined understanding of the informal learning behaviors employees engage in and how this contributes to their professional development. Specifically, we focused on informal learning from others and further operationalized this concept by looking at three behaviors: acting upon feedback, information seeking, and help seeking. The concepts of employability and innovative work behavior were selected as indicators for professional development as these constructs are recognized in literature to be influenced by learning. The research findings of this dissertation have been transferred into several interventions that are implemented in the workplace to stimulate informal learning from others among employees.