



Development paths of project managers: What and how do project managers learn from their experiences?

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Abstract

The development paths of project managers are paved with formal and informal learning experiences. Knowledge of the learning experiences that project managers indicate as important for their development as professionals is limited in both the academic and the practitioner world. In the current study we explore what and how project managers learn from experiences, and what is perceived as supporting this learning. We used a multi-method approach, consisting of in-depth interviews and a short follow-up survey among 31 project managers. Results show that most learning experiences occur more or less accidentally on the job and support for learning from these experiences is limited. This suggests potential to improve the quality and pace of the development paths of project managers. Limitations of the current study, and implications of these findings for theory and practice are discussed opening up avenues for future research.

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1. Introduction

Much professional learning occurs on the job (Day et al., 2014; Eraut, 2004). This informal learning on the job is of major importance in the development of professionals in complex jobs who have to deal with new and unexpected challenges in the environment (Day et al., 2014). For several reasons, this might especially be true for project managers, who mostly seem to ‘learn by doing’ from their experiences, rather than learn by studying. Firstly, many project managers fulfill their project responsibilities alongside another job; a more

permanent position for which they have been educated. Secondly, even if being a project manager is their primary job, most project managers did not set out to work towards this role when they first entered the job market, but ‘rolled into it’ at a later stage in their career. This is in line with Palm and Lindahl (2015) in their findings among project managers in technical environments. They show that technical experts were often promoted to the project manager position, despite lacking formal management training, so they had to learn ‘on the job’. According to Palm and Lindahl (2015), project managers perceive a lack of formal structures for training, guidance and support. The consequence is that their formal education in project management is often limited. Thirdly, the application of the recognized bodies of knowledge (e.g., the PMBOK by PMI, 2013) is not standardized, as principals of project managers generally use their own personal norms and standards about what constitutes good practice in project management. This means that project managers frequently have to adapt their way

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of working according to the expectations of a new principal in a particular project, learning as they go along. In summary, informal learning through experiences seems to pave the development paths of project managers, i.e., the path through which a project manager develops as a professional over time.

Yet, knowledge of project managers' developmental paths' in practice is still limited, leaving many questions largely unanswered concerning what and how they learn. Increased insights into project managers' development paths might not only spearhead their own motivation and career progression, but also the success of their projects and organizations. Although it is known that in practice, both formal and informal learning are inextricably intertwined (Marsick, 2009), most literature on the development of project managers mainly focuses on formal programs (Berggren & Söderlund, 2008; Crawford et al., 2006; Ojiako et al., 2011; Pant & Baroudi, 2008; Thomas & Mengel, 2008). Therefore, research that takes into account development through both formal programs and ongoing practice is called for (Cheetham & Chivers, 2001; Day et al., 2014). In addition, the extensive body of knowledge on the competences of effective project managers (see, e.g., Müller & Turner, 2007) gives little insight into the development paths through which they become such effective project managers. This raises the question of how the development of project managers progresses.

The first aim of this paper is to build a picture of the development paths of project managers, focusing on both their formal and informal learning experiences and to investigate the questions 'what do project managers learn from their experiences and how do they learn it?'

A second aim of our investigation is to gain more insights into the development of project managers through focusing on the practitioner's lived experiences of projects, as Cicmil et al. (2006, p. 675) call for. In so doing, we follow Morris's (2013) plea to increase the validity of the insights gained by illustrating them through the use of interpretative epistemologies, focusing on the experiences they are built on, in addition to the positivistic epistemologies that seem to dominate public knowledge, giving recipes and lessons learned. The Project Management Institute's (PMI) Project Management Body of Knowledge (PMBOK by PMI, 2013) is an example of such positivist epistemology that Morris refers to. This standard is based on the practical experiences of those who created it. However we don't know which experiences these are and why these experiences led the PMI authors to conclude that their lessons learned are truly best practices. Using an approach in which insights gained will be illustrated by the experiences they are built on can enable an increase in useful knowledge. We expect that these results will not only serve the interests of academia but even more those of project managers and the practitioners who contribute to the professional development of project managers, in particular human resource (HR) managers. As learning experiences and their developmental outcomes are likely to be context dependent, practitioners can draw on the descriptions of the actual developmental experiences of others and translate these to their own situation and the broader environment. This can stimulate learning and development through reflection.

In summary, we explore the formal and informal development of project managers by capturing the types of learning experiences that project managers perceive as having stimulated their own development. Before moving on to the details of the current study, we introduce the theoretical background from which we explore the development paths of project managers.

2. Theory

Learning is the process through which development occurs (Kolb, 1984). Experience plays a central role in this process of learning (Kolb, 1984). In order to uncover the development paths of project managers, we explore how and what project managers learn from their experiences. With respect to *how* project managers learn, the literature on learning and professional development distinguishes multiple avenues for learning and types of development. We will first discuss formal and informal learning and how the project context can be especially conducive to informal learning on the job. Secondly, we will discuss three different types of development (planned development, self-guided development, and innate development) and their likely relevance for the development of project managers. Moving on to *what* project managers learn, we discuss prescriptions of what project managers need to learn according to the literature, before we qualitatively explore what project managers actually learn in practice. Finally, again related to *how* project managers learn, we discuss how the development of project managers can be supported by others and through self-reflection.

2.1. Avenues of learning and types of development

2.1.1. Formal and informal learning

Different avenues for learning and development need to be taken into account in order to understand how project managers learn and develop. A clear distinction is made between learning on the job versus learning in the classroom, better known as informal versus formal learning.

Formal learning takes place within, or follows from, a formally organized learning program or event (Eraut, 2000). Examples of formal learning in project management are training and education related to project management certification, and undergraduate and postgraduate education with a significant project management component (Crawford et al., 2006). These programs often fall short in matching the complexity of project actuality (Crawford et al., 2006; Thomas & Mengel, 2008).

Informal learning involves learning both from others and from personal experience, and can take many different forms (Eraut, 2004). Examples of informal learning are mentoring, learning from complex problems, working above your grade, being forced to change perspectives, and being stimulated to reflect (Cheetham & Chivers, 2001). A significant part of professional development takes place outside formal educational and training contexts (Day et al., 2014; Eraut, 2004). In this sense practitioners can be seen as reflective inquirers, addressing the problems they encounter in their work through intertwined thought and action to develop new images and

activities (Argyris & Schön, 1978, 1996). In line with this reasoning, Crawford et al. (2006) argue that in developing project managers, the focus should shift from training technical skills mostly through formal learning programs, to reflective practice mostly through informal learning.

This focus on informal learning can involve both reflection on experiences and second-order reflexivity towards the underlying assumptions influencing how we make sense of our experiences (Cunliffe, 2002). Through self-reflection project managers can make sense of challenging and surprising experiences by considering their beliefs in light of these experiences and considering the implications of emerging insights for the future (Nesbit, 2012). Through second-order reflexivity project managers can open up new perspectives by questioning their ‘ways of being and understanding’ (Cunliffe, 2002, p. 42). As reflexive actors, project managers can develop a more complex understanding with multiple descriptions of a situation as they are aware of the role of their own ways of thinking and talking on reality (Tsoukas & Hatch, 2001).

The project context can be an especially conducive environment for informal learning on the job. Sense (2011) even suggests that projects can be seen as generative learning places for project teams to learn on the job in interaction with each other. However, idleness is a necessary condition for reflection and learning in project contexts (DeFilippi & Arthur, 1998). So, despite the potential of projects as learning spaces, the time pressure that comes with the temporary nature of projects can hinder learning in projects (Savelsbergh et al., 2012), as it can lead to limited or deferred reflection (Keegan & Turner, 2001; Schindler & Epler, 2003).

2.1.2. Planned, Self-guided, and Innate Development

Based on where the effort and approaches for development originated from, we distinguish three different *types* of development: planned development, self-guided development, and innate development. The first type, planned development, refers to the independent efforts and approaches taken by those who select, hire, and manage project managers and which are aimed at promoting effective and timely development of their project managers. According to Huemann et al. (2004), planned development of project managers comprises: (1) the determination of a project manager career path, (2) the specification of the minimum required competence levels at each level of the career path, (3) the management of the processes of recruiting, assigning, training, assessing, rewarding, promoting, and retaining project managers, and (4) the support and guidance of project managers on the job through feedback, mentoring and coaching, and empowering. Various researchers (e.g., Arto & Dietrich, 2004; Hauschildt et al., 2000; Hölzle, 2010; Papke-Shields et al., 2010; Quatro et al., 2007; Thoms & Pinto, 1999; Müller & Turner, 2007) have questioned the effectiveness—in the sense of effectively helping project managers to develop into mature professionals—of the planned development of project managers. The second type of development, i.e., self-guided development, refers to the independent efforts and approaches taken by project managers themselves, without (significant) interference or help by their managers and

employers, to promote their own professional development. In this self-directed process of development reflection plays an important role in turning experiences into learning events (Antonacopoulou, 2000, 2005). Knowing more about how project managers guide themselves in their development towards success and high professional standards may increase effective support for their self-guidance. The third type of development, i.e., innate development, refers to learning that evolves naturally despite all the good intentions or ambitions we have about the development of others or ourselves. This type of development concerns the autonomous development of project managers, irrespective of, or in the absence of, planned or self-guided development. To our knowledge, innate or spontaneous development of project managers has hardly been investigated.

In the current study, we explore to what extent learning experiences are encountered in a formal or an informal learning setting. In addition, we explore the type of development, planned, self-guided or innate, that is involved in the learning experiences of project managers.

2.2. What do project managers need to learn according to existing theory?

To be successful in their role, project managers have to develop a wide range of competencies. For example, Crawford (2005) distinguishes three categories of essential competencies of project managers, namely input, personal and output competencies.

A wide range of competencies can be classified as *input competencies*, i.e., the knowledge and skills that people bring to the job (Crawford, 2005). According to Katz and Allen (1985), for example, project managers are focused on integrating efforts to develop new products and have a short-term view, in contrast to functional managers who are focused on ensuring technical integrity and have a long-term view. More specifically, Sotiriou and Wittmer (2001) mention that project managers have to deal with both task and people-related aspects of projects. These responsibilities require a broad range of skills, such as human, conceptual, organizational, and technical skills (El-Sabaa, 2001; Madter et al., 2012). Fisher (2011) mentions understanding behavioral characteristics, leading and influencing others, conflict management, and cultural awareness as examples of skills that are perceived to be important for project management practitioners. And, in order to deal with the complexity inherent to project contexts, project managers need to be able to foster continuous change, reflect creatively and critically, cope with uncertainty and different perspectives, and increase self-knowledge (Thomas & Mengel, 2008).

One type of input competencies that especially project managers need, in order to progress their careers, is career competencies. In comparison with managerial positions in the permanent organization, project managers who have managed several projects may find themselves stuck into a position with few (or no) career paths or opportunities for development (Palm & Lindahl, 2015). Because project managers continuously move from project to project, it is of particular importance that

they shape their own career path in a project-based career. In doing so, they should not solely depend on others to provide them with developmental opportunities, but proactively look to find opportunities themselves (Jones & DeFillippi, 1996). These career competencies can be divided into know-why, embedded in their beliefs and identities, know-how, embedded in their skills and knowledge, and know-whom, resulting from their relationships and contacts (DeFillippi & Arthur, 1994). Part of the know-how that is especially important for project managers' successful career progression is being able to understand multiple disciplines (El-Sabaa, 2001).

The second category of essential competencies of project managers that Crawford (2005) discerns are *personal competencies* in terms of personality characteristics underlying someone's ability to do the job. The third category Crawford (2005) identifies refers to *output competencies* in the form of demonstrable performance. For example, developing a certain leadership style and exhibiting associated leadership behaviors can have an impact on relationships among project team members enhancing their teamwork, which is related to project performance (Yang et al., 2011).

In the current study, we explore what project managers have actually learned from their experiences throughout their career, as opposed to prescribing what they should learn.

2.3. Support for learning and development

In order to understand how and what project managers learn, it is also important to explore the support they have received in their development. Support is one of the most important factors influencing learning and development in the workplace (Eraut, 2004), as support and the challenges that can be created with this support have an impact on developmental experience (Day, 2000) and foster a learning goal climate (Van Velsor et al., 1998).

Support can come from other organizational members, such as managers and peers. This type of support has been found to be related to increased engagement in development activities (Noe & Wilk, 1993), higher training self-efficacy, learning goal orientation, and motivation to learn (Chiaburu et al., 2010). Specifically in the context of the development of project managers, the support of senior leaders, in the form of mentoring or coaching, has been identified as a factor related to the development and performance of project managers (Skipper & Bell, 2006). Others, from inside or outside the organization, can also play an important role in supporting the development of practitioners through enabling reflective inquiry leading them to see things in new ways and enact new behavior (Argyris & Schön, 1978, 1996). In addition, this support from others can be of importance in creating opportunities to take on challenging tasks. Generally, job assignments have been identified to be particularly helpful to managers in learning and development (McCall et al., 1988). In the specific context of project-based organizations, Huemann et al. (2007) assert that individual development is closely tied to opportunities to participate in new and fitting projects. Thus, social capital is assumed to be of particular importance in

opening up opportunities to join the right projects (DeFillippi & Arthur, 1998). Moreover, human capital and social capital can reinforce each other because people can show their skills to a wider network, then be invited to join new projects, and further develop new skills (DeFillippi & Arthur, 1998).

In the current study, we explore whether anyone, and if so who, has supported project managers in their development by facilitating the occurrence of their learning experiences and helping them to reflect upon those experiences. As to the question 'who facilitates project managers' learning from experiences?', we are especially interested in the impact of the HR manager and line manager in these learning experiences. After all, to some extent, they have a formal responsibility from their role to develop their employees. Moreover, they represent the formal support that the organization puts into the employee's development. Line managers have been claimed to impact on the development of their subordinates' development (e.g., Chiaburu et al., 2010; Noe & Wilk, 1993). In addition, the influence of HRM on the employee's development in project-based organizations has been studied by various academics (e.g., Hölzle, 2010; Huemann et al., 2004; Keegan & Turner, 2003). However, we know less about whether, and to what extent, project managers perceive support and facilitation along their development paths by their HR managers and line managers. Insights are lacking into how often or to what extent line managers and/or HR managers have an impact on the occurrence of, or the learning from, these learning experiences. Answers to these questions could help HR managers and line managers, as representatives responsible of their organization, decide where to point their attention in order to increase their impact on project managers' development.

In the current study, then, we explore the development paths of project managers in practice, through focusing on (1) the avenues of learning through experiences (formal or informal) and the type of learning (planned, self-guided or innate), (2) the content of their learning experiences, (3) who facilitated the occurrence of the learning experiences and/or the learning itself. The results of our analyses are used to form preliminary overall conclusions and propose directions for future research. Additionally, explicit recommendations for project managers and their line and HR managers will be provided, in order to enable them to more effectively stimulate the development of project managers.

3. Method

In this investigation, we explored the perspectives of project managers themselves to deepen our understanding of their learning experiences and development paths. We chose a descriptive approach (Blumberg, 2008) based on actuality in the world of projects that takes seriously the practitioner's lived experience, as Cicmil et al. (2006) call for. This descriptive approach of actual empirical phenomena has the potential to help us understand reality as it is perceived and experienced by people themselves. In our case the focus is on what project managers learned and how they learned it. Another characteristic of our approach is that we did not ask project managers to

describe their lessons learned, but we asked them to describe the experiences that made them think or act differently as project managers. By focusing on these experiences, we aimed to get more insight into not only what they learned but also how these lessons emerged. With this approach, we follow Morris's (2013) call for the use of interpretative epistemologies (Lee & Lings, 2008) in order to make the insights about what they learned and how they learned it more illustrative and valid.

In order to explore the development paths of project managers, we held 31 semi-structured interviews with project managers and conducted a short survey among the same group of respondents. The process of the interview was as follows. After a short introduction on the purpose and process of the investigation and some questions regarding their background and motivation, we started each interview by drawing a timeline from the beginning of their project manager's career up till the moment of the interview. We explained that we were curious about experiences that influenced their development as a project manager by making them think or act differently in their role as project manager, and, in addition, that we aim to gather at least six of these experiences in the interview. Then, we asked them to mark the first important learning experience on the timeline. Subsequently, we asked interviewees to describe what happened, in what way this experience influenced the way they think or act as a project manager, how it influenced their development, how the experience occurred, who or what contributed to them being able to learn from it, and if they were prepared for it. We repeatedly asked them to come up with learning experiences until we arrived at six experiences at least. After that, we asked several questions to get more insight into the role of their line manager, human resources manager or other colleagues on the occurrence or drawing lessons from the most important experiences. We ended the interview asking about their developmental aspirations, to get more insight into what they would like to develop themselves in the future and how they intended to manage this development. All interviews were conducted in face-to-face settings. Each interview was recorded with permission of the interviewee and transcribed verbatim. When necessary for publication purposes, Dutch quotes have been translated into English.

After the interviews with the project managers were conducted, a short survey was sent to all of them to collect some additional data. With the surveys we intended to further elaborate on the interview data by getting more insight into the ways in which the development of project managers is stimulated or hindered. We asked questions regarding the types of guidance they perceived as helpful in their development, the types of guidance they missed themselves and the factors that hindered them or impeded their development. All interviewees filled out the complete survey.

The project managers interviewed came from the Netherlands or the UK. The language used during the interviews was the project manager's native language. The majority of the project managers interviewed was sampled from two main sectors in project-oriented organizing, namely the building, construction, and infrastructure sector (BCI, 48%) and the

information and communication technology sector (ICT, 32%). The remaining 20% was sampled from other sectors. Of these interviewees 68% were male with an average age of 43 years, and an average working experience of 19 years (see Table 1 for more information on the sample).

All interview transcripts were uploaded into Dedoose, a web-based qualitative/mixed methods software application. This software enabled us to collaboratively analyze the interviews (Lieber, 2009). Codes were developed both deductively from the literature, and inductively from the interview transcripts. After initial coding of an interview by one researcher, another researcher checked the full coding of the interview transcript leading to in-depth discussions among the researchers about the analysis of each interview and evolving understanding of the development paths of the project managers. Whenever necessary, issues were discussed among the whole research team leading to further development of the coding scheme. Each change in the coding scheme was implemented by the original coder of previously coded interviews. In addition to this in-depth process of coding each interview, interviews were also analyzed more holistically as whole pieces of text to gain a broader perspective on the development paths of project managers than the insights derived from the more detail focused coding process.

4. Results

4.1. How do project managers learn from their learning experiences?

We analyzed how project managers learn from their learning experiences by focusing on the avenues through which they learn, i.e., formal or informal learning, and the type of learning, i.e., planned, self-guided or innate (see Table 2). Our results show that the vast majority of mentioned learning experiences concerned informal on-the-job learning experiences, and most learning from experiences occurred more or less accidentally from innate learning experiences.

4.2. What do project managers learn from their experiences and when?

Analyzing the specific content areas of the learning experiences mentioned by the project managers, our results show that interpersonal skills, the role of the project manager, self-efficacy as a project manager and leadership, are indicated by the largest numbers of respondents as areas in which they learned from their learning experiences (see Table 3).

Besides insights into the specific content of learning from experiences, our results show that project managers learn about three main themes from their *first* learning experiences. First of all, they gain *insight into the practice of project management* (19 interviewees). By working on their project, they experienced what it is like to fulfill the role of project manager. This growing insight into practice took the form of getting to value the impact of people on the success of the project, experiencing that agreements are hardly ever clear for everyone, learning the value of a broad and multidisciplinary perspective on the

Table 1
Detailed sample characteristics.

No. of resp.	Age category	Gender	Years working as a project manager	Level of education	Industry
1	40–50 years	Female	longer than 10 years	other	BCI*
2	40–50 years	Male	longer than 10 years	University level	BCI
3	40–50 years	Male	longer than 10 years	University level	ICT**
4	30–40 years	Female	0–5 years	University level	other
5	30–40 years	Male	from 5 to 10 years	University level	BCI
6	40–50 years	Male	from 5 to 10 years	other	BCI
7	40–50 years	Male	from 5 to 10 years	College level (HBO)	BCI
8	40–50 years	Female	longer than 10 years	University level	BCI
9	30–40 years	Male	from 5 to 10 years	University level	BCI
10	50–65 years	Male	longer than 10 years	University level	ICT
11	40–50 years	Male	longer than 10 years	University level	ICT
12	30–40 years	Female	from 5 to 10 years	College level (HBO)	ICT
13	50–65 years	Male	from 5 to 10 years	University level	BCI
14	30–40 years	Male	0–5 years	other	other
15	50–65 years	Female	from 5 to 10 years	University level	other
16	30–40 years	Male	from 5 to 10 years	College level (HBO)	ICT
17	50–65 years	Male	from 5 to 10 years	University level	ICT
18	40–50 years	Male	0–5 years	University level	ICT
19	40–50 years	Male	from 5 to 10 years	University level	BCI
20	20–30 years	Male	0–5 years	other	other
21	30–40 years	Male	longer than 10 years	University level	BCI
22	50–65 years	Male	longer than 10 years	University level	ICT
23	30–40 years	Male	from 5 to 10 years	University level	BCI
24	40–50 years	Female	longer than 10 years	University level	BCI
25	50–65 years	Female	longer than 10 years	University level	ICT
26	30–40 years	Male	from 5 to 10 years	University level	BCI
27	40–50 years	Female	longer than 10 years	other	other
28	40–50 years	Female	longer than 10 years	other	other
29	20–30 years	Male	0–5 years	University level	BCI
30	40–50 years	Female	from 5 to 10 years	University level	BCI
31	40–50 years	Male	longer than 10 years	University level	ICT

*Building, Construction and Infrastructure sector.
**Information Communication Technology sector.

project, and communicating on different levels within and around the project. Two project managers illustrate this in the following quotes: ‘Totally changed the way I thought. Became less focused on stuff, and more focused on people.’, and ‘Gaining a perspective on the whole of that broad field. On the whole machine, instead of just your small component.’. Secondly, they gain *insight into themselves* (11 interviewees). Self-reflection led them to discover their interest and capabilities in project management, to learn how to intervene more quickly and trust their feelings, and to see that they demanded too much of themselves. Two project managers illustrate these lessons in the following quotes: ‘And the one thing that it has

Table 2
Avenues that learning experiences came by.

Avenues of learning	Mentioned by # of 31 respondents	Number of quotes
<i>Learning Route:</i>		
Formal learning	14	18
Informal learning	24	129
<i>Type of learning</i>		
Planned	19	43
Self-guided	20	51
Innate	29	138

taught me from an experience point of view is that perhaps sometimes something doesn’t feel right, it isn’t.’, and ‘then I thought “I want to do that [be a project manager] too”.’ Third and finally, a limited number of project managers gained *professional knowledge* (two interviewees) from their first learning experience in the form of project management courses and accreditation in their first learning experience. For

Table 3
Content of learning from experiences.

Content of learning	Mentioned by # of 31 respondents
Interpersonal skills	28
Role of the project manager	24
Self-efficacy in PM	23
Leadership	22
Project management governance	19
Project management tools	19
Business case/requirements	16
Intra personal skills	15
Structuring of the project	14
Program/Portfolio management	12
Implementation of PM standards	9
Process analysis	8
Teamwork	4
Other content	21

example, one project manager states: ‘I got a huge amount from that, but I learned it all from books, so I used to read books and then, you know, do my project plans and I did my best.’

Results from analyzing learning experiences *later* in the project managers’ career again show three main themes. First, project managers gain *self-efficacy* (14 interviewees) in their role as project manager, by learning to have faith in themselves by becoming more self-aware, resolute, and able to set limits as to what they accept from others. Second, they develop a *more people-oriented* way of thinking and acting (12 interviewees). This becomes visible in giving respect to other people, separating person from content, not seeing people as a means to an end, and acknowledging that other people can complement them in areas in which they are relatively weak. Third and finally, they gain a *broader view of their role* as a project manager (11 interviewees) by seeing the bigger picture, looking ahead, and structuring the project.

4.3. How is the development of project managers supported?

To explore support, we analyzed the interviews with project managers with a focus on the support they perceived concerning their development. We explored who facilitated the occurrence of at least one learning experience, as well as the facilitation of drawing lessons from the experience by exploring what happened, drawing conclusions and building new insights (see Table 4). Although project managers themselves often facilitated the occurrence of their learning experiences and the learning from them, the majority of our interviewees have also received some support from their line manager and others. It is remarkable that the HR manager seems to play such a small role in the perceived support for their development.

Regarding the question ‘Have you ever discussed the three most important learning experiences with someone responsible for your development, e.g. your line manager or HR manager?’, a small majority of the interviewees (17 out of 31) answered they never did, nine interviewees discussed these experiences with their line manager, three interviewees discussed them with a mentor or coach, and one interviewee mentioned he did discuss it, but did not specify with whom. Only one interviewee

discussed them with the HR manager. The limited level of discussion of these most important learning experiences with someone responsible for their development is interpreted by different interviewees in different ways. Some interviewees blame this lack of discussion on causes that come from within the organization, whereas others blame themselves, and some even indicated they did not see the value of talking about these key learning experiences. The following quotes illustrate these different perspectives respectively:

‘You have someone else every year. (...) They only have one interest, and that is that you are working for the client, and you will have to think for yourself how you do that and how you develop yourself further and how you keep your market value.’ (cause from within the organization)

‘I think that I didn’t clearly indicate at the beginning, like, this is how it has to be done. (...) I have always been too modest or too easy in enforcing, like, “now we have to talk about it, because I want to go here and there”.’ (blaming themselves)

‘I haven’t necessarily said, “And I learned this because at [my previous employer].” You know? That wouldn’t actually serve any purpose.’ (seeing no value in talking about their experiences)

From the additional survey we built a top three of guidance the respondents perceived as helpful in their development as a project manager, guidance they missed, and factors hindering their development as a project manager (see Table 5).

4.4. Project managers’ developmental aspirations

The interviews were also used to gain insights into the future plans of project managers. The most frequently mentioned future role the project managers in our sample aspire to is coaching other project managers (mentioned by nine project managers). In addition, while some project managers aspire to move away from projects and towards general management (six project managers), others aim to develop themselves further in the area of project management in the form of taking on the responsibility of bigger projects (five project managers), taking

Table 4
Support of development perceived by project managers.

	Mentioned by # of 31 respondents
<i>Who facilitated occurrence of learning experience?</i>	
Others such as clients	27
Line manager	26
Project manager him/herself	22
Human resource manager	2
<i>Who facilitated the learning from the experience?</i>	
Others such as other project managers, the project team, a facilitator, a mentor or members of their family	30
Project manager him/herself	22
Line manager	17
Human resource manager	4

Table 5
Factors helping or hindering their development as perceived by project managers.

	According to # of 31 respondents
<i>Top 3 of helpful guidance in development:</i>	
Regularly sharing experiences and insights with other project managers	22
Training in soft skills	22
Mentoring by a manager	21
<i>Top 3 of missed guidance in development:</i>	
Guided project evaluation or debriefing	11
Guided job rotation	11
Career counseling	11
<i>Top 3 of factors perceived as impeding or hindering development:</i>	
Unclear HR management policy regarding PM development	13
Limited choice of projects for next assignment	12
Too much politics surrounding projects	9

on portfolio management or program management roles (five project managers) or focusing more on the business impact of projects (four project managers).

5. Discussion

In this research we aimed to explore the development paths of project managers. We sought for descriptions of these development paths by focusing on lived learning experiences of project managers, rather than look for explanations or test assumptions that might exist. In so doing, we aimed to increase the validity of the insights into what they learned and how they learned it, and make them more illustrative and translatable to other contexts. The reasons for using descriptions were to seek two outcomes. First, based on these descriptions, we aimed to come up with suggestions for future research and trigger curiosity for the development of project managers in both the practitioners and the academic world. Second, we aimed to provide suggestions for project managers themselves, their line managers and HR managers when seeking to facilitate their development.

In the following, we first summarize our main findings concerning the development of project managers. Second, we discuss the theoretical implications of our results and offer suggestions for future research to address these implications. Third, we explore the limitations of the current study and how these can be addressed in future research. Fourth, we offer some suggestions that can inform efforts to stimulate the pace and quality of the development of project managers in practice. Finally, we end our discussion with some concluding remarks.

5.1. Conclusion: What and how project managers learn from their experiences

Project managers mainly appear to learn through the informal avenue of on-the-job learning. Self-reflection complemented with reflection with others and in particular with the line manager plays an important role in drawing lessons from these on-the-job learning opportunities. The learning experiences project managers mention are in most cases not planned for the purpose of development of the project manager; however, they appear to yield innate learning gains. The data also showed that project managers tend to learn about different themes from their first learning experience as a project manager, compared with what they learn from later learning experiences. From their first learning experience, project managers tend to gain some *insight into practice*, i.e., seeing for themselves how broad the role can be, and to gain *self-insight*, i.e., finding out that they enjoy project management work. From later learning experiences project managers tend to gain *self-efficacy*, i.e., learning to have faith in themselves as project managers, become *more people-oriented*, i.e., respecting and acknowledging others in their work, and develop a *broader view of their role*, i.e., seeing it in a bigger picture and looking ahead. These observations suggest that the developmental phase of project managers might have an impact on what they learn from a certain type of

experience. However, further research is needed to draw conclusions.

In general, all project managers in our sample learn both hard and soft skills from their experiences. Hard skills refer to topics like project governance and tools. Soft skills refer to topics like interpersonal skills, leadership and teamwork. Experiences concerning professional knowledge gained through courses and accreditation did not seem to play a major role in the development of project managers from their own perspective.

As for who and what influenced the development of project managers, the HR manager is rarely mentioned as facilitator of learning from experiences or the development of project managers. Line managers seem to influence the development of project managers when it comes to the occurrence of learning experiences, but they less often facilitate the learning from these experiences. Moreover, project managers perceive that they themselves have less impact on the occurrence of learning experiences, but they seem to have a large impact on drawing lessons from these experiences, both by themselves or with others, such as colleagues. Only a small majority of the project managers have taken the time and effort to discuss their most important learning experiences with someone responsible for their development, which suggests that reflecting on their own development is not yet a routine. However, in contrast with this lack of reflection on their own development, the most popular developmental aspiration for the project managers in our sample is coaching other project managers, pointing to a wish to help others advance.

5.2. Theoretical implications and suggestions for future research

Although our observations are based on a limited sample size (interviews and surveys among 31 project managers), the emerging theoretical contributions of the current study should be stressed. We will discuss the match between actual development and formal career steps, the current quality and pace of the development paths, the implications for interventions targeted at learning and development, and the importance of reflection.

First, our findings show that a significant part of the development of project managers takes place outside formal learning contexts, which is in line with other scholars with regard to general professional development (e.g., Day et al., 2014; Eraut, 2004). This is also in line with previous findings revealing that top performing project managers emphasize observing others, mentoring and coaching as key to developing their leadership skills, next to reading and self-study (Skipper & Bell, 2006). This development path of project managers as perceived in practice seems not aligned with their more formal career paths, as our results show that the former is largely based on informal learning, while the latter is often based on accomplishments in formal learning programs aimed at accreditation as a project manager. This focus on formal learning can potentially draw attention away from crucial

informal learning experiences. Future research is needed to further examine this reasoning.

Second, we find that in addition to learning being mainly informal, it is mostly innate. Thus, the development of project managers seems to be mainly shaped by accidental situations, and because of that it can be questioned whether the quality and pace of the development paths of project managers are currently reaching their potential. Fully planning the development paths of project managers would imply the ability to know exactly what has to be learned in order to be successful in complex and ever changing environments, and to know how this can best be learned by a diverse group of people in widely varying environments, which does not seem realistic. However, a more proactive and reflexive approach to the informal learning experiences that mainly seem to pave the development paths of project managers could potentially enable development of higher quality and/or pace. Future research is needed to further examine this reasoning, and the search for answers on questions like ‘can a proactive and reflexive routine for learning from informal on-the-job experiences enable the quality and/or pace of project managers’ development paths?’.

Another implication of the fact that our results indicate that most project managers’ learning occurs in informal situations on the job, is that interventions targeting learning and development in these situations will likely have effect on the pace and quality of development of project managers. Such interventions aimed at stimulating learning from experiences on the job may spur learning experiences that are currently fully innate to become somewhat more guided and planned. Additional research is needed to further examine this reasoning, and shed light on questions like ‘Can learning experiences that currently occur by accident be facilitated, or even planned to occur?’

Finally, our results indicate that reflection, both individually and collectively, plays an important role in drawing lessons from experiences (see Table 4). However, this reflection often seems limited and reflecting on important learning experiences together with someone responsible for your development is not embedded in the routines of project managers (see Table 4 and the text underneath Table 4). These results empirically support recent calls to accept reflexivity more widely as an important managerial capability in projects (Elbanna, 2015), to stimulate project managers towards reflective practice (Crawford et al., 2006), and to teach project actors to reflect on their own thinking when addressing emerging problems (Lalonde, Bourgault & Findeli, 2012). Future research can address how reflection in project contexts can be effectively stimulated, for example by coaching on the job or setting the stage for a culture conducive to questioning and reflection.

5.3. Limitations and additional suggestions for future research

Reflecting on the approach of our investigation, we would like others to profit from our experiences and suggestions for future research. First, we did a quasi-longitudinal investigation by making project managers reflect on their development until now. Using this approach, dependency on people’s memory is

high. In some cases project managers had to look back for 25 years, which may cause the loss of important details about their experiences. For future research, we recommend a real longitudinal approach, wherein the investigator follows project managers over a longer period to discover what they learn, how and when. Such a study could also include data on the specific project stages in which the learning experiences occurred. With this approach insights could be gained into how the development from one experience influences the development from subsequent experiences, and how learning from an experience depends upon other experiences (aiming to explore a potential sequence of learning from experiences). Second, in our research we focused on experienced project managers in the Netherlands and UK within the ICT and Building and Construction industry. To assess the transferability of our results to other contexts, future research could explore the development paths of project managers from a wider range of career stages, age, cultural background and industries. Finally, in our study we focused on the perspective of project managers themselves. We suggest that in a further study, project managers and their line manager and HRM manager would be interviewed. In such an investigation, one might gain more insights into each of their expectations of the development of the project manager within an organizational context.

5.4. Practical implications

Without neglecting the explorative character of our study based on a limited sample, it cautiously points to several implications for practice. In the following, we come up with several suggestions in order to develop a more proactive and reflexive approach to the development of project managers, especially with regard to informal learning on-the-job. These suggestions cover both *creating informal learning experiences*, e.g., by project assignment based on learning opportunities, and *facilitating reflection* on these experiences to stimulate learning from these situations, e.g., by building a culture conducive to questioning and reflection among colleagues.

5.4.1. Creating informal learning experiences

As our results not only indicate the importance of informal learning experiences in the development of project managers, but also that these experiences occur largely by accident (see Section 4.1), we suggest that aiming to create fitting informal learning experiences could have the potential to improve the quality and pace of development. Line managers could assign project managers to projects partly based on deliberate developmental goals, as opposed to focusing purely on availability and proven skills, in order to stimulate the occurrence of just-in-time learning opportunities. By discussing the tradeoffs between smooth project delivery and project managers’ development, HR managers can potentially play an important role in advancing a more long-term orientation on the development of project managers with their line managers. This role of HR could be especially important in organizations where a formal career system focused on formal learning experiences is in place, as this system, together with the time

pressure inherent in project work, can make it tough for project managers and their line managers to consciously create informal learning experiences.

5.4.2. Facilitating reflection

In our sample, the lessons drawn from experiences mainly emerged through self-reflection or reflecting with others (see Table 4), and some of the most important guidance project managers received or missed are methods that stimulate reflection (see Table 5). Therefore it seems important not only to create learning experiences, but also to facilitate individual and collective reflection processes in order to enhance the quality and pace of the development paths of project managers. Through processes such as coaching, project debriefing, and action research, project managers can be facilitated to continuously and consciously learn from their experiences (Gray, 2007; Kakabadse & Kakabadse, 2003; Schindler & Eppler, 2003). For example, Schindler and Eppler (2003) specifically recommend ongoing collective analysis in a systematic way to stimulate learning from project experiences. By facilitating reflection, project managers can also be stimulated to go beyond reflection on their experiences and become more reflexive towards their own ways of making sense and how this shapes their reality (Cunliffe, 2002; Tsoukas & Hatch, 2001).

In line with the above, we argue that some systematic process of analysis and reflection could help project managers select deliberate developmental goals for each of their projects, evaluate which new insights they aim for and which they gained, and make them explicit to themselves and others. For example, project managers could join a project managers' community within their company to learn and exchange experiences and insights with others, and develop new project management knowledge. Additionally, line managers could create a regular habit of 'collective reflection' and use incidents as triggers for learning. Debriefing a project with project managers not only based on project results and processes, but also on personal lessons learned could potentially stimulate further individual and collective learning.

5.5. Concluding remarks

Our research on the development paths of project managers has highlighted the prominence of informal and innate learning experiences in practice. This calls for continued exploration of the role of informal learning experiences in professional development and their potential to be more consciously created and reflexively dealt with. We hope the current study inspires further discussion and experimentation that can benefit the development of project managers.

Conflict of interest

The authors do not have any conflicts of interest to declare.

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