

**Associations between workplace learning patterns, social support and
perceived competency**

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ABSTRACT

Despite substantial research in the field of workplace learning and training over the past three decades, these concepts are heavily under-researched in relation to the public sector. By means of survey data, this study explores the use of various learning patterns in the Norwegian Labour and Welfare Administration, their association with self-reported competency and the possible interacting role of social support. Descriptive statistics revealed informal guidance to be the most frequently utilised training method, while continuing education at college/university was rated as the least frequently used learning pattern.

Paradoxically, multivariate regression analysis indicated that the learning pattern most frequently used had the weakest association with self-reported competency.

Despite being one of the least used learning patterns, workplace courses demonstrated the strongest association with self-reported competency. Further multivariate regression analysis was used to explore the interacting role of social support in terms of peer and supervisor support. Results indicated a stronger association between three of the learning patterns and perceived competency for those who experienced higher degrees of supervisor support.

Keywords: workplace learning, learning patterns, formal learning, informal learning, perceived competency

Introduction

Despite substantial theorising on the concept of workplace learning, scholars have noted a lack of empirical research underpinning theoretical assumptions, especially in relation to the public sector, with its highly educated and skilled professional workers (Rashman, Withers, and Hartley 2009; Visser and van der Togt 2016). A significant majority of the scholarly literature and studies undertaken in this field tend to be characterised by over-reliance on the private sector as the primary source of theoretical understanding. However, private and public organisations differ substantially on several dimensions. As opposed to the commercial sector, it is argued that employees in public-sector organisations, especially in human service organisations, are often allowed considerable autonomy in relation to making decisions about how their work is to be prioritised and organised. They often receive minimal feedback from supervisors and peers. In addition, because of decreasing resources, they often find themselves in increasingly stressful and highly politicised working environments (Clarke 2002). Whereas motivation for organisational learning in the public sector is derived primarily from the need to enhance accountability and the production of public values, other, more profit-related drivers foster organisational learning in the private sector (Child 2003; Marshall, Smith, and Buxton 2009). Private organisations generally work under market conditions in which profit and expenditure figures constitute a set of relatively straightforward indicators for workplace learning (Visser and van der Togt 2016). In contrast, public organisations are often constrained by ever changing political goals and tensions, bureaucratic conditions and annual budgets, constituting complex and ambiguous indicators guiding learning (Rashman, Withers, and Hartley 2009). Overall, these differences are assumed to limit the transferability of research across the sectorial divide.

On these grounds, it has been proposed that public organisations constitute a distinct context for investigating workplace learning and training and thus should be researched independently. Motivated by the need for more evidence, the present study aims to enhance the understanding of the links between learning patterns, workplace social support and perceived competency in a human service organisation, namely the Norwegian Labour and Welfare Administration (NAV).

Frontline workers in the welfare sector have a mandate to deliver social and employment services to the public. For the welfare state to be sustainable, it is crucial that these workers develop the wide spectrum of competencies needed to fulfil their obligations towards the public. Adaptation to frequent changes in the work environment requires the continual improvement of knowledge and the development of new skills. In achieving these objectives, workplace learning becomes an important aspect of organisational life.

This study sought to determine the relative frequency of the various learning patterns utilised in the NAV, clarify the relative associations between each learning pattern and self-reported competency, and investigate whether these relations are contingent upon social support.

Formal and informal learning

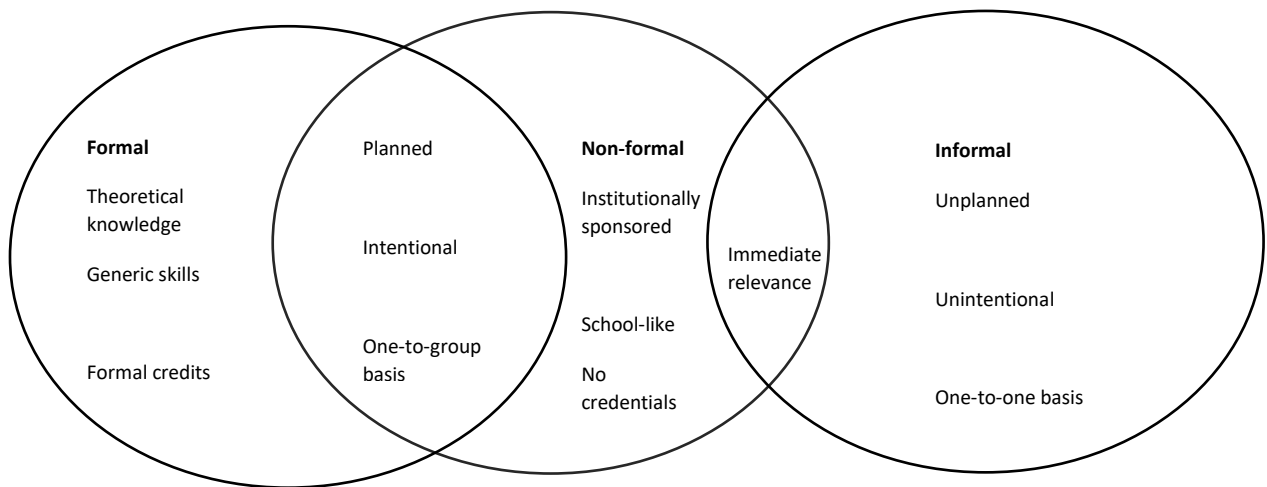
Scholars have attempted to categorise types of learning and training from various disciplinary perspectives. The most common categorisation is the distinction between formal and informal learning (Manuti et al. 2015; Crouse, Doyle, and Young 2011). Formal learning, which is conceptualised as the ‘standard paradigm’ (Beckett and Hager 2002) and also represents a parallel to Sfard’s (1998) concept of the acquisition metaphor, is usually characterised as structured and organised learning events (e.g. courses or programmes) with an external

specification of outcomes and the presence of a designated teacher or trainer (Eraut 2000). The educational system is the ideal and typical setting for formal learning, and the learning activities are meant to generate explicit, generic knowledge and skills (Tynjälä 2008). However, as will be addressed below, elements of formal learning have also been incorporated into some learning activities in the workplace arena, which are typically known as ‘non-formal’ learning situations (Schugurensky 2000).

By contrast, informal training, which corresponds to Beckett and Hager’s (2002) ‘emerging paradigm’ concept and Sfard’s participation metaphor, is defined as mainly employee-initiated learning activities, involving the expenditure of cognitive, physical and emotional effort, and resulting in the acquisition of professional knowledge and skills (Lohman 2005). Informal learning is usually unplanned, experiential, and produces primarily tacit knowledge. The recent expansion in scientific attention given to informal learning is likely due to the recognition that formal training alone cannot and does not provide all the knowledge and skills required in an organisation, on either community or individual levels (Jacobs and Park 2009).

As mentioned above, some scholars also use the concept of non-formal learning, which refers to all organised educational activities that take place outside the school system and thus does not lead to officially recognised degrees, credits or diplomas (e.g. Boeren 2011; Kyndt, Dochy, and Nijs 2009). Non-formal training usually involves instructor-led, institutionally sponsored programmes and courses (Marsick and Watkins 2001; Jacobs and Park 2009). This type of learning has features in common with both formal and informal learning patterns yet deviates from both in some respects (Figure 1). As Figure 1 demonstrates, there are reasons to believe that the commonalities between non-formal and formal learning are more salient than those between non-formal and informal learning.

Figure 1: Formal, non-formal and informal learning patterns



Typology of learning patterns

Although there is no universally accepted definition of the concept of workplace learning, Jacobs and Park’s conceptualisation of ‘the multiple ways through which employees learn in organizations’ (2009, 134) is frequently cited. This definition highlights the wide spectrum of learning patterns in workplaces and suggests that workplace learning is an amalgam of different types.

Beyond the gross distinction between formal and informal learning (sometimes also non-formal), there is common agreement among researchers and practitioners that employees may learn through a broad array of activities in the workplace (Gerber 1998; Hodkinson and Hodkinson 2004; Sterck 2004; Dimeff et al. 2009; Crouse, Doyle, and Young 2011; Govaerts and Baert 2011; Jones et al. 2013). Some attempts have been made to construct typologies of workplace learning patterns (Crouse, Doyle, and Young 2011). A learning pattern (also called training method or learning strategy) is defined as ‘a more or less sustainable and crystallized configuration of learning opportunities for the employees who perform the same type of work

in an organization and who belong to the same community-of-practice' (Sterck 2004, 132). This specific definition encompasses the range of formal learning activities as well as the conditions for informal learning (Govaerts and Baert 2011).

For the specific purpose of the present study, a six-fold learning pattern typology (Table 1) was constructed based on close collaboration with human resource development (HRD) experts in the NAV and, to a certain extent, in correspondence with previously constructed workplace learning typologies (e.g. Hodkinson and Hodkinson 2004; Govaerts and Baert 2011; Jones et al. 2013). These experts are senior advisors at the Directorate of Labour and Welfare, department of Research and Analysis, recruited strategically via the Director of the department. Their in-depth insights regarding learning patterns in the NAV offices were gathered and synthesised through interviews.

Table 1 shows each learning pattern categorised into formal, informal and non-formal learning types. Some of the learning patterns include both formal and informal aspects, though with a main emphasis on either.

Table 1. Categories of learning patterns

Learning pattern	Category	Typical activities
Workplace courses	Non-formal	Seminars, lectures (employer sponsored)
Self-learning	Informal and non-formal	Reading, completing e-learning modules
Team learning	Informal	Team meetings
Continuing education	Formal	Lectures/seminars in college/university
Informal guidance	Informal	One-on-one guidance (employee initiated)
Systematic guidance	Informal	One-on-one guidance (employer initiated)

Workplace courses

The learning pattern called workplace courses is considered to be an avenue of formal learning. However, because of some substantial and qualitative differences between this learning pattern and that of purely formal learning such as school learning, it appears analytically more accurate to categorise it within the realms of non-formal learning. It usually takes the form of short-term (1–2 day) seminars or lectures. This learning pattern is school-like in the sense that it is often planned, intentional, organised, teacher-/instructor-led and has clear learning objectives or learning outcomes. However, it differs from traditional school learning by its demolition of theoretical and generic knowledge, emphasis on practical experience and thus immediate relevance to the work setting and organisational tasks. In this sense, it also has clear similarities to informal learning patterns. In summary, the learning pattern of workplace courses appears to offer the ‘best of both worlds’, although as Figure 1 demonstrates, it has more commonalities with formal learning patterns.

Team learning

Employees may learn through collaboration in teams, which most prominently takes the form of discussions of various real-life working cases or problems. This typically involves employer-initiated activities such as team meetings and guidance achieved as a result of teamwork. In the literature on team learning, the focus has been on learning occurring by giving and receiving feedback, sharing information and team reflexivity (De Dreu 2007; Edmondson, Bohmer, and Pisano 2001; Savelsbergh, Storm, and Kuipers 2008; Zellmer-Bruhn and Gibson 2006).

Continuing education

The continuing education learning pattern usually involves an employee with some basic

education undertaking part-time college/university courses that are relevant to their specific role. It has been suggested that the higher education sector as a provider of learning opportunities plays a substantial role in workplace learning and workforce development (Lester and Costley 2010). In this respect, higher education institutions are expected to provide a two-fold advantage for the workforce. On the one hand, continuing education is supposed to provide updated knowledge and skills that are relevant at a practical level. On the other hand, these courses/programmes are expected to engender high-level learning supporting individual employees as self-directed learners and self-managing practitioners (Lester and Costley 2010). Nevertheless, the challenging connection between acquired knowledge in higher education and perceived competency in the work field is well documented (e.g. Knight 2006; Heggen 2008).

Informal guidance

The informal guidance learning pattern typically involves one-on-one-based, unorganised and trainee-initiated guidance. The literature often refers to this learning pattern as ‘sitting by Nelly’ (Stroud and Fairbrother 2008) and thereby implies a one-on-one interaction setting. The unplanned nature of this learning pattern usually implies that the ‘trainer’ is not necessarily quality assured with respect to pedagogical and professional expertise. Rather, the consultation is based on convenience aspects such as physical proximity.

Systematic guidance

Although closely resembling informal guidance, systematic guidance differs in that it is planned and more structured. It is often referred to as structured on-the-job training (S-OJT) in the literature and is considered ideal by some researchers for developing specific skills that are needed in the job (Huang and Jao 2016). Like informal guidance, this learning pattern

typically involves one-on-one mentoring by an experienced employee, for a less skilled or novice employee (Noe 2013).

Self-learning

Self-learning, also referred to as heutagogy (Blaschke 2012) or self-directed learning, involves activities such as reading, completing e-learning programmes, and trial and error. This learning pattern is considered informal because of its unorganised and unplanned nature. Nevertheless, it deviates from other informal learning patterns in that it is exclusively independent and therefore lacks the social components present within other learning patterns. Moreover, some self-learning activities such as e-learning programmes bear closer resemblance to non-formal learning patterns due to its inherent intentionality with distinct learning objectives. Accordingly, categorizing self-learning is less straightforward than other learning patterns.

Associations between learning patterns and learning outcomes

Despite substantial emphasis on informal types of learning in recent decades, there are some warnings against exclusive reliance upon them in the workplace. While both formal and informal learning are widely accepted as equally important elements of workplace learning (Tynjälä 2008), some scholars have further argued that informal learning alone is not sufficient to promote all the competencies needed in workplaces (Slotte, Tynjälä, and Hytönen 2004). Three reasons have been suggested for this claim. First, because informal learning mainly occurs in the absence of conscious effort and produces tacit knowledge, it may result in undesirable outcomes, such as bad habits and dysfunctional practices. Second, informal learning is not very well suited for keeping pace with the rapidly changing requirements for new knowledge and skills. Finally, formal training is an important

prerequisite for the exploitation of informal training. Based on these assumptions, Tynjälä (2008) suggests that workplace learning should adopt certain features of formal school learning, including intentionality, structured support and guidance, and explication of knowledge. This suggestion implies more extensive use of non-formal learning patterns.

Despite efforts to categorise patterns of training in the workplace, there is a lack of sufficient empirical evidence of the relative effectiveness of the various types of workplace training (Jones et al. 2013). Nevertheless, some research on the links between learning pattern and workplace effectiveness exists. It should be kept in mind that some of these studies are not conducted in the context of a public organisation and thus the cross-sectorial generalisability may be questioned. However, because it is closely related to the topic of inquiry for the present study, a brief review of this research is warranted.

In a recent study comparing the influences of S-OJT and classroom training, it was found that S-OJT was more influential on learning motivation and learning performance (Huang and Jao 2016). The authors connect this finding to the inherent elements of S-OJT, such as one-on-one interaction and behaviour modelling, and argue that these elements may raise self-efficacy to improve skill development.

In another study based on types of learning activities in small and medium-sized enterprises, the impact of different training methods on business performance was evaluated (Jones et al 2013). The authors conclude that both informal and formal types of training were associated with business performance. However, in contrast to the informal types of learning, several of the formal types were weakly related to outcomes. More specifically, it was found that informal training approaches, such as somebody within the workplace providing training, learning by doing and in-house training by staff, were most strongly and positively associated with improved business performance (Jones et al. 2013). Conversely, methods such as a

government programme and learning through a local college were identified as not contributing to improved business performance. The authors conclude that a combination of formal and informal learning results in the best business performance.

Another study found that in comparison with informal training types, formal training methods were more strongly associated with improved work performance (Jayawarna, Macpherson, and Wilson 2007). In contrast, Kotey and Folker (2007) argued that informal types of training methods are more effective because of their inherently flexible nature. In a meta-analysis of training methods, Arthur et al. (2003) noted that, among various learning patterns, lectures were found to be the most positively related to learning outcomes across skill and task types.

This research field is evidently still in its infancy and as demonstrated above, conflicting research findings have led to a blurred picture regarding the links between learning patterns and learning outcomes. Also, due to the complex nature of workplace learning, it has been suggested that a number of environmental factors, such as social support, might have an impact on the effectiveness of training (Ford, 2014).

Social support

Workplace learning does not occur in a social vacuum (Gerber 1998; Matthews 1999). Thus, within the research field of training it is widely acknowledged that there are a number of work environment factors upon which the effectiveness of training is contingent (Baldwin and Ford 1988; Clarke 2002; Ford 2014). Hence, attempts have been made to construct theoretical frameworks to capture the training transfer process. For example, within their theoretical model of transfer of training, Baldwin and Ford (1988) proposed that social support is one of the dimensions of work environment factors affecting the training transfer. This theory has

subsequently cultivated ample research attempting to empirically determine the role of these key dimensions in workplace training.

The findings from these studies are mixed and somewhat contradictory. Although some studies investigating the role of social support in the workplace fail to find positive results for the effect of social support in the transfer of training (Facteau et al. 1995; Van der Klink, Gielen, and Nauta 2001), most studies have demonstrated a significant role of social support, and particularly supervisor support (e.g. Rouiller and Goldstein 1993; Tracey et al. 1995; Seyler et al. 1998; Lim and Johnson 2002). For example, in a study of HRD professionals in Korea, Lim and Johnson (2002) found that supervisory support significantly influenced learning transfer. In a similar vein, Clarke (2002) found that social support was closely related to the transfer of training in a human service agency in the UK. In another study (Chiaburu, Van Dam, and Hutchins 2010), it was found that social support affected training self-efficacy and trainees' motivation to transfer.

In a more recent study, supervisor support yielded a strong, indirect relationship (via organisational incentives) with training outcomes (Dermol and Cater 2013). However, Facteau et al.'s (1995) study demonstrated negative effects of supervisor support on transfer. A review article addressing the relations between supervisor support and transfer (Ghosh, Chauhan, and Rai 2015) acknowledged the conflicting findings in the literature as outlined above. The authors argued that when supervisor support has been found to be positively associated with transfer, either directly or indirectly, enhanced motivation in the trainee is the primary explanation.

These conflicting results on the role of social support provide an unclear picture and therefore, further research is needed to understand the effects of social support.

The Norwegian Labour and Welfare Administration

With a total of about 19,000 employees and in possession of one-third of the state budget, the NAV is considered the core of the welfare state and by far one of the largest public-sector workplaces in Norway (Ekspertgruppen 2015). The administration is divided into several levels and units, with one office in each of the approximately 450 municipalities in the country. The organisation as a whole has a clearly pronounced ambition of being a learning organisation (Bay et al. 2015). Thus, comprehensive focus has been placed on skill-enhancing measures (Ekspertgruppen 2015). However, because it is an under-researched field, little is known about the value and effects of various skill-enhancing methods.

Methods

Data and sample

This study was designed as a cross-sectional survey of employees at the NAV. In total, 1753 employees (64% response rate) completed a web-based survey encompassing a wide range of items and measures, including their self-reported competency, the types of learning patterns they had been exposed to, the rate of perceived reception of peer and supervisor support, and demographic information such as age and gender. The sample consisted of 302 men (18%) and 1351 women (82%). The age range was 23–70 years. Fifteen per cent reported having a master's degree and 56% reported a bachelor's degree as their highest qualification. The rest of the sample reported having attended either higher education without a completed degree or upper secondary school. Approximately one-third of the sample had a social work qualification (either bachelor's or master's). The other major educational backgrounds reported were social sciences (28%), economics/administration (26%), law (10%) and health (9%). In terms of seniority, 20.4% of the sample reported having worked at the NAV for less

than two years, while the majority (79.6%) had worked there two or more years.

Measures

Perceived Competency

Perceived competency was measured using 12 items (Table 2). The items were developed in close consultation with experts in the NAV and are considered to cover the entire competency spectrum in the workplace. Respondents were asked to consider the following: ‘to what extent have you acquired knowledge and competency in these areas at the NAV’ in relation to the items in Table 1, and to score themselves on a Likert scale ranging from 1 (not at all) to 5 (to a very high degree). The scale demonstrated satisfactory internal consistency (Cronbach’s $\alpha = .90$). Prior to the multivariate regression analysis, a mean sum score of all competency items was calculated.

Table 2. Competency items.

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1. Knowledge about laws and regulations
 2. Knowledge about local labour market
 3. Knowledge on means and measures
 4. Competency in labour-market-oriented user follow-up
 5. Ability to work under pressure
 6. Competency to handle conflictual situations with users
 7. Written communication skills
 8. Competency to communicate with users
 9. Digital competency
 10. Competency to make decisions
 11. Competency to guide and motivate users
 12. Ability to handle the emotional challenges of the work
-

The use of self-reported competency as the outcome variable might be questioned in terms of validity. How do we know whether self-reported competency in fact reflects actual competency? Whatever the answer to this question might be, self-reported competency can be conceptualised as a kind of self-efficacy in accordance with social learning theory (Bandura 1977). Based on the well-documented effects of self-efficacy on performance (Bandura 1977; Staikovic and Luthans 1998; Caprara et al. 2006; Judge and Bono 2001), it is argued that this variable may very well operate as the dependent variable in the specific context of exploration of the relationships between learning patterns and outcomes.

Learning patterns

Learning patterns were measured by six different items. Respondents were asked to consider the degree (1 = not at all, 5 = to a very high degree) to which their learning had occurred by means of the following items: (1) workplace courses and programmes directed by the employer, (2) continuous education in college/university, (3) systematic guidance by supervisor/colleague, (4) informal guidance by supervisor/colleague, (5) guidance in team/group meetings, and (6) self-learning through work. In close consultation with experts in this workplace, these learning patterns were identified as the most salient learning activities.

The cross-sectional design used in this study presents difficulties regarding the inference of causal relationships between study variables. Measuring learning patterns and perceived competency simultaneously implies that we cannot infer certain causal relationships. While the underlying assumption is that learning patterns affect perceived competency development, it could also be the case that those who perceive themselves to be more competent are offered or attracted to learning patterns that differ from those used by peers who are less confident in their own competence. Although this study explores the association between learning patterns and perceived competency, the ultimate goal is

nevertheless to clarify the relative efficiency of the various learning patterns. However, the insights obtained might operate as a starting point for forming and testing hypotheses in future research. Hence, future research should employ longitudinal studies to address the important issue of the efficiency of learning patterns.

One of the strengths of the present survey study is that, in contrast to similar studies (Crouse, Doyle, and Young 2011), it does not simply ask respondents to rank various learning patterns with regard to the potential efficiency of each. Rather, the respondents were asked to respond independently to the study variables, and the study seeks to understand the links between learning patterns and perceived competency by statistically analysing the relationships between them. This methodological notion is a strength in this context because people are often not very aware of how much and exactly what they have learned through a particular learning activity. This is especially the case with respect to informal learning patterns (Hodkinson and Hodkinson 2004).

Social support

Supervisor support was measured by one item in which respondents were asked to rate the claim: ‘when I need it, I can get support and assistance from my supervisor’ on a four-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree). Likewise, peer support was measured by the respondents rating the claim: ‘when I need it, I can get support and assistance in my work from my colleagues’ on the same scale.

Methodological procedures

Descriptive statistics (means and standard deviations) were calculated to explore the relative frequency of the various learning patterns. Further, multivariate regression analyses were

conducted to estimate the relative association between the independent variables and the dependent variable. Another 12 hierarchical regression analyses were performed to reveal any interaction effects between the independent variables of learning patterns and the dependent variable of self-reported competency. All analyses were undertaken using SPSS version 24.

Results

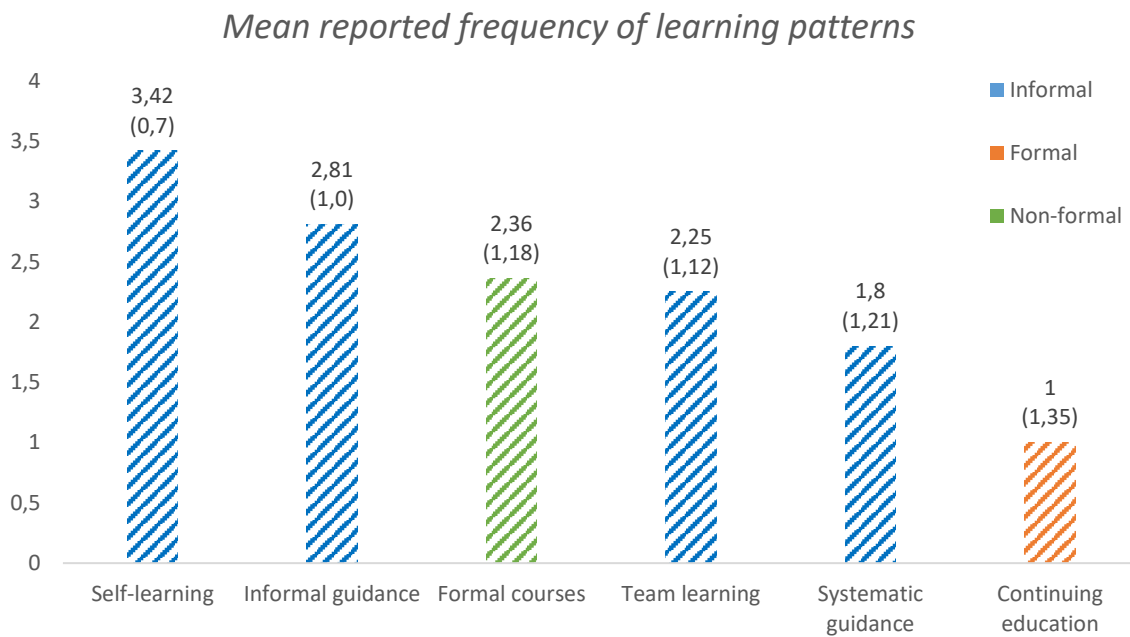
Relative frequency of learning pattern

The first question addressed in this study was the relative frequency of learning patterns. The descriptive statistics (Figure 2) showed that the learning pattern with the highest mean was self-learning ($M = 3.4$ on a scale from 0 to 4, $SD = 0.7$). The training method with the lowest mean was continuing education ($M = 1.0$, $SD = 1.3$). This means that there are major differences in the extent to which the various learning patterns are utilised in the workplace and that employees are, to a large extent, left to themselves to acquire the necessary knowledge and competencies. Although there is no clear pattern as to whether formal or informal types of learning are used the least or most, it is worth noting that the most frequently used learning pattern (informal guidance, $M = 2.8$, $SD = 1.0$) may be unambiguously sorted under informal types of learning.

Associations between learning patterns and perceived competency

The second study aim was to explore associations between learning patterns and perceived competency. As Table 3 shows, there are major differences in effect size. When all the other learning patterns were controlled for, the learning pattern most strongly and significantly associated with perceived competency was that of workplace courses ($\beta = .243$, $p < .01$).

Figure 2



Note. Standard deviations in parenthesis

Both systematic guidance and informal guidance were non-significant. Even when age, gender, length of experience and educational level were held constant, the significant associations between learning patterns and self-reported competency remained. However, some of the control variables (length of experience and gender) yielded significant associations with perceived competency and hence resulted in a slight increase in R^2 from model 1 to 2, meaning that the explanatory power of the model increased when control variables were included. Moreover, separate analysis with each control variable (not shown here) revealed that length of experience led to a suppressor effect of systematic guidance on perceived competency. This means that when we compare those who have an equal length of experience, more systematic guidance is associated with higher reported competency.

Table 3. Associations between learning patterns and competency with control variables: standardised coefficients.

Variables	Model 1	Model 2
Learning pattern		
Workplace courses	.243***	.238***
Self-learning	.182***	.165***
Team learning	.133***	.108***
Continuing education	.105***	.080***
Systematic guidance	.038	.066*
Informal guidance	-.020	-.018
Control variables		
Length of experience		.164***
Gender		-.122***
Age		-.043
Educational level		.032
R ²	.150***	.186***
Constant	1.9	2.3
N	1625	1620

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. Gender: lower score is female, higher score is male. For all other control variables: higher scores indicate higher levels.

The role of social support

The third research question was whether social support (supervisor and peer support) may have an interacting role in the association between learning patterns and perceived competency. As demonstrated in Table 4, there were no such significant effects of peer support. However, significant interaction effects were identified between supervisor support and workplace courses ($\beta = .199, p < .05$), supervisor support and systematic guidance ($\beta = .231, p < .05$), and supervisor support and informal guidance ($\beta = .320, p < .05$). These findings suggest that the relationships between each of the three above-mentioned learning patterns and perceived competency are significantly stronger for respondents who experience higher degrees of supervisor support than for those who experience lower degrees. In other words, those who experience a higher level of supervisor support have higher levels of

perceived competency in those three learning patterns. No significant interaction effect of supervisor support was found for self-learning, team learning and continuing education.

Table 4. Associations between learning patterns and competency with interaction effects.

	Supervisor support			Peer support		
	Learning pattern (L)	Support (S)	L*S	Learning pattern (L)	Support (S)	L*S
Formal course	.267***	.096***	.199*	.272***	.111***	.103
Self-learning	.187***	.135***	.007	.181***	.121***	-.028
Team learning	.193***	.095***	.068	.195***	.096***	.166
Continuing education	.115***	.137***	.123	.129***	.145***	.030
Systematic guidance	.126***	.104***	.231*	.132***	.108***	.241
Informal guidance	.081**	.121***	.320**	.077*	.114***	.216

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

Discussion

The most salient findings from the study will be discussed in the following sections.

Descriptive statistics revealed that there were differences in the use of the various learning patterns in the NAV workplace. Self-learning and informal guidance were the most frequently reported methods used to enhance knowledge and skills. This finding is consistent with previous studies indicating that a majority of workplace learning occurs informally (e.g. Cseh, Watkins, and Marsick 2000). Conversely, continuing education was found to be the

least frequently utilised learning pattern. These differences may stem from various reasons. First, we are not certain whether the observed differences in the extent of use of the different learning patterns was due to deliberate HRD strategies or random elections. However, some local studies have reported a general organisational attitude that the best way to learn is to get started and consult colleagues or a supervisor when uncertainties arise (e.g. Larsen, Voll, and Tysnes 2017).

Another possible explanation for the observed differences might be related to expenditure. Continuing education implies that the employee is taken away from everyday work production to receive training off-the-job. Moreover, although the Norwegian educational system is predominantly free of charge, most continuing educational programmes do in fact entail costs for the workplace. It has been suggested that in times of austerity (e.g. public expenditure cuts), the provision of training is often one of the first workplace casualties (Jewson, Feltstead, and Green 2015). On the other hand, it is relatively obvious that at first sight, the most cost-effective learning pattern is that of informal guidance which occurs in the workplace and thus does not require the removal of either the trainee or trainer from daily production.

A third possible explanation for this finding might be attitudinal factors. As previously mentioned, informal types of training have gained much scientific attention and been hailed as the training best suited for workplace learning. Studies have shown that, in general, informal learning patterns, such as working with others, are favoured over formal activities such as courses (Eraut 2004; Hicks et al. 2007). The findings of the present study suggest that the emphasis and strong reliance on informal types of training dominate the practical field of labour and welfare services.

Overall, the results demonstrate that, except for informal guidance, all the learning patterns were positively associated with self-reported competency. This finding is partly in line with other research that has reported general positive relationships between learning and learning outcomes (Reio and Wiswell 2000; Crouse, Doyle, and Young 2011).

The results revealed no clear indication as to whether the associations were stronger for the formal or the informal learning patterns; both formal and informal types of learning patterns were significantly associated with perceived competency. However, the strongest association was found for workplace educational courses. The only non-significant learning pattern was informal guidance, and systematic guidance, which was only significant after the control variables were included in the model, had the weakest association with perceived competency.

Compared with the other learning patterns, workplace courses explained more of the variance in the self-reported competency outcome variable. Although this result contradicts some previous research to various degrees (Kotey and Folker 2007; Huang and Jao 2016; Jones et al. 2013), it supports other research (Arthur Jr et al. 2003; Jayawarna, Macpherson, and Wilson 2007). This finding is particularly interesting in light of the reported frequency of this learning pattern; educational programmes arranged and sponsored by the workplace are utilised to a relatively low degree, yet are the most strongly associated with perceived competency.

This finding suggests that the most effective learning pattern is the one utilising strong features of formal school learning (e.g. intentionality, structure) as suggested by Tynjälä (2008). Explication of knowledge (i.e. transforming tacit knowledge into explicit knowledge) is assumed to be crucial for successful workplace learning in this view. This reasoning leads us to the plausible assumption that a learning pattern such as educational workplace courses

provides an expedient arena for the explication of knowledge and as such might serve as one possible explanation for the strong positive association found between this learning pattern and perceived competency.

The specific workplace of concern in the present study delivers services that require explicit knowledge to a greater extent than other workplaces and as such requires learning patterns that are capable of promoting such knowledge. Workplace courses have the capacity to provide new formalised knowledge, such as an introduction to a new amendment or practice, and ways to implement it in everyday work. The differences in results found in the present study and some previous studies (e.g. Jones et al. 2013) might be due to disparities between the private and public sectors, as previously discussed.

The expansive emphasis put on informal learning and its recently assumed superiority in workplaces might have relegated formal learning patterns to the shadows. The results suggest that over-reliance on some of the informal types of learning patterns (due to relatively high utilisation rates of informal guidance and a relatively low degree of formal and non-formal learning patterns) might be counterproductive, especially with respect to workforces expected to conduct cognitively demanding tasks.

Thus, the findings indicate that workplaces similar to the one used in this study should prioritise formal learning patterns. The continuing education learning pattern was also categorised as formal, and while significantly associated with perceived competency, the relationship was much weaker than that between workplace courses and perceived competency. Despite the many assumed common features between these two learning patterns, one major difference could serve as a plausible explanation for the differences in effect size found in this study. The two learning patterns differ in their provision of exclusively relevant and concrete generic knowledge and skills. Whereas higher education at

a university or college predominantly equips students with abstract, non-specific theoretical knowledge (e.g. Heggen 2008), workplace courses focus more on the generation of explicit workplace-specific knowledge and skills. With respect to the latter, it is the combination of explication of knowledge within structured learning frameworks and the highly relevant and workplace-specific content that, in essence, makes these courses well suited for workplace learning.

Self-learning was also significantly and relatively strongly related to perceived competency, which highlights the importance of independent workplace learning. This consistency with previous studies (e.g. Jones and Dexter 2014) was not particularly surprising. Modern technology, such as e-learning modules, Google searches and professional organisations' websites, allow for the extensive and ever-increasing use and efficiency of self-learning. Thus, it seems that organisations have much to gain in providing the time and framework for employees to independently extract learning from various self-reliant activities.

When controlled for the other learning patterns, informal guidance did not yield any significant relationship with perceived competency. These findings can be understood in light of arguments about the insufficiency of sole reliance on informal learning patterns (Slotte, Tynjälä, and Hytönen 2004) as previously outlined in this paper. The notion that learning does not always generate desirable outcomes has been demonstrated by Virtanen and Tynjälä (2008), among others. Their participants reported that along with positive learning, they had also learned some negative things, such as bad practices and how to shirk their duties. Furthermore, an important factor of the unintentional and unplanned learning patterns of informal guidance is that there is often a lack of quality assurance of the trainers' expertise; it is often unknown whether the trainer has the pedagogical and thematic competency necessary

for training others. It is therefore plausible to assume that the negative (or lack of positive) effects of learning could be over-represented within the uncontrolled realms of informal learning patterns and thus provide a possible explanation of the lack of significant relationship between this learning pattern and perceived competency.

In line with previous research documenting the powerful effects of learning in teams (e.g. Eraut 2004), the present study also revealed a relatively strong and significant association between this learning pattern and perceived competency. It has been argued that learning in groups may have a double loop effect (Marsick and Watkins 1990). On the one hand, groups learn by reflecting on their actions, and on the other, by reflecting on the goals on which they base their actions.

Another important finding from the present study was that of the interacting effect of supervisor support; those who experienced higher degrees of supervisor support reported significantly higher benefits of the specific training types of informal guidance, systematic guidance and educational programmes. It has been argued that supervisor support may lead to enhanced motivation to learn (Faction et al., 1995; Gregoire et al. 1998; Bhatti et al. 2013; Ghosh, Chauhan, and Rai 2015) and self-efficacy (Chiaburu et al. 2010), and could thereby improve learning outcomes.

The findings regarding support, consistent with those of other studies and theories, imply the paramount importance of social support in the workplace (Ellinger 2005; Ellinger and Cseh 2007; Kock 2007; Skule 2004) and suggest that it is an important prerequisite and facilitator for learning outcomes. As such, an organisation's management holds the key to the success of the organisation. This finding suggests that for learning to be successful in organisations, analysis and considerations must go beyond providing fruitful learning

patterns. To maximise learning transfer and outcomes, environmental factors, such as supervisor support, also merit attention.

Supervisor support showed significant interaction effects with only three of the six learning patterns, namely workplace courses, systematic guidance and informal guidance. With respect to the latter informal learning pattern, the study results demonstrate that supportive conditions for informal learning are crucial for desirable outcomes.¹

In contrast to supervisor support, there were no significant interaction effects for peer support, underlining the importance and the key role of supervisors' supportive behaviour towards employees and workplace learning. Nevertheless, it is not the author's intention to dismiss the importance of peer support. Indeed, other studies have succeeded in finding positive associations between peer support and competency development (e.g. Holton et al. 2003). However, the results of the present study suggest that the importance of supervisor support is superior to that of peer support.

Implications and conclusions

It was intended that the present study would improve understanding of the various learning patterns and their relations to perceived competency. Although the findings indicate that informal learning patterns are not significantly connected to perceived competency, it is not the intention of the author to undermine the importance and the potential of informal learning for influencing learning outcomes. However, with the findings of the present study as a backdrop, I do not consider the emerging overemphasis placed on informal learning to be very suitable to workplace learning. The results of the present study indicate that workplaces

¹ Informal guidance showed significant association with perceived competency only when supervisor support was included in the model.

should place more emphasis on non-formal learning patterns. However, further longitudinal research is necessary to determine the causal direction between learning patterns and competency. Moreover, to maximise the relationships between informal learning patterns and learning outcomes, more attention should be paid to the notion of supervisor support. More research is needed to gain a better understanding of the conditions and environmental factors facilitating successful informal learning patterns.

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