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The impact of values-job fit and age on work-related learning

Abstract. *Research shows that both individual and job-related factors influence a worker's work-related learning. This study combines these factors, examining the impact of fit between one's work values and job characteristics on learning. Although research indicates that fit benefits multiple work-related outcomes, little is known about the impact of fit on learning. Moreover, life span theories indicate that values evolve throughout the life span. Therefore, we examined how age influences work values and thereby work-related learning. Our self-report questionnaire was completed by 221 workers of various ages and occupations. Our findings indicate that work values, job characteristics and their fit influence the quantity and quality of work-related learning. Generally, a higher fit benefits learning, but misfit can also stimulate learning. Workers of different ages report an equal amount of learning, but perform different learning activities. However, this relationship is unrelated to work values. Recommendations for research and practice are discussed.*

Introduction

This study deals with an important trend on today's labour market, i.e. the importance of lifelong learning for workers, to remain up-to-date with the rapidly growing and changing society and economy throughout their (flexible) careers (Field, 2012; Kyndt and Baert, 2013; Patterson, 2001; Schmidt, 2007). Research has shown that both job characteristics and individual factors influence a worker's work-related learning (Billett, 2002; Poell et al., 2004). However, the impact of the 'fit' between the job and the worker on learning is rarely studied, although fit research has pointed out that this fit affects a wide range of work-related outcomes (other than learning). Therefore, we will examine the influences of job characteristics and their fit with a worker's work values on (both formal and informal) work-related learning. If it appears that this fit is related to learning, appropriate personnel selection, job design and job matching, as well as setting learning goals and objectives derived from this fit (or misfit), are called for.

In addition, scholars and policy makers have gained an interest in age effects on work-related outcomes (Truxillo, Cadiz, Rineer, Zaniboni, and Fraccaroli, 2012). A job's no longer for life (Patterson, 2001) and learning is no longer age-related (Field, 2012). However, the existing research on age differences in work-related learning is inconclusive. Therefore, we aim to study the influence of age on (both formal and informal) learning. In addition, since life span theories of development suggest that work values evolve throughout the life span, we will investigate age differences in work values as a possible explanation for age differences in (both formal and informal) work-related learning. If it appears that age-specific work values impact work-related learning, age-sensitive job design and L&D opportunities are required.

First, we will present a literature overview and our hypotheses, followed by a presentation of the executed research, to conclude with a discussion of the most important findings for research and practice.

1. Theory and hypotheses

1.1 Impact of job characteristics and values-job fit on work-related learning

Work-related learning is an important aspect of lifelong learning. Kyndt and Baert (2013) describe work-related learning as “the engagement in formal and informal learning activities both on and off the job, whereby workers and groups of workers acquire and/or improve competences (integrated knowledge, skills, and attitudes) that change individuals’ present and future professional achievement (and eventually also their career) and organizational performance” (p.275). Work-related learning includes a variety of learning activities, such as social/interactive types of learning (e.g., mentoring and coaching), and individual activities (e.g., experimentation and reading professional journals) (Hoekstra, Brekelmans, Beijgaard, and Korthagen, 2009; Lohman, 2009; Marsick, 2009; Noe, Tews, and Marand, 2013). More formal work-related learning activities include attending conferences and participating in courses and training (Akiba, 2012; Berg and Chyung, 2008).

The influence of job characteristics on work-related learning has been extensively studied. First, the learning potential of the job facilitates learning. This includes intrinsically challenging job characteristics such as variation and autonomy (Ellström, 2001; Kessels and Poell, 2004). Extrinsic stimuli, such as rewards and career opportunities, also enhance work-related learning (Ashton, 2004; Kraimer, Seibert,

Wayne, Liden, and Bravo, 2011). Finally, learning is influenced by affective job characteristics such as emotional satisfaction, support, trusting relationships and psychological safety (Egan, Yang, and Bartlett, 2004; Poell, van Dam, and van den Berg, 2004; Skule, 2004; van der Rijt, van de Wiel, Van den Bossche, Segers, and Gijselaers, 2012).

Increasingly however, learning is considered to be a process in which the worker and the job influence each other constantly (Billett, 2002; Poell and Van der Krogt, 2003). Kyndt and Baert (2013) consider work-related learning to be a complex decision process. Workers have their own views on what and how they wish to learn, possibly different from management (Poell et al., 2004). Lifelong learning is thereby considered as a personal process (Billett, 2010): workers choose whether or not to utilize the learning opportunities that are offered to them (Billett, 2001). In this regard, their personal goals, interests, self-image and biography are essential (Billett 2004). Learning is considered as an activity that can only be undertaken by the worker himself/herself; other actors (such as managers, HR-personnel) can only create the environment in which the worker learns (Poell and Van der Krogt, 2003).

Fit theories embrace these mutual influences of individual and job characteristics on a number of work-related outcomes. Fit is broadly defined in the literature as the compatibility between an individual and his environment, which is present when their characteristics are well matched (Kristof-Brown, Zimmerman, and Johnson, 2005). It is a multidimensional concept, consisting of the fit between person-job, person-organization, person-group and person-supervisor. Fit is often studied in relation to work motivation, job satisfaction, performance and engagement, and generally leads to positive outcomes (Edwards, 2008; Joo, 2010). Warr and Inceoglu (2012) however

found that although person-job fit (concerning values) improves job satisfaction, misfit results in more job involvement, since misfit stimulates attempts to develop skills or change jobs, in order to obtain more fit (Kristof-Brown et al., 2005). A very high degree of fit could therefore lead to conformity, passivity and diminished innovation and adaptability (Edwards, 2008). Felstead, Gallie, Green, and Inanc (2015) studied the fit between learning disposition (deep or surface learning) and learning environment (expansive or restrictive), and found that although misfit affects the job satisfaction of deep learners (since the environment does not live up to their expectations), expansive and restrictive environments were equally satisfying for surface learners. These studies indicate that fit effects are not as straightforward or linear as some other research suggests.

Although research on work-related learning stresses the importance of individual and job characteristics and their bilateral influences (Billett, 2002; Poell et al., 2004), the influence of ‘fit’ on work-related learning is rarely studied. Cho and Egan (2013) did find that person-organization fit in terms of values increases the motivation to transfer knowledge and skills from training programs to the job. This influence was found to be both direct and indirect, through the influence of job satisfaction. De Clercq, Bouckennooghe, Raja, and Matsyborska (2014) suggest that leaders and followers are more prone to provide access to their own knowledge base when they share similar goals.

In sum, research suggests that not only job characteristics impact a number of work-related outcomes, but that the fit between the job and the worker also plays an important role. Values-job fit, i.e. the fit between work values and job characteristics, is one aspect of person-job fit: the fit between what one values and what the job

provides (Perry, Dokko, Golom, Hedge, and Borman, 2012). Since job characteristics are known to have a substantial influence on work-related learning, we chose to study the impact of this specific type of fit on learning.

This brings us to our first hypotheses:

H1a: Job characteristics influence work-related learning.

H1b: The fit between job characteristics and work values influences work-related learning.

1.2 Impact of age on work values and on work-related learning

Work values are not static personal characteristics, however. ‘Life span theories of development’ in the work motivation literature state that changes occur in people’s values, goals, opinions and attitudes throughout the life span, caused by life experiences, evolving capacities and changes in expectations, opportunities and resources in the life environment (Baltes, Staudinger, and Lindenberger, 1999; Carstensen, 1995). Studies have shown that these values and motives evolve throughout the life span in a multi-directional manner. Age has been found to be positively related to motivation for generativity-related tasks (Hertel et al., 2013; Krumm, Grube, and Hertel, 2013b). These are ‘people tasks’; transferring knowledge, leading and helping people, caring for others and giving something back to society and future generations (Kanfer and Ackerman, 2004; Kooij, De Lange, Jansen, Kanfer, and Dikkers, 2011). Emotional satisfaction and fulfilment (affective values) and autonomy also gain more importance with age (Boumans, de Jong, and Janssen, 2011; Inceoglu, Segers, and Bartram, 2012). Extrinsic job factors are more valuable to younger workers, such as career opportunities, promotion and financial benefits

(Boumans et al., 2011; Hertel et al., 2013). Challenging jobs, mastery and competitiveness are also pursued more by younger workers (Kooij et al., 2011). Although people of different ages are motivated for social interactions, the goal of these interactions changes: the informative value of social interactions decreases with age, while the emotional value increases (Inceoglu et al., 2012; Kanfer and Ackerman, 2004). Job security and work-life balance are mostly valued by middle-aged workers, which is probably due to multiple role expectations and responsibilities at work and at home (Hertel et al., 2013). Age is negatively related to motivation for growth and learning-related tasks in most studies (Colquitt, LePine, and Noe, 2000; Kooij et al., 2011; Krumm, Grube, and Hertel, 2013a; Warr and Fay, 2001). De Lange et al. (2010) found a curvilinear effect: the middle age group (31-44 years) in their sample showed the greatest motivation to learn.

This possibly means that age differences in work values lead to age differences in work-related learning. In this regard, studies have found different age effects on learning, such as a positive relationship between age and (the preference for) informal learning, a negative relationship between age and formal learning, and a negative relationship between age and the diversity of performed learning activities (Livingstone, 2001; Pool, Poell, and ten Cate, 2013; van Rijn, Yang, and Sanders, 2013). A positive relationship has also been found between age and more independent types of learning (i.e. information gathering, including internet research and reading professional literature), while younger workers have been found to focus more on on-the-job training and coaching by their supervisors and colleagues (Berg and Chyung, 2008; Coetzer, 2007; Kyndt, Dochy, and Nijs, 2009). However, this research is inconclusive with other studies suggesting that older workers participate less in development activities in general (Maurer, 2001), or on the contrary that older

workers take part in a variety of daily learning activities, both on and off the job, and both formally and informally (Fuller and Unwin, 2005). Moreover, learning isn't always conceptualized in the same way in these studies (e.g., emphasis on formal or informal learning, and focus on learning activities, learning preferences, or learning conditions), and few explanations are offered for the observed effects (Berg and Chyung, 2008; Kyndt and Baert, 2013). Since more research on this topic is obviously needed, we studied age differences in work-related learning (both in the amount and type of learning), and age-related work values as a possible underlying explanation for age differences in work-related learning.

This brings us to our second hypothesis:

H2a: Age has an effect on work-related learning.

H2b: Work values are a mediating factor in the effect of age on work-related learning.

Our research model is visualized in figure 1.

** Insert figure 1 about here **

2. Methodology

2.1 Research design and sample

A quantitative survey research approach was chosen in order to study a large sample of workers of different ages and professions. Because this study was still partly exploratory, no limitations were formulated concerning type of profession. The questionnaire was distributed in three organizations and also online through e-mail

and social network websites. Participation was voluntary. 221 respondents completed the questionnaire. The average age of the respondents was 37.9 years. 30.6% of the respondents was 30 years or younger. 23.1% was 45 or older. The respondents appeared to be highly educated: 90% had a higher education degree. In addition, half of them was employed in the public sector (58.4%) and in predominantly ‘helping’ jobs (53,8%). This was defined as a job aimed at helping, advising, teaching or healing (Krumm et al., 2013a).

2.2 Questionnaire

The questionnaire was made up of various scales from existing and validated (self-report) instruments. These were written in English and German and translated into Dutch (through a translation and back-translation process) for the purpose of this research. The questionnaire consisted of three major sections: demographic variables (controls), work values and associated job characteristics, and work-related learning.

Work values and job characteristics were studied with the Munster Work Value Measure (MWVM), developed and validated by Krumm, Hertel and colleagues (Hertel et al., 2013; Krumm et al., 2013a, 2013b). The instrument is based on the Value Circumplex of Schwartz (1992) and the life span theories of development and consists of 5 scales: an intrinsic, extrinsic, affective, generative and context-related scale (see figure 2). Intrinsic values include the pursuit of professional growth, challenges to learn and self-realization. Extrinsic values refer to instrumental work aspects and obtaining resources from successful work, such as money and influence. Affective values refer to positive affective experiences, such as appreciation. Context-related values refer to the general ‘setup’ of the workplace (i.e. stability and security) and desired states outside the work context (i.e. leisure, health) that may be affected

by the job. Generativity values include leading the next generation, helping others, sharing knowledge and leaving something meaningful behind (Hertel et al., 2013; Krumm et al., 2013a, 2013b). Each scale was measured with 4 to 5 items, rated on a 100-point scale. Job characteristics were studied by adding a second question to each item of the MWVM, concerning the presence of each value in the job (cf. Krumm et al., 2013b). For example, the work value ‘autonomy’ was measured with the question “How important is it for you to have autonomy in your work?”. The related job characteristic ‘autonomy’, was measured by adding the question: “How much autonomy does your work offer you?”. This was done for the 21 items of the MWVM. Thus, intrinsic, extrinsic, generative, affective and context-related job characteristics were measured. As will be discussed further, this approach also allowed us to analyse values-job fit. The MWVM was chosen, since it is designed to be age-sensitive (it includes age-related work values) and therefore appropriate to study age differences. Moreover, it allowed us to study job characteristics that are known to influence learning and development, especially the intrinsic and extrinsic growth scales and the affective scale.

** Insert figure 2 about here**

CFA’s overall showed sufficient to good fit indices for the generative, intrinsic, extrinsic and affective scales. The construct validity of the context-related scale appeared to be lower (Chi-square =0.003, df=2, p=0.000; CFI=0.835; RMSEA=0.156). In other words, the results of this scale should be interpreted with some caution.

An instrument by Noe et al. (2013) was chosen to study informal work-related learning. It includes the following learning activities: learning ‘from oneself’

(reflecting on how to improve performance, experimenting with new methods, using trial-and-error strategies to learn and perform better), learning ‘from others’ (interaction with a mentor, supervisor and colleagues) and learning from ‘non-interpersonal sources’ (professional magazines, publications, books and internet). For each item, the question was asked: "Think about the past three months, how often have you undertaken this activity during a typical work week, with the intention to learn or to perform better in your job?". The answers were scored on a 5-point scale. The instrument is largely based on a scale of Lohman (2009), of which the reliability has been demonstrated. Construct validity was also illustrated by Noe et al. (2013). Formal learning was examined with one item, ‘participation in training, courses and education’, derived from Berg and Chyung (2008). CFA’s showed sufficient to good fit indices. In order to measure the total quantity of informal learning, a sum score of the scales of Noe et al. (2013) was made. In order to measure the total quantity of learning, a sum score was then made with the item measuring formal learning. Thus, we studied both the overall quantity and the quality (or type) of learning.

Chronological age was used as age measure. In addition to chronological age, different age concepts appear in the literature, such as functional age, psychological age, organizational age, and life span age (linked to life and family status) (Kooij, de Lange, Jansen, and Dijkers, 2008). However, chronological age is closely related to these other concepts, and is used as a dominant indicator in HR policies (Krumm et al., 2013b).

As controls, we added level of education, job status (working in public sector, private sector, working as freelancer or self-employed) (Hertel et al., 2013) and occupation

(based on the typology of Holland (1997), which discerns doing, thinking, helping, advising and organising jobs).

2.3 Analysis

The research questions were examined with various regression analyses, which were conducted with the statistical software package R, in order to study the effects of job characteristics, values-job fit and age on work-related learning.

Analyses were conducted for each of the 6 measures of work-related learning as dependent variable (learning from others, learning from oneself, learning from non-interpersonal sources, formal learning, overall amount of informal learning, overall amount of learning) and for each of the 5 scales of the MWVM separately, by including the work values and related job characteristics from one scale only in each analysis. Thus, the analysis was repeated 30 (6x5) times, as shown in the results.

We did not construct a separate values-job fit measure, but studied fit effects by including both work values and related job characteristics in the equation with polynomial regression analysis (PRA). PRA is based on the idea that measurements of the person and the environment are different constructs and therefore should be measured separately, which is a more sound statistical technique than the use of difference scores as fit measure (the calculated difference between the score on a certain work value and the score on the related job characteristic) (Edwards, 2007). Moreover, PRA allows to examine whether a fit with high scores on both work values and job characteristics has a different effect than fit with low scores on both (Edwards, 2008). Furthermore, the effect of job characteristics may be greater or smaller than that of work values, which can also be examined with PRA and not with

difference scores (Kristof-Brown et al., 2005). Higher order terms of the scores on work values and job characteristics were also used as predictors, in order to study curvilinear effects (Edwards, 2008). Next to fit effects, this PRA technique also calculates the separate effects of job characteristics and of work values on learning.

Descriptive statistics are presented in table 1. Table 2 shows the regression coefficients for all the predictors of work-related learning. Since polynomial regression requires a lot of statistical power for significant results (Dawson and Richter, 2006), the significance level was increased to 0.1 for fit effects (cf. Krumm et al., 2013b). We followed the advice of Dawson (2014) not to centre or standardize the dependent variable, to show the real variation. Work values and job characteristics were standardized.

** Insert tables 1 and 2 about here **

Table 2 also shows age effects on work-related learning. The results of the regression analyses of the effects of age on work values are shown in table 3 (formula: work values = controls + age). Since these age effects appeared to be non-significant, as will be explained in the next section, no further path analyses were conducted to study the entire model (age -> work values -> work-related learning).

** Insert table 3 about here **

3. Results

First, we present the influences of job characteristics (H1a) and their fit with work values (H1b) on work-related learning. Since the PRA analyses also calculate the

separate effects of work values on learning, we also present these effects. Next, we present the effects of age on work-related learning (H2a) and on work values (H2b).

3.1 Work values, job characteristics, fit and work-related learning

Concerning the impact of work values on work-related learning, the regression analyses show a significant positive effect of generative work values on the overall amount of work-related learning ($B = 0.011$, $p < 0.05$) and informal learning ($B = 0.010$, $p < 0.05$), and more specifically on learning from oneself ($B = 0.021$, $p < 0.01$) and on formal learning ($B = 0.019$, $p < 0.05$). Intrinsic values ($B = 0.018$, $p < 0.05$) and context-related work values ($B = -0.009$, $p < 0.05$) have a significant impact on informal learning from oneself. No effects are found of affective and extrinsic work values on work-related learning.

The results further indicate a number of significant effects of job characteristics on learning (H1a). Generative, affective, intrinsic and extrinsic job characteristics have a positive effect on the overall amount of work-related learning and on the amount of informal learning. Looking at the effects on the quality (i.e. specific types) of learning, we find that affective job characteristics have a positive effect on all types of informal learning, but not on formal learning. Intrinsic job characteristics do influence formal learning ($B = 0.021$, $p < 0.001$), as well as learning from sources ($B = 0.020$, $p < 0.01$) and from others ($B = 0.033$, $p < 0.001$). Extrinsic job characteristics have a positive impact on two types of informal learning: learning from others ($B = 0.016$, $p < 0.001$) and from oneself ($B = 0.012$, $p < 0.05$). They however do not influence formal learning. Generative job characteristics have a significant positive effect on learning from others ($B = 0.026$, $p < 0.001$) and from sources ($B = 0.014$, $p < 0.01$). Context-

related job characteristics have a positive impact on the total amount of learning ($B = 0.006$, $p < 0.05$), and more specifically on formal learning ($B = 0.011$, $p < 0.05$).

Concerning fit effects on work-related learning (H1b), the PRA's show that generative fit has a significant impact on learning from oneself ($B = 0.001$, $p < 0.1$). Context-related fit has a significant effect on the total quantity of work-related learning ($B = 0.0004$, $p < 0.05$) and informal learning ($B = 0.0004$, $p < 0.05$), and more specifically on learning from others ($B = 0.001$, $p < 0.01$). To interpret these effects, visual representations were created with the method of Dawson and Richter (2006) (see figures 3-6). Figures 3, 5 and 6 show linear effects, while figure 4 includes second order effects. In all significant fit effects, the most is learned in case of fit with high scores on both work values and related job characteristics. However, in figures 3, 5 and 6, workers still learn more when they experience misfit (high score on values and low score on job characteristics, or low score on values and high score on job characteristics), compared to fit with low scores on both values and job characteristics. Figure 4 shows a different effect: in this case, the least is learned in case of misfit with a low score on values and a high score on job characteristics. Furthermore, misfit with a low score on job characteristics and high score on values results in almost the same amount of learning than fit with high scores on both values and job characteristics.

3.2 Age, work values and work-related learning

Concerning age effects on work-related learning (H2a), correlation and regression analyses do not show any age differences in the overall quantity of learning, in the quantity of informal learning, or in the quantity of formal learning. In terms of the quality of informal learning, however, age differences exist. Age has a linear positive

effect on learning ‘from non-interpersonal sources’: the older the worker, the more (s)he learns by consulting these sources ($B = 0.018$, $p < 0.01$). The results show a significant negative linear effect of age on learning ‘from others’ ($B = -0.017$, $p < 0.001$). Extra regression analyses to test for curvilinear effects of age on work-related learning reveal a curvilinear effect of age on learning ‘from oneself’ (inverted U-shape) ($B = 0.0002$, $p < 0.05$). Work-values do not appear to be age-dependent however (H2b): there are no significant effects of age on work values (see table 3).

** Insert figures 3-6 about here **

4. Conclusion and discussion

In today’s knowledge economy, lifelong learning is essential for all professions. Since fit studies indicate the importance of person-job fit for a number of work-related outcomes, we studied the impact of job characteristics and their fit with a worker’s work values on work-related learning. Moreover, since research on age effects on work-related learning is inconclusive, and life span theories suggest that work values evolve throughout the life span, we studied age effects on work-related learning and on work values, to obtain a better understanding of how age differences in work-related learning can be explained.

Intrinsic job characteristics were found to benefit both formal and informal learning, and affective and extrinsic job characteristics were found to facilitate several types of informal learning. This means that not only intrinsic job factors such as learning opportunities, but also emotional wellbeing at work, and positive work experiences facilitate learning, as well as extrinsic job characteristics such as career opportunities, which is in line with previous studies (Ashton, 2004; Egan et al., 2004; Kraimer et al.,

2011; Poell et al., 2004; Skule, 2004). Generative characteristics, i.e. the opportunity to create something meaningful and lasting and to pass on one's knowledge and experience to others, were also found to benefit several types of informal learning. This is an interesting finding, since generative job characteristics are not often studied in relation to work-related learning. Context-related characteristics, including job stability, security and leisure time, were also found to facilitate learning, especially formal learning. Possibly, workers in these types of jobs have more time and opportunities for formal learning. Our findings suggest that employers and HR managers should be aware of which job characteristics stimulate (different types of) learning and use these insights in job design and the creation of a suitable work environment. In this regard, research indicates that job characteristics can influence learning directly, but also indirectly by increasing confidence, work satisfaction and motivation (Stamov-Roßnagel, 2009; Tynjala, 2008). Possibly, learning & development activities could also be given generative, intrinsic, extrinsic and affective characteristics (e.g. providing opportunities to share knowledge with and help others, building some autonomy and variation into learning & development practices, rewarding learning, creating a supportive learning environment) in order to maximize learning effects.

Concerning work values, intrinsic, generative and context-related values were found to influence learning. The influence of generative values on both formal and informal learning is particularly interesting. The desire to create something meaningful/sustainable through work and to pass on one's knowledge and experiences to others, stimulates learning. Workers presumably perceive learning as a prerequisite to live up to these values. The positive impact of intrinsic values on learning is in line with

previous studies (Lohman, 2005): the desire for professional growth stimulates informal learning (but not formal learning). Therefore, it is surprising that we did not find effects of these values on the others types of informal learning. Our findings suggest that employers and HR managers should pay attention to the work values that are beneficial for learning (e.g. in selection procedures), should nourish these values (e.g. by underscoring the importance of these values to the organization) and clarify how these values could be pursued by performing learning & development activities. Being aware of generative work values, which include wanting to help and share knowledge with others, could also help HRD managers to find good candidates for mentoring and coaching roles. Context-related work values (including leisure time) were found to be negatively related to learning through experimentation, reflection and trial-and-error. Although it is possible that workers with these values do not want to spend too much time on learning, the effect on that specific type of learning remains unclear. We did not find any effects of affective or extrinsic values on work-related learning. The latter is surprising, since learning could lead to more extrinsic work outcomes (Van der Sluis and Poell, 2003). In general, the results indicate less effects of work values compared to job characteristics on work-related learning.

We found some small effects of the fit between generative and context-related work values and related job characteristics on work-related learning. Fit appears beneficial for work-related learning when the job provides the worker with the things he/she really values (i.e. combination of high scores on both values and related job characteristics). This means that work-related learning is not only influenced by work values and job characteristics which have a direct impact on learning, but also by the match between these work values and job characteristics. This fit possibly results in

satisfaction and motivation, and therefore in learning, while misfit leads to dissatisfaction/demotivation and less learning (Felstead et al., 2015; van Rijn et al., 2013; Warr and Inceoglu, 2012). On the other hand, the results indicate that misfit can also stimulate learning. In one case (figure 4) we found that when the job does not provide the worker with the things he/she really values (i.e. misfit with a high score on values and a low score on job characteristics), this results in almost the same amount of learning than when the job does provide what the worker values. This could indicate that misfit does not necessarily lead to negative outcomes, but can also increase the commitment to obtain more fit through learning (Warr and Inceoglu, 2012). HRD managers should therefore pay attention to mismatches, future perspectives and aspirations of workers, and translate these into learning goals and objectives, as these could provide a stimulus and challenge to learn. It remains unclear why we found effects of generative and context-related fit on learning, but not of the other types of fit.

We did not find any age differences in the quantity of work-related learning. Age also appeared to be unrelated to intrinsic work values. We can conclude that workers of different ages value professional growth to the same degree and undertake an equal amount of work-related learning (both formal and informal), suggesting that employers should provide learning opportunities to workers of all ages and not presume that older workers are less willing to learn. These findings contrast some findings from previous studies (Berg and Chyung, 2008; Colquitt et al., 2000; Kooij et al., 2011; Livingstone, 2001). We found age differences in the quality of learning, in line with previous research (Berg and Chyung, 2008; Coetzer, 2007; Kyndt et al., 2009; Pool et al., 2013). Learning by interacting with others in the workplace

decreases with age, while learning by consulting non-interpersonal sources such as books and journals increases with age. Workers in the middle age range learn more by using trial-and-error, experimentation and reflection. Contrary to what is suggested by other studies and life span theories however (Hertel et al., 2013; Krumm et al., 2013b), we did not find a relationship between age and work values. Hence, the observed age differences in the quality of work-related learning cannot be explained by mediating work values. A possible alternative explanation is that these age differences are associated with age differences in specific learning preferences and needs, or specific learning opportunities. Younger workers possibly learn more by interacting with others because they have more opportunities to do so, and are more dependent on others to do their job (Kyndt et al., 2009; Smit, 2002). Moreover, workers might need some work experience and routine in their work before they start to learn through experimentation, trial-and-error, and reflection (Smit, 2002). For older workers, who have lots of work experience and knowledge, consulting non-interpersonal sources such as books and journals is possibly more in line with their learning needs or preferences (Berg and Chyung, 2008). In this regard, Schmidt (2007) found that trainees were significantly more satisfied with a training when the methodology employed was their preferred one and that this contributed to their overall job satisfaction. If age differences in learning are related to learning preferences, providing learning opportunities in line with these preferences could therefore enhance workers' job satisfaction. Obviously, individual learning needs and preferences should also be taken into account.

To conclude, we would like to make some recommendations for further research. The concept of fit is rarely studied in relation to work-related learning. Since our study

shows that it has the potential to impact learning, further research is desirable to study underlying mechanisms and possible evolutions in fit over time, as well as influences of learning on fit. In addition to values-job fit, it would be interesting to also examine other forms of fit. Certain types of fit could have particular outcomes or have a greater effect on certain types of learning: ‘person-group fit’ and ‘person-supervisor fit’ could have a greater effect on more interactive types of learning for example. Furthermore, misfits could have effects in different directions. This also is an interesting path for further investigation: when is the gap too large, for example between work values and job characteristics, or between job requirements and capabilities, to stimulate learning? When is the gap so small that little is learned? What kinds of misfit can be reduced by learning (directly, or indirectly by obtaining more suitable career opportunities)?

Since the observed effects of age on work-related learning are not entirely clear, follow-up research should provide more insight in underlying factors. Furthermore, we have used chronological age as age measure, but research with other age measures could yield other interesting results (Kooij et al., 2011). For example, we did not find any age differences in generative values, but this could have been different with ‘organizational age’ (seniority).

Our study is not without its limitations. Although the anonymity of the study was emphasized and the possibility was given to leave answers open, common method bias remains a disadvantage of self-reports, which can lead to excessive correlations and effect sizes (Wagner and Crampton, 1993). Furthermore, the sample of this research offers possible restrictions. Although the questionnaire was distributed in a number of organizations and although the mix of different organizations increases

generalizability, it is possible that observed effects are influenced by the specific characteristics of the organizations (van der Rijt et al., 2012). Furthermore, we cannot rule out generation effects and reversed causations, given that all the research data were collected at the same moment in time (Hertel et al., 2013; Kooij et al., 2011; Twenge, 2010). Learning could for example influence work values, job characteristics and fit. We did however study learning activities in the three months previous to the data collection only, limiting possible reversed effects. In addition, qualitative research methods could provide more profound insights in the complex interplay of influencing factors on work-related learning and could expose factors that are crucial for learning, but are not discovered through self-report (Berg and Chyung, 2008). Moreover, the implicit nature of learning implies that respondents do not always recognize and report their informal learning as such (Berg and Chyung, 2008).

Despite these shortcomings, a number of significant relations were found between work values, job characteristics, values-job fit and age on the one hand and the quantity and quality of work-related learning on the other hand. Hopefully, these results will contribute to the learning & development of workers of all ages. Given the importance of lifelong learning in today's knowledge society, this is indispensable.

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Tables and figures

Figure 1: Research model

Figure 2: Items of the Munster Work Value Measure, taken from Hertel et al. (2013)

Figure 3. Effect of context fit on the quantity of learning.

Figure 5. Effect of context fit on informal learning.

Figure 4. Effect of context fit on learning from others.

Figure 6. Effect of generative fit on learning from oneself.

Table 1

Means, standard deviations and correlations

	M	(SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.
1. Age	37.93	(10.30)	1																
2. Affective V	85.04	(8.60)	-.06	1															
3. Intrinsic V	81.65	(9.38)	.02	.40**	1														
4. Extrinsic V	60.78	(15.42)	-.11	.31**	.41**	1													
5. Generative V	80.61	(10.91)	-.01	.51**	.55**	.41**	1												
6. Context V	74.79	(14.23)	.11	.34**	.10	.21**	.26**	1											
7. Affective J	72.25	(14.57)	-.01	.37**	.28**	.13	.21**	.10	1										
8. Intrinsic J	71.6	(14.26)	-.05	.18*	.47**	.19**	.29**	.00	.71**	1									
9. Extrinsic J	57.85	(14.67)	-.03	.18**	.34**	.54**	.28**	.03	.60**	.63**	1								
10. Generative J	71.91	(14.26)	.04	.25**	.32**	.23**	.51**	.16*	.68**	.71**	.60**	1							
11. Context J	65.24	(13.93)	.07	.23**	.10	.19**	.15*	.39**	.38**	.22**	.25**	.28**	1						
12. Total learning	3.185	(.57)	-.10	.17*	.32**	.14*	.40**	-.09	.39**	.54**	.35**	.45**	.05	1					
13. Formal learning	2.9	(1.02)	.01	.10	.16*	.11	.31**	.10	.12	.29**	.22**	.29**	.14*	.55**	1				
14. Total inf. learning	3.217	(.58)	-.11	.16*	.32**	.14	.38**	-.12	.40**	.54**	.34**	.43**	.02	.99**	.41**	1			
15. Learning sources	3.107	(.87)	.12	-.08	.25**	.05	.25**	-.14*	.17*	.37**	.20**	.31**	-.04	.73**	.38**	.73**	1		
16. Learning others	3.259	(.71)	-.28**	.22**	.18*	.16*	.23*	.05	.46**	.48**	.33**	.34**	.16*	.61**	.19**	.63**	.11	1	
17. Learning oneself	3.278	(.80)	-.12	.24**	.26**	.10	.33**	-.13	.26**	.31**	.22**	.29**	-.06	.78**	.29**	.80**	.38**	.35**	1

Notes. *p < .05, **p < .01, V = work values, J = job characteristics

Table 2

Regression coefficients

	total learning	learning oneself	learning others	learning sources	formal learning	total inf. learning
Intrinsic scale						
Age	-.000	-.003	-.017***	.017**	.005	-.001
V	.007	.018*	-.008	.011	.007	.007
J	.020***	.010	.033***	.020**	.017*	.021**
V x J	-.000	.000	.000	-.001	.000	-.000
V ²	.000	-.000	-.000	.001	.000	.000
J ²	.000	-.000	.0004*	.000	-.000	.000
Adj. R ²	.376	.199	.337	.257	.186	.363
Extrinsic scale						
Age	.001	-.000	-.016**	.019**	.005	.001
V	-.000	-.001	-.002	-.002	.002	-.000
J	.012***	.012*	.016***	.008	.012	.012***
V x J	.000	-.000	.000	.000	.000	.000
V ²	.000	.000	-.000	.000	-.000	.000
J ²	-.000	-.000	-.000	-.000	-.000	-.000
Adj. R ²	.231	.145	.192	.177	.170	.214
Generative scale						
Age	-.001	-.002	-.019***	.017**	.005	-.001
V	.011*	.021**	-.002	.012	.019*	.010*
J	.012**	.001	.026***	.014**	.003	.013**
V x J	.000	.001	.000	.000	.001	.000
V ²	-.000	-.000	-.000	-.000	-.001	-.000
J ²	-.000	-.000	.0003*	-.000	-.000	-.000
Adj. R ²	.329	.214	.241	.242	.187	.312
Affective scale						
Age	.001	-.001	-.015***	.018**	.005	.000
V	.002	.015	-.001	-.010	.008	.001
J	.017***	.011*	.026***	.016**	.005	.018***
V x J	-.000	-.000	-.000	-.000	.000	-.000
V ²	-.000	-.000	.000	.000	-.000	-.000
J ²	.000	.000	.000	.000	.000	.000
Adj. R ²	.262	.184	.293	.181	.114	.271
Context scale						
Age	.001	-.001	-.015**	.018**	.006	.000
V	-.004	-.009*	.001	-.009	.002	-.005
J	.006*	.003	.005	.008	.011*	.006
V x J	.0004*	.000	.001**	.000	.000	.0004*
V ²	-.000	-.000	-.000	-.000	-.000	-.000
J ²	-.000	.000	-.0004*	.000	-.000	.000
Adj. R ²	.142	.122	.139	.161	.146	.133

Notes. .p < .1, *p < .05, **p < .01, ***p < .001, V= work values, J= job characteristics, Adj. R² = explained variance

Table 3

Regression coefficients

	intrinsic values	extrinsic values	generative values	affective values	context-related values
Age	.030	-.175	-.006	-.063	.129

Notes. .p < .1, *p < .05, **p < .01, ***p < .001