Original Article

Development and Validation of the German Work-Related Curiosity Scale

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Abstract. Curiosity, a personality trait underlying behavioral tendencies related to knowledge acquisition, learning, and thinking, can be expected to be of high relevance in the world of work. There is, however, to date no work-related curiosity measure. The present article reports results regarding the development and validation of the new 10-item Work-Related Curiosity Scale. Based on two studies, the measure had a one-factor solution, acceptable internal consistency, and expected construct validity. In Study 2, incremental criterion-related validities were found over and above five general curiosity scales (ΔR^2 between .12 and .15), which is in line with the frame-of-reference approach underlying the development of the scale. Interestingly, the lack of evidence for criterion-related validity in Study 1 indicates that these results do not generalize across positions.

Keywords: curiosity, openness to experience, personality, job performance, frame-of-reference approach

Introduction

Curiosity has been identified as a crucial variable in different areas and stages of life. Examples include the role of curiosity in facilitating cognitive development (Tamdogon, 2006), school and academic learning (v. Stumm, Hell & Chamorro-Premuzic, in press), development of interpersonal closeness (Kashdan & Roberts, 2004), and personal growth (Kashdan, Rose, & Fincham, 2004). However, only recently has its relevance for the world of work been emphasized (Mussel, 2011). This is rather surprising, as a lot of jobs have requirements that are closely related to curiosity, such as gathering job-related knowledge, learning new skills, solving new problems, developing strategies, fostering innovations, or adapting to changed environments. As such, it can be expected that curiosity would be a highly relevant trait for behavior in the workplace. Occasionally, such relationships have in fact been pointed out. For example, Rowden (2000) noted that "few human resource department (HRD) researchers or practitioners would argue that (. . .) curiosity, learning, and performance are not somehow related" (p. 33; see also Litman, Crowson, & Kolinski, 2010; Reio & Wiswell, 2000).

One reason for this gap in the literature might be the lack of an appropriate measure for the assessment of curiosity in the workplace. As is discussed in detail below, the literature clearly favors contextualized personality assessments (e.g., Heggestad & Gordon, 2008). However, none of the existing measures of curiosity are work-related; rather, they are general in nature, addressing diverse life domains.

The present paper provides a German scale for the assessment of curiosity that taps behaviors that are especially relevant to the workplace. The development and validation of the Work-Related Curiosity Scale is described based on two studies. The goal is to provide a scale that can be used for the scientific investigation of curiosity in the workplace as well as for applied purposes, such as personnel selection.

Construct Definition and Structure

The definition of curiosity used for the current study and underlying the development of the Work-Related Curiosity Scale refers to curiosity in its epistemic form, including seeking of information, knowledge acquisition, learning, and thinking, since these aspects can be assumed to be of major importance in the workplace. Epistemic curiosity can be delimited from several constructs with similar labels, e.g., perceptual curiosity (Berlyne, 1978), novelty seeking (Cloninger, 1998), sensory curiosity (Litman, Collins, & Spielberger, 2005), social/interpersonal curiosity (Litman & Pezzo, 2007; Renner, 2006), or sensation seeking (Zuckerman, 1994). These constructs emphasize aspects such as risk taking, leisure and sports activities, or spying and snooping, which can be separated both conceptually and empirically (e.g., Byman, 2005) from the epistemic aspect of curiosity that is supposed to be of relevance for work-related behavior.

DOI: 10.1027/1015-5759/a000098

Epistemic curiosity accounts for behavior with regard to approaching situations characterized by collative variables, like novelty, complexity, ambiguity, or uncertainty (Berlyne, 1978). Such behavior has been differentiated into diverse curiosity and specific curiosity. Whereas specific curiosity refers to a tendency for exploratory behavior when confronted with a situation that can be described in terms of collative variables (e.g., solving a puzzle; reading an unknown theory), diverse curiosity refers to exploratory behavior in absence of collative variables and involves being curious about a wide range of topics. Generally, these behaviors are associated with positive affect. However, as Litman and Jimerson (2004) discuss, curiosity-related behaviors may also be associated with rather unpleasant and aversive feelings of uncertainty which accompany curiosity, such as being annoyed at not knowing the answer to a question. The authors labeled this aspect as *curiosity as a feeling of deprivation*, which contains persisting in exploratory behaviors until desired information is obtained or problems are solved. Similarly, Maw and Maw (1970) proposed that curiosity is demonstrated when a person "persists in examining and exploring stimuli in order to know more about them" (p. 326).

In addition to these facets, there is likely a general, underlying factor of epistemic curiosity which is supported by high correlations between corresponding measures (Mussel, 2010) and salient loadings on the same factor when factor analyzed (Litman & Silvia, 2006). Based on this rational, the development of a one-dimensional curiosity measure is intended, which also allows the development of a shorter and more economical test compared to a comprehensive measure with several subdimensions. However, in recognition of the fact that subdimensions may exist within the broader construct of work-related curiosity, the factor structure of the items comprising the new measure are evaluated.

As to its nomological network, epistemic curiosity is closely related to a number of constructs that have been investigated under different labels and on different theoretical backgrounds. For example, high correlations were found between epistemic curiosity and the need for cognition and typical intellectual engagement (Mussel, 2010; Olson, Camp, & Fuller, 1984). Furthermore, curiosity is related to intrinsic motivation to learn. Indeed, several researchers conceptualized curiosity as an element of intrinsic motivation to learn (Amabile, Hill, Hennessey, & Tighe, 1994; Schiefele & Schreyer, 1994). Regarding the Big Five personality traits, curiosity is most strongly related to Openness, especially to the facet Openness for Ideas. Moreover, curiosity is moderately related to Conscientiousness, presumably because of the aspects of persistence and diligence both constructs have in common (Mussel, 2010).

Frame-of-Reference Approach

The development of the Work-Related Curiosity Scale is based on an interactionist perspective positing that stable patterns of behavior depend on certain situational conditions (Wright & Mischel, 1987). For example, being a little sloppy at home might not necessarily contradict having a tidy cubicle at work. Therefore, in order to describe and explain behavior at the workplace, several authors recently recommended the use of contextualized personality assessments (Heggestad & Gordon, 2008; Hough & Oswald, 2008), also referred to as frame-of-reference effect. These have been found to have higher predictive validity of job performance than standard personality tests (Hunthausen, Truxillo, Bauer, & Hammer, 2003). For example, Pace and Brannick (2010) developed a work-specific measure of openness that had an incremental validity over and above openness as measured by the NEO-PI-R (Costa & McCrae, 1992) for creative performance, but not vice versa.

Scale Development

The first author of the present paper as well as trained students wrote a total of 2201 items based on the definition of curiosity provided above. The development of the items was based on several rules: Items had to be job-related; if an explicit job-relatedness was not possible, the item should at least tap behaviors that are relevant in the workplace (e.g., *when solving complex problems, I like to break new ground*). Moreover, items should be restricted to assessing preferences for certain behaviors, meaning self-assessments of curiosity or life events were omitted. Once the items had been written, a total of 40 experts evaluated the items by judging whether they assessed the intended dimension and were appropriate regarding the aforementioned goals. On average, each item was evaluated by 4.6 experts, resulting in 10,146 evaluations. While the experts were also involved in writing the items, they did not evaluate their self-written items. Next, the item pool was reduced to 38 items; items were removed if they had poor evaluations or were redundant with other items. Furthermore, items were removed if they did not match the definition of curiosity as given above (e.g., curiosity for people). Next, item analyses were performed on these 38 items using data obtained in Study 1 (see below). Criteria for item selection were high discriminatory power, high convergent validity with openness for experience, as well as content validity, based on expert judgment. These criteria were chosen in order to develop a short, reliable, and valid scale for the assessment of work-related curiosity. Because we did not have a priori hypotheses regarding the factor structure of work-related curiosity, we did not use factor loadings for item reduction; rather, subsequent exploratory analyses following the item selection process were used for the investigation of internal structure. Eventually, 10 items were selected, on which all subsequent analyses are based on.

Table 1. Items, descriptive statistics, discriminatory power, and factor loadings for the 10 items of the Work-Related Curiosity Scale

	Items	Items in English	*N*	*M*	*SD*	Min	Max	Skew[1]	Kurtosis[2]	Discriminatory power	Factor load
1)	Es interessiert mich, wie sich meine Leistung auf das Unternehmen auswirkt.	I am interested in how my contribution impacts the company.	251	6.04	0.87	3	7	–0.70	0.22	.51	.55
2)	Es macht mir Freude, neue Strategien zu erarbeiten.	I enjoy developing new strategies.	251	5.35	1.10	1	7	–0.76	1.32	.67	.73
3)	An praktischen Lösungen interessiert mich auch die dahinter stehende Theorie.	Regarding practical problems, I'm also interested in the underlying theory.	251	5.18	1.09	2	7	–0.61	0.64	.63	.69
4)	Bei komplexen Problemen beschreite ich gerne neue Lösungswege.	When confronted with complex problems, I like to look for new solutions.	251	5.42	0.97	2	7	–0.38	–0.11	.68	.75
5)	Ich habe Spaß am Tüfteln und Denken.	I enjoy pondering and thinking.	251	5.81	1.01	2	7	–0.74	0.42	.57	.62
6)	Ich bin wissbegierig.	I am eager to learn.	251	6.31	0.88	1	7	–1.80	5.61	.39	.43
7)	Ich durchdenke ein Problem solange, bis ich es gelöst habe.	I keep thinking about a problem until I've solved it.	251	5.82	0.95	3	7	–0.61	–0.08	.56	.61
8)	Ich hinterfrage schon bestehende Theorien kritisch.	I challenge already existing theories critically.	251	4.55	1.29	1	7	–0.13	–0.29	.50	.54
9)	Ich informiere mich solange, bis ich auch komplexe Zusammenhänge verstanden habe.	I carry on seeking information until I am able to understand complex issues.	251	6.02	0.95	1	7	–1.32	3.35	.59	.64
10)	Prozesse im Betrieb versuche ich durch innovative Vorschläge zu verbessern.	I try to improve work processes by making innovative suggestions.	251	5.20	1.21	2	7	–0.65	0.18	.53	.57

[1]$SD_{Skewness}$: .154; [2]$SD_{Kurtosis}$: .306. This measure is nonproprietary (free) and may be used without permission. English items were translated from original German items using a translation/backtranslation procedure; empirical evidence regarding the English version is still pending. Norm values on scale level across the two studies: M = 52.6, SD = 7.89 (N = 644). Gender-specific norms: female: M = 52.1, SD = 7.83 (N = 343); male: M = 53.1, SD = 8.14 (N = 301).

Study 1

Sample

Data were collected in a concurrent validation study in a large German financial service organization. A total of 251 incumbents participated voluntarily in the present research. Participants were currently enrolled in a 2-year apprenticeship in financial business. Slightly more than half of the participants were females (57%). While the exact average age of participants was not available, based on their apprenticeship, it can be roughly estimated as between 18 and 21 years.

Measures

The 38 newly developed items were applied for the assessment of work-related curiosity. For evidence of construct-related validity, measures of the Big Five personality traits, achievement motivation, and general mental ability were also applied. The Big Five personality measure is based on 48 work-related items (S & F Personalpsychologie, 2005). Internal consistencies for Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness are .78, .74, .67, .71, and .77, respectively. Achievement motivation was assessed with a 15-item short scale (S & F Personalpsychologie, 2001), internal consistency was α = .86. Finally, for the assessment of general mental ability, a 28-item measure comparable to the Wonderlic Personality Test (Wonderlic, 1992) was used (S & F Personalpsychologie, 2006); internal consistency was also α = .86.

Training performance was obtained by three different measures, a knowledge-check (N = 79), the intermediate examination (N = 227), and vocational school grades (N = 170). All three measures are indicators of training performance in the vocational school that participants visited as part of their apprenticeship. They were collected anonymously from the personnel file of participants upon agreement of the personnel department. Job performance was obtained by two measures. First, goal-related achievement indicated the performance of participants regarding specifically goals given and assessed by their supervisors. Sec-

Table 2. Correlations indicating criterion- and construct-related validity for the Work-Related Curiosity Scale in Study 1

	1	2	3	4	5	6	7	8	9	10	11	12	13
01) Curiosity (WRC)													
Training performance													
02) Knowledge-check	.26												
03) Intermediate examination	.09	.44											
04) Vocational school grades	.01	.44	.56										
Job Performance													
05) Goal-related achievement	–.02	.29	.41	.28									
06) Supervisory ratings	–.04	.48	.48	.41	.61								
Construct-related evidence													
07) Neuroticism	–.25	–.08	–.21	–.07	–.26	–.25							
08) Extraversion	.40	.20	.16	.12	.18	.20	–.43						
09) Openness to experience	.60	.34	.17	.09	.04	.03	–.27	.33					
10) Agreeableness	.15	–.05	–.08	–.03	–.09	–.07	–.18	.03	.09				
11) Conscientiousness	.57	–.01	.04	.00	.03	.02	–.26	.29	.40	.31			
12) Achievement motivation	.54	.08	.03	–.11	.02	–.01	–.27	.38	.41	.08	.52		
13) General mental ability	–.03	.31	.34	.34	.14	.19	–.13	.13	.07	–.03	.01	–.09	
N	251	79	227	170	251	219	251	251	251	251	251	250	251

ond, supervisory ratings based on global estimates of participants performance assessed by a 15-item ($\alpha = .98$) sequential percentage scale (Brandstätter & Schuler, 2004).

Results

The results are based on the 10-item Work-Related Curiosity Scale after item reduction was completed, as described above. Descriptive statistics on item level can be found in Table 1. The complete German items of the Work-Related Curiosity Scale can be found in the first column. English translations are given in the second column for each of the 10 items.

Item means vary between 4.55 and 6.31 (on a 7-point scale), indicating that items are generally answered in the affirmative. However, skewness indicates that item distributions do not substantially deviate from normal distribution, as all absolute values are below 2 (see Kline, 1998, for recommendations). Similar, absolute values for kurtosis are below 10. On the scale level (i.e., sum of items 1 to 10), skewness and kurtosis were –0.28 and –0.38.

Internal consistency across the 10 items is .85. As can be seen from the second-last column, discriminatory power for the 10 items was generally acceptable, with the exception of item 6 (.39). As correlations with openness and expert judgments regarding content validity were positive, and internal consistency would not be enhanced due to removing the item, it was kept for now; however, results from a replication study are needed in order to investigate discriminatory power of this item in a second sample. Regarding the internal structure of the Work Curiosity Scale, results from a principal axis factoring analysis revealed a 1-factor solution, based on interpretation of the screeplot and parallel analyses. Eigenvalues of the first 6 factors were 4.4, 1.1, 0.8, 0.7, 0.6, and 0.6; the first factor explained 44% of the variance. Factor loadings on the first factor can be found in the last column of Table 1. As Kaiser's criterion suggested extracting an additional factor, a 2-factor solution with oblimin rotation was also applied. Results revealed that items 6, 7, and 9 had highest factor loadings on the second factor, the other 7 items on factor 1. Explained variance increased to 55%, the 2 factors were moderately correlated (.58), and might be interpreted as interest-type (factor 1) and deprivation-type (factor 2) curiosity (Litman, 2008). However, as item development did not intend to assess these subdimensions, it is necessary to confirm these exploratory results in a second study; therefore, the following results for Study 1 are based on the 1-factor solution. Finally, no gender differences were found ($F_{1,249} = 0.26$, $p = .61$).

Correlations regarding construct- and criterion-related validity for the Work-Related Curiosity Scale can be found in Table 2. As can be seen, significant correlations were found with one of the indicators of training performance, namely, knowledge check, while the other two indicators as well as job performance indicators were uncorrelated.

Regarding construct validity, high correlations with openness were found, which is in line with prior research (Mussel, 2010) and can be interpreted as convergent validity. However, as convergent validities with openness were used for item selection, these results have to be replicated in future studies. Interestingly, the Work-Related Curiosity Scale was also saturated by conscientiousness and achievement motivation (a trait that is mainly related to the facet achievement striving of the dimension conscientiousness),

which was not expected based on the definition of the construct and construct validity of other curiosity scales. Finally, the Work-Related Curiosity Scale was unrelated to general mental ability.

Study 2

Sample

Data were collected on a total of 395 participants who participated voluntarily in the present research. Participants were recruited by peers as part of university course work in Germany. On average, participants were 30 years old (*SD* = 11.1, range: 18–70), 51% were female. Regarding prior job experience, 35% had experience of up to 2 years, 24% up to 5, and 31% more than 5 years; only 5% had no prior job experience at all.

While participating in this study, 51% were university students and 49% were employed. The analyses regarding internal and external construct validity were based on the whole sample, whereas criterion-related analyses were restricted to subjects who were employed.

Measures

The 10-item Work-Related Curiosity Scale was applied. Furthermore, diverse curiosity and specific curiosity were assessed with the 10-item Epistemic Curiosity Scale developed by Litman and Spielberger (2003, German translation by Renner, 2006). The internal consistencies for diverse curiosity and specific curiosity are .76 and .73, respectively. Additionally, the 7-item Curiosity and Exploration Inventory (Kashdan et al., 2004, German translation by Renner, 2006; $\alpha = .65$) was applied. Curiosity as a feeling of deprivation was measured by 15 items ($\alpha = .82$) translated from Litman and Jimerson (2004). To provide further evidence regarding construct validity, the 18-item need for cognition short version (Cacioppo, Petty, & Kao, 1984, German translation adapted from Bless, Wänke, Bohner, Fellhauer, & Schwarz, 1994) was applied ($\alpha = .84$). For the assessment of personality variables according to the 5-factor model (including Openness for ideas), the German version of the NEO-PI-R (Borkenau & Ostendorf, 1993) was applied. Internal consistencies were .92 for neuroticism, .88 for extraversion, .85 for openness, .87 for agreeableness, and .91 for conscientiousness.

Multiple job and academic performance criteria were collected in order to examine criterion-related validity. Four measures were used regarding job performance: First, a peer-rating of job performance was obtained via a specifically developed, 3-item sequential percent rating scale (Brandstätter & Schuler, 2004; $\alpha = .74$); peers were colleagues, relatives, or acquaintances of the participants. On average, they had known each other for 10 years (*SD* = 8.7). Second, self-ratings of job performance were obtained from the participants. A 5-item measure, which can be interpreted as subjectively perceived job performance, was adopted from Turban and Dougherty (1994; $\alpha = .80$). The third criterion, career success, can be defined as the achievements individuals have accumulated as a result of their work experience (Judge, Cable, Bourdreau & Bretz, 1995). Career success of candidates was assessed via peer ratings, using job zones from O*Net (Oswald, Campbell, McCloy, Rivkin, & Lewis, 1999). Fourth, leadership was assessed based on the present occupation of the candidates, which was later collapsed in leadership positions (8.1%) and nonleadership positions. Academic performance was assessed via school and university grades. School grades were transformed to be comparable across type of school. Overall values of job and academic performance were calculated by averaging their corresponding indicators.

Results

Similar to Study 1, the distributions of the 10 items of the Work-Related Curiosity Scale did not differ from normal distribution. The values for skewness ranged between –0.80 and –0.19, for kurtosis from –0.23 to 0.85. On the overall scale level, skewness and kurtosis were –0.15 and 0.08, with means ranging between 4.4 and 5.6. The internal consistency across the 10 items was .85. For item 6, which had unsatisfactory discriminatory power in Study 1, discriminatory power was .49, which is acceptable.

Confirmatory factor analysis was used to investigate whether the internal structure for the Work-Related Curiosity Scale obtained in Study 1 could be replicated. Using maximum likelihood as a discrepancy function, acceptable fit was found for a 1-factor solution ($\chi^2 = 126.5$; $\chi^2/df = 3.6$; GFI = .94; CFI = .92; RMSEA = .07; CAIC = 266), which compared favorably to the independence model ($\chi^2 = 1234.5$; $\chi^2/df = 27.4$; GFI = .44; RMSEA = .26; CAIC = 1304). Additionally, a model with two correlated latent variables was applied, using 7 items as indicators for interest-type and three items for deprivation-type curiosity, as found in Study 1. For this model, model fit improved slightly ($\chi^2 = 95.4$; $\chi^2/df = 2.8$; GFI = .95; CFI = .95; RMSEA = .07; CAIC = 242), and 3.3% of variance were explained over 37.3% of variance explained for the 1-factor model. Finally, it should be noted that the two latent factors were highly correlated (.83). In sum, these results are likely to reflect the fact that item development was based on a definition of epistemic curiosity that included interest- and deprivation-type aspects. Given the rather low reliability of the 3-item factor that reflects D-type curiosity ($\alpha = .70$) and the intention of the Work-Related Curiosity Scale to measure epistemic curiosity rather than its subfacets, the following results are reported for the overall score, aggregated across the 10 items. However, these results demand future research that is specifically directed toward the investigation of internal structure of work-related curiosity.

Table 3. Correlations indicating criterion and construct-related validities for the Work-Related Curiosity Scale in Study 2

	Curiosity (WRC)
Criterion-related	
Job performance	.46
Academic performance	.13
Peer-rating	.36
Self-rating	.35
Job zone	.31
Leadership	.19
School grades	.07
University grades	.23
Construct-related	
Epistemic Curiosity – Specific	.71
Epistemic Curiosity – Diverse	.79
Curiosity and Exploration	.68
Curiosity as a Feeling of Deficit	.71
Need for Cognition	.78
Neuroticism	–.32
Extraversion	.29
Openness to Experience	.36
Agreeableness	.09
Conscientiousness	.45
Vulnerability	–.47
Ideas	.68
Achievement Striving	.50
Competence	.48

Notes. $N = 190$ for criterion-related and $N = 395$ for construct-related validities; due to space restrictions, Big Five facets with correlations $|r| < .40$ with WRC are omitted.

Regarding demographic variables, small positive correlations between the Work-Related Curiosity Scale and age were found (.22), indicating that older subjects possess slightly higher scores on work-related curiosity. Also, small gender differences were found ($F_{1,391} = 5.6$, $p < .05$, $\omega^2 = .011$, $d = .24$), with higher values for men than for women. On the other hand, curiosity was independent of educational level ($F_{1,383} = 0.01$, $p = .99$), based on highest school degree.

Construct-related evidence can be found in Table 3. Results reveal high convergent validity with non-work-related curiosity scales. Especially, uncorrected coefficients range between .71 and .79. Regarding the Big Five personality variables, moderate correlations were again found with conscientiousness. Regarding the facets of conscientiousness, the highest correlations were found for achievement striving and competence. Openness to experience was less correlated than expected. However, correlations on facet level revealed large differences. While openness for fantasy (–.05), openness to esthetics (.16), openness to feelings (.15), and openness to values (.19) were hardly correlated, high correlations were found for openness for ideas (.68). Similarly, high correlations were found with need for cognition. Finally, moderate negative correlations with neuroticism were found, mainly because of correlations with the facet vulnerability.

As can be seen in Table 3, significant correlations of the Work-Related Curiosity Scale with job performance were found. This pattern of results holds true for all four indicators of job performance. As such, participants with higher values of work-related curiosity are rated higher on job performance by their peers, have higher self-estimated job performance, possess higher status in terms of their career success, and are more likely to hold a leadership position. Regarding academic success, the Work-Related Curiosity Scale was positively correlated with university grades, but not with school grades. Therefore, overall academic success is only tendentiously correlated ($p = .098$).

The development of the Work-Related Curiosity Scale was determined by an interactionist perspective, under the premise that research and application regarding the significance of curiosity in the workplace should be based on contextualized personality assessments, since these measures tap variance components specifically relevant to the respective setting. In order to examine the potential advantage of the Work-Related Curiosity Scale over and above non-work-related scales, incremental validities were computed. As can be seen in Table 4, the Work-Related Curiosity Scale had incremental validities over and above all four non-work-related curiosity scales. Specifically, the

Table 4. Incremental validities of Work-Related Curiosity Scale over non-work-related curiosity scales

	R	R^2	R^2_{kor}	ΔR^2	ΔF	Δp
Model 1: Epistemic Curiosity – Specific	.26	.07	.06		13.1	.00
Model 2: Epistemic Curiosity – Specific & WRC	.47	.22	.21	.15	36.9	.00
Model 1: Epistemic Curiosity – Diverse	.32	.10	.10		20.8	.00
Model 2: Epistemic Curiosity – Diverse & WRC	.46	.22	.21	.12	27.4	.00
Model 1: Curiosity and Exploration	.24	.06	.05		11.6	.00
Model 2: Curiosity and Exploration & WRC	.46	.21	.20	.15	36.6	.00
Model 1: Curiosity as a Feeling of Deficit	.27	.07	.07		14.6	.00
Model 2: Curiosity as a Feeling of Deficit & WRC	.46	.21	.20	.14	33.2	.00

Note. WRC: Work-Related Curiosity Scale.

Work-Related Curiosity Scale accounted for between 12% and 15% of variance above the variance accounted for by non-work-related curiosity scales. This is particularly noteworthy in light of the high convergent validities, which indicated that the different scales measure the same underlying construct (namely, curiosity). On the other hand, none of the non-work-related curiosity scales had significant incremental validity over the Work-Related Curiosity Scale, with incremental validities being 1% or less.

Discussion

The present article reports findings regarding the validity of the newly developed Work-Related Curiosity Scale. Based on two studies, the 10-item scale had acceptable reliability in terms of internal consistency. Exploratory and confirmatory factor analyses revealed that a one-dimensional solution explained variance reasonable well. Furthermore, the overall scale did not differ from normal distribution.

The theoretical background of scale construction was based on a definition of curiosity in its epistemic form, including the enjoyment of activities like seeking information, knowledge acquisition, learning and thinking, as well as persisting in these activities in exploratory behaviors until the desired information is obtained or the problems have been solved. Results from Study 2 revealed that the Work-Related curiosity Scale had high convergent validities with epistemic curiosity measures, which ranged between .71 and .79. Furthermore, both studies reported evidence of the nomological net of the Work-Related Curiosity Scale with reference to Big Five personality factors. In Study 1, high correlations with openness were found, as assessed with a work-related Big Five test. Study 2, by applying the NEO-PI-R (Borkenau & Ostendorf, 1993), revealed a differentiated pattern for the facets of openness. While openness for ideas had high convergent validities, other facets were less saturated. These results are in line with recent findings indicating that openness is characterized by large heterogeneity (Mussel, Winter, Gelleri, & Schuler, 2011). While correlations between curiosity and openness were expected (Peterson & Seligman, 2004), conscientiousness and achievement motivation (closely related to the facet achievement striving) were also found to be positively related with curiosity. It can be hypothesized that these results are due to the work-related content of the items, as conscientiousness has been found to be the Big Five personality trait with the highest and most generalized validity for job performance criteria (Barrick, Mount, & Judge, 2001). Alternatively, high correlations might be explained from construct overlap. Specifically, the construct persistence is conceptualized as an aspect of both, the definition of curiosity as a feeling of deficit (Litman, 2008) as well as definitions of achievement motivation (Schuler, 1998) and conscientiousness (Costa & McCrae, 1992).

The purpose of the development of Work-Related Curiosity Scale was to provide a valid measure for research on curiosity in organizations. Based on an interactionist perspective, it was hypothesized that contextualized personality assessments provide a better basis for the prediction of work-related behavior (e.g., Heggestad & Gordon, 2008). Study 1 investigated indicators of training and job performance. While mixed evidence was found for training performance, with one of three indicators being significantly predicted by the measure, job performance indicators were uncorrelated. One explanation for the lack of evidence of criterion-related validity for job performance might be the specific requirements of the particular jobs. In order to examine this hypothesis, we reevaluated an existing job analysis. The results indicated that major job requirements were all from the interpersonal domain, including customer service orientation, social competence, and extraversion. Therefore, it can be speculated that criterion-related validity of curiosity does not generalize across jobs. For example, Tett and Burnett (2003) proposed that certain job requirements, like simple, repetitive tasks, might constrain the activation of personality traits and lead to nonsignificant validities regarding job performance. Interestingly, evidence for the criterion-related validity of the Work-Related Curiosity Scale was found in Study 2. Specifically, high correlations were found regarding four different job-performance criteria, including peer ratings, self-ratings, leadership, and career success. Given that participants in Study 2 attained different branches and held different positions, requirements of the jobs that participants held should, at least in parts, include aspects with relevance for work-related curiosity. As such, sample differences might account for differences in the results of the two studies. Furthermore, given the heterogeneous sample, range restriction is less likely to have a negative impact on the results in Study 2. However, because the present studies provided only partial evidence for criterion-related validity, future research should provide additional support for the validity of the Work-Related Curiosity Scale and investigate the specific job and organizational requirements that potentially moderate this relationship.

In line with the frame-of-reference approach of the present paper, incremental validities of the Work-Related Curiosity Scale over and above non-work-related curiosity scales were found, but not vice versa. The latter results support the frame-of-reference approach and indicate that the Work-Related Curiosity Scale provides a better alternative for the investigation of curiosity in the workplace than general curiosity measures.

Acknowledgments

We wish to express our thanks to three anonymous reviewers for their valuable comments on an earlier version of this paper.

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Published online: November 25, 2011

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