

Associations between Motivational and Intellectual Preconditions, Study Satisfaction and Basic Expert Knowledge in First Year Teacher Candidates and Psychology Students

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Research Question

As part of the study SioS-L (*Study of Individual and Organisational Influence on Study Performance in Teacher Education*) we examine the predictive value of individual preconditions – specifically personal structures of vocational interests and cognitive abilities – for satisfaction with academic studies and basic expert knowledge acquired over the first year of studies. The model is analysed for teacher candidates and psychology students.



Study of Individual and Organisational Influence on Study Performance in Teacher Education



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Theoretical Background

One of the main tasks of academic education is to foster student's acquisition of basic expert knowledge which can be considered as one facet of professional competencies (cf. Baumert & Kunter, 2006). With respect to professional development processes in students pursuing a teaching degree in contrast to other academic majors, the question of motivational and intellectual requirements is of high interest (Blömeke, 2009; Gold & Giesen, 1993).

Current studies show that the *structure of vocational interests* is particularly important in the process of choosing an academic major (Klusmann et al., 2009). According to Holland (1997), there are six basic types of vocational interests and work environments: *realistic, investigative, artistic, social, enterprising and conventional*.

A high level of congruence between vocational interest and work environment has been theoretically linked to a longer retention time in jobs, higher job satisfaction and better academic as well as professional achievement. Aside from these motivational factors, researchers have focused on the role of intellectual or cognitive abilities. Regardless of the specific professional context, the general cognitive potential is considered to be the best predictor for academic achievement and professional performance (cf. Schmidt & Hunter, 1998). Within the context of teacher education it is still an open question how students' specific interest structures and general cognitive abilities influence their satisfaction with academic studies and professional performance. Furthermore, we do not know which scope of application those factors have in other social academic majors (e.g. psychology).

Research Design

255 teacher candidates (66.7 % female; age: $M=21.18$, $SD=3.23$) and 53 psychology students (83 % female; age: $M=21.04$, $SD=1.75$) completed a test battery when entering their studies (Oct. 2009):

- AIST-R (Bergmann & Eder, 2005): vocational interest scales (*realistic, investigative, artistic, social, enterprising and conventional*)
- LPS-K (Horn, 1983): intellectual abilities such as *verbal comprehension, reasoning, word fluency, spatial sense, perceptual speed*

- D2 (Brickenkamp, 1994): attentional control
- Three dimensions of study satisfaction (Schiefele, Moschner & Husstegge, 2002): *satisfaction with study contents, study terms and conditions, and the process of coping with academic stress*

Grades gathered at the end of 1st and 2nd semester (Apr./Sep. 2010) were used as indicators of basic pedagogical/psychological expert knowledge.

Results

Descriptive analyses: Interest profiles are comparable; both teacher candidates and psychology students scored highest on the *social* and lowest on the *realistic* and *conventional* scale. Between-group comparisons revealed one significant difference regarding interest in *artistic* vocational domains ($F(1,292)=5.20$, $p=.02$, $partial \eta^2=.02$). Concerning the cognitive abilities, psychology students achieved significantly higher scores in *attentional control* ($F(1,292)=7.79$, $p=.00$, $partial \eta^2=.03$).

SEM for teacher candidates: Study satisfaction is predicted by social interest. Pedagogical expert knowledge is predicted by intellectual abilities as well as

by a special interest structure: lower realistic and higher investigative interest go along with higher expert knowledge.

SEM for psychology students: High study satisfaction is associated with a higher score on the investigative interest scale and higher intellectual abilities. Expert knowledge acquired during the first year of studies is predicted by a higher investigative and a lower social interest. The SEM reveals a schematically similar picture for both groups. Especially the specific vocational interests are of high relevance not only for study satisfaction but also for basic expert knowledge.

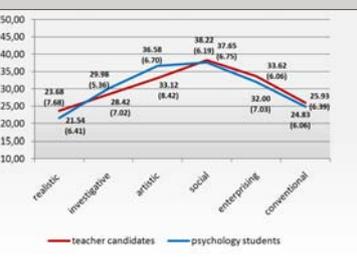


Fig. 1: Vocational interest profiles of first semester teacher candidates and psychology students (M (SD), absolute sum scores)

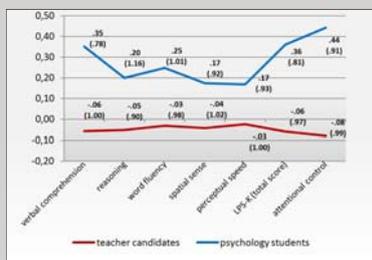


Fig. 2: Cognitive abilities of first semester teacher candidates and psychology students (M (SD), z-standardised sum scores)

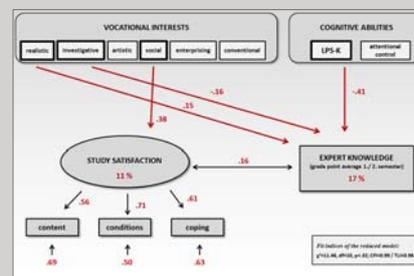


Fig. 3: Standardised model results for the prediction of teacher candidates' study satisfaction and expert knowledge

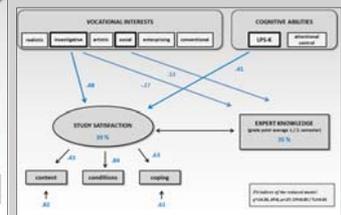


Fig. 4: Standardised model results for the prediction of psychology students' study satisfaction and expert knowledge

Theoretical and Educational Significance

Pedagogical and psychological study domains address students with a pronounced interest in *social* work environments. During the first year of studies, students' personal interests play an unexpectedly important role for their acquirement of basic expert knowledge. It is not the social but rather the *investigative* interest type, though, which seems to achieve higher academic success.

Such information about characteristics and preconditions of students could help to identify and classify potential and limitations of their professional development in the process of academic qualification. If we know the motivational and intellectual requirements which are necessary for successful studies, we can optimise student counseling as well as recruiting or selection processes accordingly.

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