Preservice Teachers' Attitudes and Beliefs About Educational Theories

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PRESENTED AT:

AERA 2023 (iPosterSessions - an aMuze! Interactive system)
THEORETICAL BACKGROUND & OBJECTIVES

Teacher Education and Educational Theories

- A key goal of teacher education (in Germany) = Providing teachers with professional knowledge and skills (Cortina & Thames, 2013; Matthes, 2007)

- (Prospective) teachers should deal with scientific evidence and rely on it for solving pedagogical problems in practice (European Commission, 2007)

- Problem: Some pre-service teachers perceive teacher education as “too theoretical“ and (educational) theories as “far from reality“, “useless“ or “dry“ (Darling-Hammond, 2010; Siegel & Daumiller, u.r.; Sjølie & Østern, 2020)

- Educational theory (in a narrow sense; continental understanding) = systematically ordered system of assumptions, explanatory hypotheses, and assigned observations of educational reality that have an educational question as a starting point (e.g., Biesta, 2013; Prange, 2011, Siegel & Daumiller, u.r.; Sünkel, 2011)

Attitudes (about Educational Theories)

- = Psychological tendencies that are expressed by evaluating a particular entity with some degree of favor or disfavor (Eagly & Chaiken, 2007)

- … are deemed to influence the experience and behavior of individuals (Richardson, 1996)

- Previous research indicated that pre-service teachers differ in their attitudes about teacher education, educational research, and educational theories (Darling-Hammond, 2010; Gitlin et al., 1999; Siegel & Daumiller, u.r.)

Epistemic Beliefs (about Educational Theories)
• ... are considered to play an important role in pre-service teachers' professionalization (Richardson, 1996)
• Subjective views about the nature of knowledge and knowing (Hofer & Pintrich, 1997; Hofer, 2016)
• Multidimensional construct: Hähnlein (2018) differentiates between the dimensions absolutism, simplicity, multimodality, and development (Hähnlein, 2018; Hofer & Pintrich, 1997; Hofer, 2016):

![Figure 1. Dimensions of Epistemic Beliefs according to Hofer & Pintrich (1997)](image)

Motivation and Emotions (when Dealing with Educational Theories)

• ... hypothesized predictors of individuals' engagement with certain tasks (Pekrun & Linnenbrink-Garcia, 2014; Sinatra, 2016; Watt & Richardson, 2015)
• Subjective task values (e.g., intrinsic value) and achievement goals (e.g., learning approach goals) are important for initiating, controlling, maintaining, and evaluating goal-oriented actions (Eccles & Wigfield, 2002; Daumiller, 2019)
• When dealing with educational theories rather positive emotions (e.g., enjoyment) may be activating while rather negative emotions (e.g., boredom) may be deactivating (Pekrun, 2011)
• Interrelations with theory-related attitudes and beliefs are hardly understood (Siegel & Daumiller, u.r.)

Objectives and Hypotheses of the Study

• Altogether, theory-related attitudes and beliefs, as well as motivation and emotions when dealing with educational theories, may play a powerful role in the individual professionalization of pre-service teachers. However, their interrelations are hardly understood.
• Therefore, with this study, we sought to analyze pre-service teachers’ attitudes and beliefs about educational theories — especially their associations with motivational, affective, and conative aspects of individual professionalization.
• We tested the following hypotheses: Based on previous findings we hypothesized that pre-service teachers’ perceived subjective task value, their learning approach goals, their academic emotion joy, and their dealing with educational theories are positively associated with attitudes and beliefs about educational theories. Furthermore, we expected that their work avoidance goals and their emotion boredom
• are negatively associated with their theory-related attitudes and beliefs.
Figure 2. Conceptual Model
METHODS

Participants

N = 188 German pre-service teachers

- Gender: 79.3% female
- Age: M = 20.8 years, SD = 2.85
- Year (semester): M = 1.62; SD = 1.40
- Students from 4 different teacher education programs (school types)

Data collection

Cross-sectional online survey (Fielding et al., 2016) with an questionnaire on relevant aspects of individual professionalization:

- Attitudes about educational theories (self-constructed based on Maio et al., 2019)
- Beliefs about educational theories (adapted from Hähnlein, 2018)
- Subjective task value (Ziegler, Dresel & Stöger, 2008)
- Achievement goals (Daumiller, 2018)
- Academic emotions (Pekrun et al., 2011)
- (Frequency of) Dealing with educational theories (self-constructed)
- Formulations of the items used, descriptive statistics, and internal consistencies are provided in Table 1.

Data Analysis

- To account for missing values we used the full information maximum likelihood method (FIML; Newman, 2014)
- Path models/structural equation models (Kline, 2016): To test the proposed hypotheses, we conducted five structural equation models using the factor scores as manifest variables (one model for attitudes, and each of the four types of beliefs; Kline, 2016). In each model, we regressed dealing with educational theories.
RESULTS

Descriptive Results

- Descriptive statistics for all key variables are shown in Table 1.
- Descriptively, respondents reported rather favorable motivations and emotions regarding educational theories (e.g., moderate to high means for general task value, learning approach goals, and enjoyment, low means for boredom and anxiety; see Table 1).
- Furthermore, mean values revealed that the participants inherit rather negative attitudes and rather naive beliefs about educational theories and engage only a little with them.
- The data contained a significant portion of inter-individual variance (which is reflected in the high standard deviations).

<table>
<thead>
<tr>
<th>Assessed construct</th>
<th>Sample item</th>
<th>M</th>
<th>SD</th>
<th>Range theoretical</th>
<th>Range actual</th>
<th>Skew</th>
<th>ωH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes about educational theories</td>
<td>In general, I evaluate educational theories as negative vs. positive.</td>
<td>5.50</td>
<td>.95</td>
<td>1.00–7.00</td>
<td>1.00–7.00</td>
<td>−0.89</td>
<td>.95</td>
</tr>
<tr>
<td>Beliefs about educational theories</td>
<td>Absolutism</td>
<td>I don’t question what educational theories say.</td>
<td>2.64</td>
<td>.67</td>
<td>1.00–3.00</td>
<td>1.00–4.13</td>
<td>−0.42</td>
</tr>
<tr>
<td></td>
<td>Simplicity</td>
<td>Educational theories are often unnecessarily complicated.</td>
<td>3.30</td>
<td>.64</td>
<td>1.00–4.00</td>
<td>1.00–5.00</td>
<td>−0.32</td>
</tr>
<tr>
<td></td>
<td>Multimodality</td>
<td>It is important to me not only to read educational theories but to think them through myself.</td>
<td>3.80</td>
<td>.64</td>
<td>1.00–5.00</td>
<td>1.00–5.00</td>
<td>−1.14</td>
</tr>
<tr>
<td></td>
<td>Development</td>
<td>The ideas presented in educational theories change over time.</td>
<td>3.73</td>
<td>.62</td>
<td>1.00–4.00</td>
<td>1.00–5.00</td>
<td>−0.39</td>
</tr>
<tr>
<td>Motivation</td>
<td>General task value</td>
<td>It is very useful to have a lot about educational theories.</td>
<td>4.01</td>
<td>.98</td>
<td>1.00–6.00</td>
<td>1.00–7.00</td>
<td>−0.32</td>
</tr>
<tr>
<td></td>
<td>Learning approach goals</td>
<td>Regarding educational theories I want to constantly improve my competences.</td>
<td>6.47</td>
<td>1.24</td>
<td>1.00–8.00</td>
<td>1.00–8.00</td>
<td>−3.87</td>
</tr>
<tr>
<td></td>
<td>Work avoidance goals</td>
<td>Regarding educational theories, it is important to me to have little to do.</td>
<td>3.51</td>
<td>1.78</td>
<td>1.00–6.00</td>
<td>1.00–8.00</td>
<td>0.70</td>
</tr>
<tr>
<td>Academic emotions</td>
<td>Enjoyment</td>
<td>I enjoy dealing with educational theories.</td>
<td>3.24</td>
<td>1.24</td>
<td>1.00–6.00</td>
<td>1.00–6.00</td>
<td>−0.21</td>
</tr>
<tr>
<td></td>
<td>Boredom</td>
<td>Dealing with educational theories burns me.</td>
<td>2.94</td>
<td>1.27</td>
<td>1.00–6.00</td>
<td>1.00–6.00</td>
<td>0.41</td>
</tr>
<tr>
<td></td>
<td>Dealing with educational theories</td>
<td>I often read about educational theories.</td>
<td>2.32</td>
<td>0.98</td>
<td>1.00–5.00</td>
<td>1.00–5.00</td>
<td>0.39</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td>Gender: male or female</td>
<td>1.80</td>
<td>0.41</td>
<td>1.00–3.00</td>
<td>1.00–3.00</td>
<td>−3.30</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>Age: ___ (in years)</td>
<td>20.76</td>
<td>2.85</td>
<td>17.0–40.0</td>
<td>18.0–38.0</td>
<td>2.15</td>
</tr>
</tbody>
</table>

Note. M = mean, SD = standard deviation, Range = theoretical and actual range of scales, ωH = Mcdonald’s Omega coefficient of reliability.

Correlational Results

- Many moderate to high, highly significant, correlations between the main variables of this study—with the exception of the belief-dimensions absolutism, simplicity, and development (see Table 2).

Table 2. Full Correlational Matrix
Findings of the Structural Equation Modeling

- Figure 3 displays the results of the structural equation modeling. In all five estimated models, we found regression effects for all key variables: The parameters were statistically significant for regressions of dealing with educational theories on general task value and the academic emotions enjoyment and boredom.

- Besides, there were significant effects for the regressions of motivations and emotions, in particular, on theory-related attitudes and the dimensions multimodality and development of the participants' epistemic beliefs.

Note. Analyzed were five separate structural equation models: one model for attitudes, beliefs about absolutism, beliefs about simplicity, beliefs about multimodality, and about development as independent variables (IV). Although not displayed in figure 1, correlations between motivational and affective variables were modeled. Reported are standardized regression coefficients. The model yielded a good fit to the data.
• In sum, the results largely confirm our hypotheses, which we have presented in our conceptual model—(see Figure 2).

• Inspection of the indirect effects attested to the proposed mediating role of motivations and emotions regarding the effects of attitudes and beliefs for dealing with educational theories.

• Attitudes about educational theories and the beliefs multimodality and development explained a great portion of the variance (see Figure 3).
DISCUSSION

SIGNIFICANCE OF THE STUDY

Discussion

• The presented study contributes to the understanding of pre-service teachers’ attitudes and beliefs about educational theories and their interrelations with motivational, affective, and behavioral aspects of individual professionalization.

• In sum, the findings reinforced our conceptual model and indicated that motivations and emotions function as mediators between attitudes and beliefs for dealing with educational theories.

• The found strong interrelations stress the relevance of the constructs for educational research and teacher education, as they help to explain why (aspiring) educators deal or do not deal with educational theories.

• Further exploration of these constructs—preferably by conducting longitudinal studies and experimental studies—could help to better describe, explain and foster their individual professionalization.

Limitations

• Cross-sectional study

• Small and selective sample

Educational Implications

• Raise the awareness of aspiring teachers about their theory-related attitudes and beliefs

• Attitudes and beliefs towards educational theories should be addressed explicitly in higher education by students and lecturers…

• …to foster adequate attitudes and epistemic beliefs about educational theories

Future Research

• Work in progress: Nation-wide cross-sectional online study with a similar design and similar measures and with 950 students and 780 lecturers of educational studies and teacher education
ABSTRACT

Educational theories are a constitutive element of teacher education. Despite their relevance, pre-service teachers' attitudes and beliefs about these concepts are hardly investigated—especially their interrelations with motivational, affective and behavioral aspects of their professionalization. Therefore, we conducted a cross-sectional online study with 180 German pre-service-teachers. The results reveal high interindividual differences in their educational theory-related attitudes and beliefs. These constructs were strongly tied to motivational (subjective task value, achievement goals), affective (emotions enjoyment and boredom) and behavioral aspects (dealing with educational theories) when engaging with these concepts, which stresses their relevance for teacher education. Structural equation modeling reinforced the postulated mediating role of motivations and emotions regarding the effects of attitudes and beliefs for dealing with educational theories.