

Students' and instructors' understandings, attitudes and beliefs about educational theories: results of a mixed-methods study

Stefan T. Siegel, Martin Daumiller

Angaben zur Veröffentlichung / Publication details:

Siegel, Stefan T., and Martin Daumiller. 2021. "Students' and instructors' understandings, attitudes and beliefs about educational theories: results of a mixed-methods study." *Education Sciences* 11 (5): 197. <https://doi.org/10.3390/educsci11050197>.

Nutzungsbedingungen / Terms of use:

CC BY 4.0



Article

Students' and Instructors' Understandings, Attitudes and Beliefs about Educational Theories: Results of a Mixed-Methods Study

Stefan T. Siegel ^{1,*}  and Martin Daumiller ² ¹ Department of Educational Science, University of Augsburg, 86159 Augsburg, Germany² Department of Psychology, University of Augsburg, 86159 Augsburg, Germany; martin.daumiller@uni-a.de

* Correspondence: stefan.siegel@uni-a.de

Abstract: (1) Background: Educational theories are a constitutive element of educational studies. Despite their theoretical relevance, little is still known about students' and instructors' understandings of educational theories and their theory-related attitudes and beliefs. (2) Methods: To elucidate these constructs and to test their relevance, we conducted a mixed-methods study with 32 students and 12 instructors of educational studies at a German university. (3) Results: We found that both groups perceived educational theories as rather abstract concepts. Students reported rather negative attitudes and naive beliefs. For both groups, we found that attitudes and beliefs were strongly tied to motivational and affective aspects when dealing with educational theories, which stresses their relevance for educational studies. (4) Conclusions: We suggest a systematic theoretical clarification of the term educational theories. Furthermore, consideration of students' and instructors' theory-related attitudes and beliefs can give rise to meaningful practical implications (e.g., through self-reflection).



Citation: Siegel, S.T.; Daumiller, M. Students' and Instructors' Understandings, Attitudes and Beliefs about Educational Theories: Results of a Mixed-Methods Study. *Educ. Sci.* **2021**, *11*, 197. <https://doi.org/10.3390/educsci11050197>

Academic Editor: Eleanor Dommett

Received: 23 March 2021

Accepted: 15 April 2021

Published: 23 April 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Keywords: educational theory; theory-related attitudes; epistemic beliefs; educational studies; mixed methods study

1. Introduction

Educational theories are a constitutive element of educational studies [1,2]. Thus, both students and instructors in educational sciences can be expected to form attitudes and beliefs about them [3,4]. These theory-related attitudes and beliefs can be considered highly relevant, as (aspiring) educators are expected to acquire and rely on scientific evidence, i.e., empirical data and scientific theories when making professional decisions [5]. Furthermore, attitudes and beliefs also hold a central role in theoretical models about teacher competencies e.g., [6].

Despite their relevance, prior research indicates that preservice teachers and practitioners tend to devalue scientific-educational knowledge [7–11]. Considering the important role that students and teachers in educational studies and teacher education programs hold within the German educational system, these findings are particularly concerning and suggest the need for better understanding students' and teachers' attitudes and beliefs about educational theories, especially as the latter are a part of educators' professional knowledge [6]. However, little is known about how German university students and instructors perceive and assess educational theories, i.e., sets of well-substantiated assertions about educational phenomena. Consequently, we address this research gap with the present, explorative study.

Attitudes and beliefs can guide thoughts and actions and may be systematically associated with different motivations (e.g., learning goals) and academic emotions (e.g., enjoyment), and thus influence learning and teaching processes that may foster or hinder individual professionalization [4,12]. Professionalization is understood as an individual

educational process that involves building specialized knowledge, skills and motives, which can be considered prerequisites for (pedagogical) professionalism [13].

Although there is research related to other attitude and belief objects (such as science in general), and their interrelations with motivational and affective aspects of learning and instruction, attitudes and beliefs about educational theories remain rather uninvestigated prerequisites of individual professionalization [12,13]. Analyzing students' as well as instructors' attitudes and epistemic beliefs about educational theories, and their interrelations with motivational and affective aspects of individual professionalization, is thus highly relevant to better understand the professional development of students and instructors and improve learning processes, particularly within the scholarship of teaching and learning [14].

2. Literature Review

2.1. What Are Educational Theories?

Educational theories, which are a form of abstract thinking, due to their various functions, are relevant for both educational research and practice e.g., [10,15]. Knowledge of them is considered a crucial prerequisite for educators' professional practice [13]. Consequently, learning and teaching such theories are important elements of students and instructors within educational studies [9,16].

Although educators, researchers, and policymakers frequently refer to (educational) theories when discussing learning and instruction, they scarcely disclose their understanding [15,17]. According to Lenzen, there is not yet a consensus about what educational theories are from a scientific perspective, and which of them should be an essential aspect of study programs. This is surprising, as the term educational theories should be fundamental within educational science [18]. To obtain a working definition for the present study, we contrast different perspectives of theorizing education next.

Especially in the English-speaking world, educational theories is used as an umbrella term for theories surrounding the phenomenon of education, which are used in different scientific disciplines such as psychology and philosophy [1,19]. In the Anglo-American tradition, these disciplines are understood as 'contributing' [20] (p. vii) or 'fundamental' [21] (p. 57) disciplines to the interdisciplinary field of the study education [22] which aim to describe and explain educational phenomena [19]. Therefore, educational theories in a broader sense can be defined as sets of statements or principles that may help to recognize, describe, understand, explain and predict educational phenomena [15,19].

In some non-English-speaking countries (such as Germany or Finland), however, the academic study of educational processes and practices is assigned to a scientific discipline in its own right: educational science (often synonymously referred to as *Pädagogik*) [22]. Disciplines such as psychology or philosophy are conceived as adjacent disciplines that have their own objects of interest, perspectives, and questions [15]. When educational science is understood as an autonomous discipline that has its own identity and interests, educational theories in a narrow sense can be defined as systematically ordered systems of well-substantiated assertions of educational phenomena that are based on a genuinely educational perspective. Comparing several contemporary educational theories, the educational perspective manifests itself in the pedagogical difference between teaching and learning or, in other words, when articulation bridges the gap [23,24]. Consequently, educational theories in a narrow sense aim to describe or explain, for instance, educational processes or the goals, forms, and methods of education, and provide frameworks for educational science and pedagogical practice. Theories that explicitly address the above-stated gap and distinguish themselves by their genuinely educational perspective from theories of other disciplines are, for instance, the (general) educational theories of Sünkel (2011), Benner (2015), or Biesta (2014) [24–26].

As (aspiring) educators may have varying understandings of educational theories, the present study, which is located in German higher education, is based on a broad working definition of educational theories to be able to explore the participants' perspectives.

Throughout educational studies, students and instructors deal with educational theories, and are likely to develop a subjective understanding of what educational theories and their functions are, along with theory-related attitudes and beliefs. In addition to making the term educational theories scientifically tangible for students and instructors, research on their theory-related attitudes and beliefs, and their interrelations with motivational and affective aspects of individual professionalization, can be regarded as highly relevant to describe and explain their experience and behavior [4,12]. To this end, it is necessary to elucidate what students and instructors of educational studies think about educational theories, how they assess them, and whether they matter for their motivations and emotions when dealing with them.

2.2. Attitudes about Educational Theories

Despite having different understandings of professional competence, most established models of teacher competencies comprise educators' attitudes besides beliefs, motivational orientations, self-regulatory skills, and professional knowledge e.g., [6]. Following Eagly and Chaiken, an attitude can be characterized as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" [27] (p. 582). According to Maio, Haddock, and Verplanken, a negative, neutral, or positive evaluation of an attitude object, such as people, events, and also rather abstract topics such as educational theories, manifests itself in cognitive representations (e.g., deeming educational theories as useful), in affective reactions (e.g., enjoying dealing with educational theories) and in (intended) behavior (e.g., avoiding dealing with educational theories) [12].

Researchers have developed different, commonly used methods for measuring attitudes: They are typically measured by self-reports (e.g., semantic differentials, interviews) and less frequently with indirect measures such as the implicit association test [28]. Although qualitative interviews are time-consuming, participants can dwell on their attitudes, and the immediate reaction of the respondents to the question can be observed and reacted to by the interviewer. Interviews are often supplemented by questionnaires that allow for the further collection of personal information about the respondents [12,29].

Whether and how attitudes and behaviors related to the attitude object are associated has been controversially discussed within psychological research [30]. Although meta-analyses of attitude-behavior studies vary in their findings, they collectively provide evidence that attitudes significantly and substantially predict future behavior e.g., [31,32]. Given that educational theories are a constitutive element of educational studies, attitudes about educational theories could, therefore, be a viable construct to describe and explain students' and instructors' professionalization, as well as their motivations and emotions when dealing with educational theories [4,33].

2.3. Epistemic Beliefs about Educational Theories

Similar to attitudes, epistemic beliefs are considered important aspects of educators' professional competence that play an important role in learning and instruction [4,6,34]. Epistemic beliefs are essentially a person's beliefs about the nature of knowledge and knowing. Specifically, they can be defined as individuals' assumptions about the origin, nature, limits, and certainty of knowledge [35].

Numerous models are used to conceptualize epistemic beliefs [34]. The well-known and widely used model by Hofer and Pintrich [35] postulates that epistemic beliefs evolve from naive to more differentiated beliefs regarding four dimensions that can also be applied to educational theories: (1) certainty of knowledge (educational theories are valid for all time vs. tentative and evolving), (2) simplicity of knowledge (educational theories are simple vs. complex), (3) source of knowledge (educational theories are provided by external authorities vs. self-constructed) and (4) justification of knowing (educational theories are justified solely by authorities vs. by evaluating scientific evidence).

Similar to attitudes, various qualitative and quantitative approaches are used to measure epistemic beliefs [36]. A strength of qualitative approaches (such as problem-

centered, semi-structured interviews) is that they allow participants to elaborate on their beliefs and justify them in-depth. Whereas standardized surveys are suitable to collect background information about the respondent, interviews have the advantage that both the interviewer and the interviewee can ask clarifying questions [37].

Although there are also controversial findings, a substantial amount of research generally emphasizes the importance of epistemic beliefs for learning and teaching [3,12]. Previous studies have shown that students' beliefs are related to their achievement goals and, in turn, learning strategies and achievement [38–40]. While attitudes bias the selective processing of information during learning, epistemic beliefs serve as a filter through which attitudinally relevant information can be interpreted and evaluated [9,12]. As epistemic beliefs impact individuals' perceptions and interpretations of reality, we consider them to act as antecedents of motivations and emotions of students and instructors when approaching professional knowledge, in particular, of educational theories [40].

2.4. Motivation and Emotions When Dealing with Educational Theories

Motivational and emotional constructs are central to how individuals engage in achievement tasks [6]. Therefore, we consider them relevant constructs to describe differences in how students and instructors deal with educational theories.

To this end, we follow a conceptualization of achievement motivation that posits that motivation is composed, in its core, of expectancy and value aspects, i.e., different constructs that focus on the feasibility of different behavioral options (expectancy), or how desirable individuals deem them (value). Such an approach has extensively been used to describe students' motivations, and, recently, also the motivation of instructors [41,42]. Following this approach, achievement goals, interest, and task value can be considered relevant value-aspects of motivations. Given that motivations are partly domain-specific and pertain to different fields of individuals' engagement in academia e.g., [43,44], motivations, specifically with regard to dealing with educational theories, can be expected to underly their dealing with such theories. Here, we expect attitudes and beliefs about this topic to give rise to different value appraisals, and thus different value-related aspects of motivations for dealing with educational theories. Specifically, we consider learning approach goals (being motivated to deal with educational theories for the sake of improving own competencies and learning something new) and work avoidance goals (seeking to minimize the time and effort one invests when dealing with educational theories) relevant goals, general task value (the amount of intrinsic, attainment, and instrumental value ascribed to dealing with educational theories) as well as interest in educational theories.

Emotions are conceptualized as multidimensional constructs that accompany academic engagement and performance, including preservice teachers and instructors [45,46]. Dealing with educational theories, differences in individuals' enjoyment, boredom and anxiety can be expected. We focus on these three emotions in the present work, as they represent the theoretical spectrum of achievement emotions well (as they are differently valenced and activating, and root in different control and value appraisals) and are frequently used to describe individuals' emotional experiences where they have been found to be relevant for problem-solving, health and relationships with others [47,48].

We consider these motivational and emotional aspects underlying dealing with educational theories in the present work. Documenting associations with individuals' attitudes and beliefs regarding educational theories would provide evidence for their relevance for dealing with educational theories. It is worth noting that this pertains to both students and instructors and encompasses a wide arrange of behaviors, from learning more about these theories to differences in teaching about them or putting them to use for practice later on.

3. The Present Study

Given that educational theories are an essential part of educational studies, and students and instructors ought to learn and teach them, we deem theory-related attitudes and beliefs as relevant prerequisites of their professionalization. Based on the wider

definition of educational theories, we conducted an explorative mixed-methods study with the following two central research questions:

- (RQ1) What attitudes do university students and instructors have about educational theories?
- (RQ2) What epistemic beliefs do university students and instructors have about educational theories?

Through these research questions, we aimed to provide the first indications regarding the relevance of attitudes and beliefs about educational theories by subsequently investigating a third research question:

- (RQ3) How are university students' and instructors' theory-related attitudes and beliefs associated with their task value, learning approach goals, work avoidance goals, interest, enjoyment, boredom, and anxiety when dealing with educational theories?

We assumed that university students and instructors would report attitudes that spanned from negative to positive, as well as beliefs that ranged from naive to differentiated. We propose that their theory-related attitudes and beliefs can be distinguished (i.e., they represent different constructs). Additionally, we expected university students' and instructors' perceived subjective task value of educational theories, interest in educational theories, learning approach goals, and academic emotional experiences of joy would be positively associated with their positive attitudes and differentiated beliefs about educational theories. Furthermore, we presumed that their work avoidance goals, and emotional experiences of boredom and anxiety, would be negatively associated with their theory-related attitudes and beliefs. Finally, we expected that the stated association could be found for students and instructors.

4. Materials and Methods

To answer our research questions, we conducted an explorative, multiperspective mixed-methods study [49]. Specifically, we conducted problem-centered (i.e., semi-structured guideline-based) interviews with students and instructors of educational studies. They were analyzed using qualitative text analysis, which is considered to be a robust method for analyzing large portions of qualitative data [50]. Furthermore, we used a paper-and-pencil questionnaire to economically assess motivational and affective aspects of the participants' professionalization.

4.1. Participants

To obtain a heterogeneous sample for the present study, we employed a purposive sampling strategy and recruited the participants systematically based on several criteria (students: e.g., semester, degree; instructors: e.g., status, professional experience; both: e.g., gender) [29].

The sample comprised a total of 32 students and 12 instructors of educational studies from a public university in Southern Germany. They participated voluntarily and anonymously and provided informed consent. The present study was conducted in full accordance with the Code of Ethics of the German Educational Research Association [51].

The student sample encompassed 32 students of educational studies from nearly all semesters. The students' mean age was 23.9 years ($SD = 3.0$; range: 18–32 years) and 56.3% of the participants were female.

The sample of the university instructors consisted of 12 instructors of educational studies with different academic status (five without Ph.D., four postdocs, and three full professors). Their mean age was 42.6 years ($SD = 9.9$; range: 32–64) and 50% were female. Half of the instructors had substantial teaching experience including 16 years or more, and only 25% had less than five years of teaching experience.

4.2. Data Collection and Measures

4.2.1. Problem-Centered Interviews

For this study, we developed an interview guide for the problem-centered interviews that was applicable to both students and instructors [37]. It comprised a total of 16 open questions and consisted of four thematic areas: (1) dealing with educational theories (four questions, e.g., “Regarding your studies/your current position—to what extent and in which ways have you dealt with educational theories so far?”); (2) relevance of educational theories (three questions, e.g., “What do you think—what are the main functions of educational theories?”); (3) beliefs (six questions, e.g., “What do you think—how certain are educational theories?”) and (4) attitudes about educational theories (three questions, e.g., “When you think about educational theories—would you consider yourself as someone who is rather in favor or disfavor of educational theories?”). The interview guide was pretested with three trial interviews and iteratively improved before conducting the study. All questions of the interview guide are translations of the original German instrument.

The interviews were led by the first author and trained assistants. The interviews lasted an average of 33 min ($SD = 7.3$; Range: 22–56 min) for students and 78 min ($SD = 21.5$; Range: 43–115 min) for teachers. Field notes were taken for all interviews.

4.2.2. Quantitative Measures

Immediately after the interview, the participants completed a paper-and-pencil questionnaire consisting of established measures that were only changed in their item stem or the wording of particular items, so that they related to educational theories. Example items and internal consistencies (when possible, we used McDonald’s ω as a more robust coefficient than Cronbach’s α ; [52]) are displayed in Table 1.

Motivational Aspects

For measuring students’ and instructors’ task value when engaging with educational theories, we used a scale by Ziegler, Dresel, and Stöger [53]. With three items each, intrinsic value, attainment value, and instrumental value were measured on a Likert-type scale ranging from 1 (not true at all) to 6 (completely true). Justified by strong correlations between the three subscales ($r = .66$ – $.86$, $p < .001$) and in line with other research in the field e.g., [54], we combined the three facets into one variable expressing participants’ general task value when dealing with educational theories.

To measure participants’ learning approach and work avoidance goals when dealing with educational theories, we adapted a scale by Daumiller et al. (2019) [55] that assesses each goal type with four items on a Likert-type scale ranging from 1 (*I do not agree at all*) to 8 (*I completely agree*).

Finally, we measured interest in educational theories using a single item from the SEEQ [56] that was to be answered on a Likert-type scale ranging from 1 (*very low*) to 5 (*very high*).

Emotions

We measured participants’ emotions when dealing with educational theories using items from the academic emotion questionnaire (AEQ) by Pekrun et al. [46]. With two items each, we assessed enjoyment, boredom, and anxiety. The items were answered on Likert-type scales ranging from 1 (not true at all) to 6 (completely true).

Table 1. Correlational Statistics for Students' and Instructors' Theory-Related Attitudes and Beliefs and Aspects of Individual Professionalization.

Sample Item			M	SD	Range		Skew	ω _H	Attitudes	Beliefs
					Theoretical	Actual				
Motivations when dealing with educational theories										
Subjective task value	It is very useful to know a lot about educational theories.	Students	4.07	1.16		1.00–6.00	0.15	0.80	0.80**	0.37*
		Instructors	4.39	1.39	1–6	2.44–6.00	−0.29	0.86	0.76**	0.05
		Both	4.16	1.22		1.67–6.00	0.05	0.77	0.74**	0.32*
Learning approach goals	Regarding educational theories, I want to constantly improve my competencies.	Students	6.84	1.05		5.00–8.00	−0.49	0.95	0.36*	0.36*
		Instructors	6.79	1.29	1–8	4.25–8.00	−0.79	0.89	0.68*	−0.04
		Both	6.83	1.10		4.25–8.00	−0.59	0.91	0.38*	0.22
Work avoidance goals	Regarding educational theories, it is important to me to have little to do.	Students	3.72	1.66		1.00–7.00	0.04	0.85	−0.55**	−0.46**
		Instructors	2.15	1.27	1–8	1.00–4.75	1.37	0.94	−0.49	−0.01
		Both	3.29	1.71		1.00–7.00	0.32	0.89	−0.65**	−0.50**
Interest	How high is your current level of interest in educational theories?	Students	3.65	1.02		2.00–5.00	−0.22		0.71**	0.36*
		Instructors	3.82	1.17	1–5	2.00–5.00	−0.50	-	0.90**	0.28
		Both	3.62	1.05		2.00–5.00	−0.27		0.68**	0.28
Emotions when dealing with educational theories										
Enjoyment	I enjoy dealing with educational theories.	Students	3.67	1.35		1.00–6.00	−0.04		0.75**	0.54**
		Instructors	4.00	1.40	1–6	1.00–6.00	−0.50	-	0.70*	0.20
		Both	3.76	1.35		1.00–6.00	−0.14		0.71**	0.45**
Boredom	Dealing with educational theories bores me.	Students	2.38	1.10		1.00–5.00	0.67		−0.71**	−0.21
		Instructors	1.75	1.27	1–6	1.00–5.00	1.80	-	−0.53	0.04
		Both	2.20	1.17		1.00–5.00	0.68		−0.67**	−0.21
Anxiety	While dealing with educational theories, I’m often tense and nervous.	Students	2.42	1.13		1.00–6.00	0.44		0.14	−0.03
		Instructors	1.50	0.93	1–6	1.00–4.00	2.14	-	−0.57	0.48
		Both	2.17	1.15		1.00–6.00	0.82		−0.20	−0.13
Sociodemographic Variables										
Gender	Gender: male or female	Students	0.56	0.50		0–1	−0.27		−0.24	−0.08
		Instructors	0.50	0.52	0–1	0–1	0.00	-	−0.17	−0.17
		Both	0.55	0.50		0–1	−0.19		−0.22	−0.09
Age	Age: ____ (in years)	Students	23.90	3.03		18–32	0.54		0.34	−0.15
		Instructors	42.64	10.4	>0	32–64	0.96	-	−0.02	0.60
		Both	28.81	10.1		18–64	1.86		0.40**	0.43**
Semester	I am currently in my _____ semester.	Students	3.87	2.68	1–15	1–11	0.94	-	−0.26	−0.15
Teaching experience	How many years of professional experience as a university instructor do you have?	Instructors	13.40	10.1	1–45	1–34	0.87	-	−0.09	0.49

Note: $N = 44$ (32 students and 12 instructors of educational studies; the last row shows the frequencies and proportions for the total sample ($N = 44$); Internal consistencies (expressed through ω_H) were only calculated for scales with more than four items; Bivariate correlations: Pearson's r for continuous variables and Spearman's ρ for ordinal variables; *: $p < 0.05$. **: $p < 0.01$.

4.3. Data Analyses

4.3.1. Qualitative Text Analyses

All interviews were recorded, transcribed verbatim, and anonymized (students: interviews 1–32; in total 339 pages; instructors: interviews 33–44; in total 260 pages). We used MAXQDA 2020 to analyze the transcriptions, employing qualitative text analysis. For this purpose, we developed a set of categories in which the main categories were derived deductively and the subcategories inductively [50] (see Table 2).

Table 2. Set of Categories for the Qualitative Text Analyses of the Interviews.

Main Category	Subcategory	Definition (This Category Comprises All Coded Passages in Which ...)	Prototypical Example from the Data	Coding Rules (Passages Are Only Coded if ...)
Examples of educational theories	Examples of educational theories in a narrow sense	... the participants provide an adequate example of educational theories (in a narrow sense, e.g., theories of education and bildung).	‘Sünkel’s educational theory’ (L01, 17).	... the participants referred only to theories of education and bildung and not to theories and models of other disciplines.
	Examples of educational theories in a wider sense	... the participants provide an inadequate example of educational theories (in a wider sense, e.g., psychological or sociological theories and models).	‘The (Atkinson-Shiffrin) memory model’ (S08, 75).	... the participants referred to theories, models, concepts, etc. except for theories of education and bildung.
	No example	... the participants do not provide an example of educational theories at all.	‘Um, (long pause) no, not really’ (S28, 77).	... the participants were not able to provide an example of educational theories.
Attitudes about educational theories	Positive	... educational theories are evaluated positively.	‘Very positive, because they help me to better understand my own life’ (L01, 63).	... the participants evaluated educational theories as positive, pleasant, important, useful, etc.
	Neutral/ambivalent	... educational theories are evaluated in a neutral/ambivalent manner.	‘Neither. (laughs) (...) I’m in favor of them if I can put them into practice. However, if I have the impression, that they only have an end in themselves then I’m rather disgruntled’ (L09, 119).	... the participants evaluated educational theories as positive and negative at the same time.
	Negative	... educational theories are evaluated negatively.	‘dry’ (S09, 87).	... the participants evaluated educational theories as negative, unpleasant, unimportant, useless, etc.
Epistemic beliefs about educational theories	Differentiated	... differentiated beliefs on educational theories are expressed.	‘I think [educational theories] are adaptable, they should also be adapted in the face of new political, social and cultural challenges’ (L2, 53).	... the participants perceived educational theories as tentative and evolving, complex, self-constructed, justified by evaluating scientific evidence, etc.
	Partly naive, partly differentiated	... partly naive, partly differentiated beliefs on educational theories are expressed.	‘Educational theories are highly complex in fact’ (L16, 45). They are ‘evolving’ (L16, 43).	... the participants expressed naive and differentiated beliefs about educational theories at the same time.
	Naive	... naive beliefs on educational theories are expressed.	Some experts ‘simply come up’ (S17, 14) with educational theories.	... the participants perceived educational theories as valid for all time, simple, provided by external authorities, justified (solely) by authorities, etc.

Note: This is an English translation of the German set of categories that was used for the analyses. It is not (yet) validated for use in the English language.

For the main categories (examples of educational theories, attitudes, and beliefs), 10% of the interviews were randomly selected and then coded separately by two coders. Krippendorff’s alpha ranged from 0.91 to 0.95, which indicates excellent intercoder reliability. The remaining disagreements were consensually resolved, and operational rules were established. The first author then used these rules to code the remaining material [57]. For the quantitative analyses, participants were categorized regarding their attitudes and beliefs about educational theories (see Table 3). To illustrate the findings, we included exemplary quotations from the interviews with the 32 students (S01–32) and the 12 instructors (L01–12) of educational science. The number that follows the comma indicates the paragraph from which the quote was taken.

Table 3. Classification of the Interviewees Regarding their Attitudes and Beliefs about Educational Theories.

Beliefs about Educational Theories		Attitudes about Educational Theories		
		Negative	Neutral/Ambivalent	Positive
Naive	Students	5	8	0
	Instructors	0	0	0
	Both	5 (11.4%)	8 (18.2%)	0 (0%)
Partly naive, partly differentiated	Students	3	5	4
	Instructors	0	2	3
	Both	3 (6.8%)	7 (15.9%)	7 (15.9%)
Differentiated	Students	3	1	3
	Instructors	0	3	4
	Both	3 (6.8%)	4 (9.1%)	7 (15.9%)

Note: Frequencies of 32 students and 12 instructors of educational studies are displayed. ‘Both’ shows the frequencies and proportions for the total sample ($N = 44$).

4.3.2. Statistical Analyses

We used bivariate correlations (Pearson’s r for continuous variables and Spearman’s ρ for ordinal variables) to test the interrelations between the respondents’ theory-related attitudes and beliefs and the motivational and affective aspects of learning and instruction. Over all variables and participants, there were less than 1% missing data per variable, which was dealt with using the full information maximum likelihood method (FIML) [58]. All analyses were conducted in *R*. Assuming medium effect sizes, power analyses revealed that a sample size of 20 participants was sufficient to confirm the expected linkages between attitudes and beliefs with the motivations and emotions that we assessed. This shows that the associations on the level of the overall sample, or of the subsample, of the students can be well interpreted despite the low sample size; however, it may be the case that true effects may be missed when only considering the correlations of the instructor subsample. The findings should, therefore, be cautiously interpreted, not only considering their statistical significance but also their descriptive magnitude.

5. Results

5.1. Understandings, Attitudes, and Beliefs Regarding Educational Theories

The majority of the interviewees (students as well as some instructors) expressed uncertainty about what the term educational theory means. While some admitted that they “don’t have a specific definition in mind right now” (S21, 112) or that they “haven’t given it that much thought” (L05, 156) others defined educational theories simply as “opposed to practice” (S01, 11). Furthermore, 11 out of the 44 interviewees, including nine students and two instructors, were not able to spontaneously provide an example of an educational theory. The answers of the remaining interviewees differed considerably. While some could name a genuine example of an educational theory in a narrow sense such as “Sünkel’s educational theory” (L01, 17), others referred to, for instance, sociological theories such as Bourdieu’s “theory of capital” (S29, 85) or psychological models such as “the (Atkinson–Shiffrin) memory model” (S08, 75).

The respondent’s attitudes about educational theories differed considerably. Eleven of the interviewed students expressed their rather negative attitude by referring to educational theories as “far from reality” (S14, 86), “useless” (S01, 83), “vague” (S06, 22), or “dry” (S09, 87). Interestingly, none of the instructors expressed such an attitude. One student responded to the question of how much educational theory should be part of educational studies at university with “zero” (S01, 21). In contrast, seven students and seven instructors positively evaluated educational theories: “Educational theories, this is absolutely my thing. I’m greatly interested in them” (S05, 79) or “(V)ery positive, because they help me to better understand my own life, my personal development [. . .] and also help me to cope better with teaching at university” (L01, 63). Over a third of the interviewees, including 14 students and four instructors, evaluated educational theories ambivalently.

Regarding the question concerning whether the interviewees see themselves as someone who is rather in favor or disfavor of educational theories, they answered, for example, as follows: “Neither. (laughs) (. . .) I’m in favor of them if I can put them into practice. However, if I have the impression, that they only have an end in themselves then I’m rather annoyed” (L09, 119).

The interviewees held a wide range of epistemic beliefs about educational theories that extended from rather naive to rather differentiated beliefs. Of the interviewed students, 13 expressed rather naive beliefs on educational theories, while instructors seemed more educated on the topic. Some interviewees held the belief that they stem from “subjective opinions” (S21, 35) and that some experts “simply come up” (S17, 14) with them. In contrast, 14 interviewees, comprising seven students and seven instructors voiced rather sophisticated beliefs on educational theories (e.g., that they are tentative and evolving): “I think that educational theories that are well researched probably have a true and stable core, but nonetheless they’re not 100% certain” (S03, 56) or “I think (educational theories) are adaptable, they should also be adapted in the face of new political, social and cultural challenges” (L2, 53). Around a third of the interviewees, including 12 students and five instructors expressed partly naive and partly differentiated beliefs on educational theories.

In summary, the qualitative data shows that there is high heterogeneity among university students’ as well as instructors’ understandings of educational theories, as well as their theory-related attitudes and beliefs. In contrast to the students, the interviewed instructors held no negative and no naive beliefs about educational theories. As the classification of the interviewees regarding their theory-related attitudes and beliefs shows, eight different groups could be identified (see Table 3).

5.2. Associations of Theory-Related Attitudes and Beliefs with Motivational and Affective Aspects when Dealing with Educational Theories

Descriptively, participants reported rather favorable motivations and emotions regarding educational theories (e.g., moderate to high means for task value, learning approach goals, and enjoyment, low means for boredom and anxiety (See Tables 1 and 4).

Simultaneously, there were substantial interindividual differences between the different respondents (reflected in the high standard deviations) that were meaningfully associated with their attitudes and beliefs regarding educational theories that were determined in the interviews.

Participants with positive attitudes reported stronger task-value and learning goals, less work avoidance goals, more interest, more enjoyment, and less boredom regarding educational theories than participants with negative attitudes about educational theories. These associations were quite strong and found for both students and instructors (except for work avoidance goals and boredom), which did not differ statistically significantly depending on the instructors’ attitudes. Descriptively the effects were similar to the students, which indicates that this is primarily a function of the smaller sample size of the instructors.

Depending on the participants’ beliefs on educational theories, we found differences in motivations and emotions for students, but not for lecturers. Students with more differentiated beliefs reported stronger task value and learning goals, less work avoidance goals, higher interest, and more enjoyment than those with naive beliefs. No statistically significant associations were found between students’ or instructors’ beliefs and the emotions of boredom and anxiety. Descriptively, the effects for instructors were very small (see Tables 1 and 4).

Table 4. Bivariate Correlations Between Students' and Instructors' Theory-Related Attitudes and Beliefs and Motivations and Emotions.

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Attitudes	-	−0.23	0.76**	0.68**	−0.49	0.90**	0.70**	−0.52	−0.57	−0.17	−0.02	-	−0.09
2	Beliefs	0.23	-	0.05	−0.04	−0.00	0.02	0.19	0.04	0.48	−0.17	0.60	-	0.49
3	Subjective task value	0.80**	0.37**	-	0.68**	−0.60**	0.91**	0.94**	−0.68**	−0.49	−0.12	0.17	-	0.12
4	Learning approach goals	0.36**	0.36**	0.52**	-	−0.71**	0.84**	0.77**	−0.57	−0.58**	0.27	0.04	-	0.00
5	Work avoidance goals	−0.55**	−0.46**	−0.57**	−0.45**	-	−0.38	−0.44	0.20	0.31	−0.05	−0.20	-	−0.28
6	Interest	0.71**	0.36**	0.72**	0.38**	−0.64**	-	0.92**	−0.68*	−0.54	−0.02	0.03	-	−0.05
7	Enjoyment	0.75**	0.54**	0.79**	0.41**	−0.55**	0.80**	-	−0.74**	−0.42	−0.13	0.14	-	0.10
8	Boredom	−0.71**	−0.21	−0.62**	−0.30	0.47**	−0.56**	−0.49**	-	0.75**	−0.14	0.44	-	0.48
9	Anxiety	0.46	−0.03	−0.90	0.22	−0.02	0.00	0.24	0.13	-	−0.38	0.65*	-	0.67**
10	Gender	−0.24	−0.08	−0.34	0.02	0.18	−0.19	−0.29	0.36**	0.19	-	−0.36	-	−0.42
11	Age	0.36**	−0.15	0.40**	0.12	−0.12	0.18	0.25	−0.35	−0.01	−0.47**	-	-	0.99**
12	Semester	−0.26	−0.15	−0.49**	−0.43**	0.31	−0.29	−0.29	0.26	−0.24	−0.09	0.02	-	-
13	Teaching experience	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: $N = 44$ (32 students and 12 instructors of educational science); Correlations for students are to the left of and below the diagonal. Correlations for instructors are to the right of and above the diagonal; Bivariate correlations among continuous variables: Pearson's r ; Bivariate correlations among continuous and ordinal variables: Spearman's ρ ; *: $p < 0.05$, **: $p < 0.01$.

6. Discussion

6.1. Discussion of the Main Findings

In this explorative mixed-methods study, we investigated students' and instructors' attitudes and beliefs regarding educational theories and tested their relevance for motivational and emotional processes when dealing with such concepts. Given the central role of educational theories within educational studies, understanding students' and instructors' subjective understandings, their theory-related attitudes and beliefs, and their relevance for dealing with these theories, is an important step towards more comprehensively understanding differences in how students and instructors of educational studies learn and teach about educational theories and rely on them in practice. Besides its focus on under-investigated aspects of students' and instructors' professionalization, a particular strength of the present work is its multiperspective approach (considering both students and instructors) and the use of a mixed-methods approach to open this new line of research.

Although the term educational theories are commonly used in educational contexts and can be considered a fundamental concept of educational science, educational theories were perceived by both groups to be very abstract and vague [10,17]. A majority of the interviewed students (even the ones in higher semesters), but also some instructors, had great difficulties in defining the term and in providing adequate examples. It is worth noting that we found this pattern for both freshmen as well as more advanced students. Especially, this last finding is surprising as instructors should introduce students to these theories. As expected, most of the participants, students, and instructors alike referred to educational theories in a broader sense by naming examples of psychological or sociological theories and did not directly associate theories of education and *bildung* in a narrow sense with the term educational theories (see defining educational theories). This might be due to the lack of a clear definition in scientific-educational literature [18]. Here it is worth noting that the study was conducted in Germany, a country in which educational science is taught as an autonomous subject. Thus, not finding a definition of educational theories in a narrow sense in German-speaking educational literature can be considered as substantial evidence that this may not be the case, either, in countries, especially in those who follow the Anglo-American construction the field of education. These findings may imply that if instructors were to place an increased focus on the question of what educational theories are, this could lead to more clarity from which students could benefit. Differing in their degree of sophistication, in particular, the students' responses were often pervaded by vague and prescientific understandings (e.g., 'theory and practice are something completely different'). This might point to a potential lack of metaknowledge about educational theories, for example, regarding the certainty, simplicity, and functions of scientific knowledge that could be addressed in educational studies [10,35].

Irrespective of their understandings of educational theory, students and instructors are regularly confronted with educational theories within educational studies. Despite students frequently not having a scientifically accurate scientific understanding of the concept, they still form attitudes and beliefs about it that we consider as decisive for how they engage with educational theories. To this end, our results reinforced that attitudes and beliefs can be distinguished from each other. At the same time, both theory-related attitudes, as well as beliefs of the respondents, differed considerably. In line with our theoretical expectations, we found attitudes that ranged from negative to positive, and beliefs that ranged from naive to differentiated [12,35]. Our findings showed that students especially evaluated educational theories more negatively, and held more naive beliefs, which is in line with prior research on preservice teachers and practitioners [7,10,11]. Instructors might have more positive attitudes and more sophisticated beliefs about educational theories, as they might be confronted more often with them and have a stronger intrinsic motivation to deal with theoretical concepts than students. Nevertheless, the degree to which negative attitudes and naive beliefs about educational theories affect students' and instructors' professionalization remains unclear.

Taken together, these findings shed light on the configurations of attitudes and beliefs about educational theories and suggest that they are distinct concepts that can meaningfully inform us about why individuals engage differently with educational theories. Regarding the latter point, we provided first indications of the different correlation patterns with motivational and affective aspects of individual professionalization.

That both students' and instructors' attitudes were strongly associated with their motivations and emotions regarding dealing with educational theories, confirmed our expectations regarding their relevance for individual professionalization. Concerning the participants' beliefs, the associations with motivational and affective aspects of individual professionalization tended to be weaker for students, while no statically significant findings emerged for instructors. Despite the lower sample size of instructors, this might point to a greater relevance of attitudes and beliefs regarding educational theories for students. Furthermore, we consider the association with boredom particularly interesting. While there was a strong negative link for students' attitudes, the beliefs were hardly associated with boredom. This could point to attitudes and beliefs underlying different affective mechanisms, with attitudes being primarily relevant for one's appraisals and beliefs being tied to more strongly cognitive valuations of the construct in question [9,12]. As such, beliefs might matter more strongly for engagement and decisions to engage with the constructs (e.g., research) [8]. An explanation for the less favorable effects for the beliefs might be that they comprise a different dimension that should be distinguished in future research endeavors. Based on this, we conclude that both attitudes and beliefs appear meaningful for explaining differences in how individuals deal with educational theories [4,38].

Despite the small sample, the high heterogeneity among the participants regarding their attitudes and beliefs about educational theories and strong interrelations with motivations and emotions when dealing with educational theories, speak to the relevance of theory-related attitudes and beliefs and indicate that future research should follow up on them. The presented qualitative and quantitative results provide starting points for this.

6.2. Limitations and Future Research

Despite its strengths, some limitations should be kept in mind when interpreting the findings. First, the cross-sectional design of the present study cannot provide information about causal relationships between the examined constructs. Future longitudinal studies could shed light on possible causal relationships, draw conclusions about their directions, and investigate the temporal stability of the attitudes and beliefs of university students and instructors about educational theories.

Second, our quantitative analyses and findings are based on a relatively small sample of German students and instructors from one university, which reduces the external validity of the findings. Although we presume that the interrelations of the examined constructs are generalizable due to similar underlying psychological mechanisms, future research should aim to replicate the findings with representative and randomized samples of students and instructors from universities in different countries, since we cannot rule out that our data might have been biased. Conducting cross-cultural studies may be an especially interesting endeavor to gain information about students' and instructors' understandings of educational theories, as there are conceptual differences of educational theories in German-speaking vs. English-speaking countries [15,22].

Finally, it is important to keep in mind that we used interviews to assess the participants' attitudes and beliefs. Although this approach was particularly appropriate for the explorative purpose of the present research (finding out if and what types of attitudes and beliefs students and instructors have about educational theories), future studies with larger samples should rely on more economical instruments such as standardized questionnaires.

6.3. Educational Implications and Conclusions

Although further studies are needed to further investigate the role of attitudes and epistemic beliefs about educational theories for students' and instructors' professional-

ization, the results of the present study allow us to deduce preliminary implications for educational studies. Given that there exists no clear definition of educational theories in the (inter)national educational literature, we suggest a systematic theoretical clarification, as it is a fundamental term of educational science(s). Distinguishing between educational theories in a narrow and a wider sense could be a fruitful step to achieve this goal.

As both university students and instructors perceived educational theories to be rather abstract and vague, which may be linked to the lack of a clear definition in the literature, these theories should be addressed explicitly in higher education to broaden students' and instructors' metaknowledge about educational theories such as regarding their benefits and functions. Concerning the fact that educators and aspiring educators are often unaware of their theory-related attitudes and beliefs and their potential interrelations with learning motivation and emotions, we consider it important to foster self-reflection on these aspects. Courses in science theory and propaedeutic could provide opportunities for this. A stronger reflection on these constructs, could support professional development and promote learning, teaching, and evidence-based practice [14].

In light of the findings of the present study, it seems necessary to provide students and instructors with more opportunities in educational studies to articulate their understandings, attitudes, and beliefs about educational theories. Instructors could use, for instance, questions similar to the interview guide of this study to direct the students' focus on educational theories and encourage them to discuss these theories on a metalevel. The aforementioned actors can, thereby, further develop their metacognitive and critical thinking by explicating and reflecting on their understandings, attitudes, and beliefs about educational theories [10,11].

Taken together, our study provides first insights into the novel topic of students' and teachers' attitudes and beliefs about educational theories and highlights their relevance. Our findings can be used as a stepping-stone for understanding and supporting how individuals react to and deal with educational theories in the course of their professionalization. In particular, this line of research can give rise to strategies and interventions for promoting and maintaining adaptive, as well as reducing maladaptive, theory-related attitudes and beliefs.

Author Contributions: Conceptualization, S.T.S. and M.D.; methodology, S.T.S. and M.D.; validation, M.D.; formal analysis, S.T.S. and M.D.; investigation, S.T.S.; resources, S.T.S.; data curation, S.T.S.; writing—original draft preparation, S.T.S.; writing—review and editing, M.D.; project administration, S.T.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Informed consent was obtained from all participants involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy and ethical concerns.

Acknowledgments: The authors are responsible for all contents of this publication. We thank Raven Rinas for proofreading the manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Aubrey, K.; Riley, A. *Understanding and Using Educational Theories*, 2nd ed.; Sage: London, UK, 2019; ISBN 9781526436610.
2. Orchard, J.; Winch, C. What Training do Teachers Need? Why Theory is Necessary to Good Teaching. *Impact* **2015**, *22*, 1–43. [[CrossRef](#)]
3. Green, H.J.; Hood, M. Significance of Epistemological Beliefs for Teaching and Learning Psychology: A Review. *Psychol. Learn. Teach.* **2013**, *12*, 168–178. [[CrossRef](#)]

4. Richardson, V. The Role of Attitudes and Beliefs in Learning to Teach. In *Handbook of Research on Teacher Education: A Project of the Association of Teacher Educators*, 2nd ed.; Sikula, J.P., Buttery, T., Guyton, E., Eds.; Macmillan: New York, NY, USA, 1996; pp. 102–119. ISBN 0028971949.
5. Diery, A.; Vogel, F.; Knogler, M.; Seidel, T. Evidence-Based Practice in Higher Education: Teacher Educators' Attitudes, Challenges, and Uses. *Front. Educ.* **2020**, *5*, 62. [\[CrossRef\]](#)
6. Baumert, J.; Kunter, M. The COACTIV Model of Teachers' Professional Competence. In *Cognitive Activation in the Mathematics Classroom and Professional Competence of Teachers: Results from the COACTIV Project*; Kunter, M., Ed.; Springer: New York, NY, USA; London, UK, 2013; pp. 25–48. ISBN 978-1-4614-5148-8.
7. Dye, V.L. Is Educational Theory Being Valued by Student Teachers in Further and Higher Education? *J. Vocat. Educ. Train.* **1999**, *51*, 305–319. [\[CrossRef\]](#)
8. Gitlin, A.; Barlow, L.; Burbank, M.D.; Kauchak, D.; Stevens, T. Pre-Service Teachers' Thinking on Research: Implications for Inquiry Oriented Teacher Education. *Teach. Teach. Educ.* **1999**, *15*, 753–769. [\[CrossRef\]](#)
9. Merk, S.; Rosman, T.; Rueß, J.; Syring, M.; Schneider, J. Pre-Service Teachers' Perceived Value of General Pedagogical Knowledge for Practice: Relations with Epistemic Beliefs and Source Beliefs. *PLoS ONE* **2017**, *12*, e0184971. [\[CrossRef\]](#)
10. Sjølie, E. The Role of Theory in Teacher Education: Reconsidered from a Student Teacher Perspective. *J. Curric. Stud.* **2014**, *46*, 729–750. [\[CrossRef\]](#)
11. Sjølie, E.; Østern, A.L. Student Teachers' Criticism of Teacher Education—Through the Lens of Practice Architectures. *Pedagog. Cult. Soc.* **2020**, *1*–18. [\[CrossRef\]](#)
12. Maio, G.R.; Haddock, G.; Verplanken, B. *The Psychology of Attitudes & Attitude Change*, 3rd ed.; Sage: Los Angeles, CA, USA, 2019; ISBN 9781526425836.
13. Helsper, W. *Professionalität und Professionalisierung Pädagogischen Handelns: Eine Einführung [Professionalism and Professionalization of Pedagogical Action: An Introduction]*; Barbara Budrich: Leverkusen, Germany, 2021; ISBN 3825254607.
14. Dewar, J.M.; Bennett, C.D.; Fisher, M.A. *The Scholarship of Teaching and Learning: A Guide for Scientists, Engineers, and Mathematicians*; OUP Oxford: Oxford, UK, 2018; ISBN 9780198821212.
15. Biesta, G.J.J. *Educational Research: An Unorthodox Introduction*; Bloomsbury: London, UK, 2020; ISBN 1350097977.
16. Matthes, E. What Can and What Should Prospective Teachers Learn in the Scientific Study of Pedagogy? *Bild. Erzieh.* **2007**, *60*, 149–163. [\[CrossRef\]](#)
17. Carr, W. Education Without Theory. *Br. J. Educ. Stud.* **2006**, *54*, 136–159. [\[CrossRef\]](#)
18. Lenzen, D. *Pädagogische Grundbegriffe: Band 1 [Basic Pedagogical Terms: Volume 1]*; Rowohlt: Reinbek, Germany, 2004.
19. Irby, B.J.; Brown, G.; Lara-Alecio, R.; Jackson, S. Preface. In *The Handbook of Educational Theories*; Irby, B.J., Brown, G., Lara-Alecio, R., Jackson, S., Eds.; IAP: Charlotte, CN, USA, 2013; ISBN 9781617358678.
20. *The Study of Education*; Tibble, J.W. (Ed.) Routledge & K. Paul: London, UK, 1966.
21. Hirst, P.H. Educational theory. In *The Study of Education*; Tibble, J.W., Ed.; Routledge & K. Paul: London, UK, 1966; pp. 29–58.
22. Biesta, G. Disciplines and Theory in the Academic Study of Education: A Comparative Analysis of the Anglo-American and Continental Construction of the Field. *Pedagog. Cult. Soc.* **2011**, *19*, 175–192. [\[CrossRef\]](#)
23. Prange, K. *Die Zeigestruktur der Erziehung: Grundriss der Operativen Pädagogik [The Pointing Structure of Education: Outline of Operative Pedagogy]*, 2nd ed.; Ferdinand Schöningh: Paderborn, Germany, 2012.
24. Sünkel, W. *Erziehungsbegriff und Erziehungsverhältnis: Allgemeine Theorie der Erziehung. Bd. 1 [Concept of Education and Educational Relationship: General Theory of Education, Vol. 1]*; Beltz: Weinheim, Germany, 2011; Volume 1.
25. Benner, D. *Allgemeine Pädagogik: Eine Systematisch-Problemgeschichtliche Einführung in die Grundstruktur Pädagogischen Denkens und Handlens [General Pedagogy: A Systematic and Problem-Historical Introduction to the Basic Structure of Pedagogical thought and Action]*, 8th ed.; Beltz: Weinheim, Germany, 2015; ISBN 9783779921813.
26. Biesta, G.J.J. *The Beautiful Risk of Education*; Routledge: London, UK; New York, NY, USA, 2014; ISBN 9781612050263.
27. Eagly, A.H.; Chaiken, S. The Advantages of an Inclusive Definition of Attitude. *Soc. Cogn.* **2007**, *25*, 582–602. [\[CrossRef\]](#)
28. Krosnick, J.A.; Judd, C.M.; Wittenbrink, B. The Measurement of Attitudes. In *The Handbook of Attitudes*, 2nd ed.; Albarracín, D., Johnson, B.T., Eds.; Routledge: New York, NY, USA, 2019; Volume 1: Basic Principles, pp. 45–106. ISBN 9781138648265.
29. Flick, U. *An Introduction to Qualitative Research*, 6th ed.; Sage: Los Angeles, LA, USA, 2018; ISBN 9781526445643.
30. Guyer, J.; Fabrigar, L. The Attitude-Behavior Link: A Review of the History. In *International Encyclopedia of the Social & Behavioral Sciences*, 2nd ed.; Wright, J.D., Ed.; Elsevier: Amsterdam, The Netherlands, 2015; pp. 183–189. ISBN 9780080970875.
31. Wicker, A.W. Attitudes versus Actions: The Relationship of Verbal and Overt Behavioral Responses to Attitude Objects. *J. Soc. Issues* **1969**, *25*, 41–78. [\[CrossRef\]](#)
32. Kraus, S.J. Attitudes and the Prediction of Behavior: A Meta-Analysis of the Empirical Literature. *Personal. Soc. Psychol. Bull.* **1995**, *21*, 58–75. [\[CrossRef\]](#)
33. Rodríguez, L.-F.; Ramos, F.; Wang, Y. Cognitive Computational Models of Emotions and Affective Behaviors. *Int. J. Softw. Sci. Comput. Intell.* **2012**, *4*, 41–63. [\[CrossRef\]](#)
34. Hofer, B.K. Epistemic Cognition as a Psychological Construct: Advancements and Challenges. In *Handbook of Epistemic Cognition*; Greene, J.A., Sandoval, W.A., Bråten, I., Eds.; Routledge: New York, NY, USA, 2016; pp. 19–38. ISBN 9781138013407.
35. Hofer, B.K.; Pintrich, P.R. The Development of Epistemological Theories: Beliefs About Knowledge and Knowing and Their Relation to Learning. *Rev. Educ. Res.* **1997**, *67*, 88–140. [\[CrossRef\]](#)

36. Schraw, G.; Olafson, L. Assessing Teachers' Beliefs: Challenges and Solutions. In *International Handbook of Research on Teachers' Beliefs*; Fives, H., Gill, M.G., Eds.; Routledge: New York, NY, USA, 2015; pp. 87–105. ISBN 9780203108437.
37. Witzel, A.; Reiter, H. *The Problem-Centred Interview: Principles and Practice*; Sage: Los Angeles, CA, USA, 2012; ISBN 9781849200998.
38. Hofer, B.K. Personal Epistemology Research: Implications for Learning and Teaching. *Educ. Psychol. Rev.* **2001**, *13*, 353–383. [\[CrossRef\]](#)
39. Mason, L.; Boscolo, P.; Tornatora, M.C.; Ronconi, L. Besides Knowledge: A Cross-Sectional Study on the Relations Between Epistemic Beliefs, Achievement Goals, Self-Beliefs, and Achievement in Science. *Instr. Sci.* **2013**, *41*, 49–79. [\[CrossRef\]](#)
40. Sinatra, G.M. Thoughts on Knowledge about Thinking about Knowledge. In *Handbook of Epistemic Cognition*; Greene, J.A., Sandoval, W.A., Bråten, I., Eds.; Routledge: New York, NY, USA, 2016; pp. 479–491. ISBN 9781138013407.
41. Daumiller, M.; Stupnisky, R.; Janke, S. Motivation of Higher Education Faculty: Theoretical Approaches, Empirical Evidence, and Future Directions. *Int. J. Educ. Res.* **2020**, *99*, 101502. [\[CrossRef\]](#)
42. Elliot, A.J. *Advances in Motivation Science*; Elliot, A.J., Ed.; Elsevier: Amsterdam, The Netherlands, 2020; Volume 7. [\[CrossRef\]](#)
43. Wirthwein, L.; Buch, S.R.; Schult, J.; Rost, D.H. General Versus Specific Achievement Goals: A Re-Examination. *Learn. Individ. Differ.* **2015**, *43*, 170–177. [\[CrossRef\]](#)
44. Daumiller, M.; Dresel, M. Teaching and Research: Specificity and Congruence of University Faculty Achievement Goals. *Int. J. Educ. Res.* **2020**, *99*, 101460. [\[CrossRef\]](#)
45. *International Handbook of Emotions in Education*; Pekrun, R.; Linnenbrink-Garcia, L. (Eds.) Routledge: New York, NY, USA, 2014; ISBN 9780203148211.
46. Pekrun, R.; Goetz, T.; Frenzel, A.C.; Barchfeld, P.; Perry, R.P. Measuring Emotions in Students' Learning and Performance: The Achievement Emotions Questionnaire (AEQ). *Contemp. Educ. Psychol.* **2011**, *36*, 36–48. [\[CrossRef\]](#)
47. Frenzel, A.C.; Goetz, T.; Lüdtke, O.; Pekrun, R.; Sutton, R.E. Emotional Transmission in the Classroom: Exploring the Relationship Between Teacher and Student Enjoyment. *J. Educ. Psychol.* **2009**, *101*, 705–716. [\[CrossRef\]](#)
48. Pekrun, R.; Goetz, T.; Titz, W.; Perry, R.P. Academic Emotions in Students' Self-Regulated Learning and Achievement: A Program of Qualitative and Quantitative Research. *Educ. Psychol.* **2002**, *37*, 91–105. [\[CrossRef\]](#)
49. Creswell, J.W.; Creswell, J.D. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th ed.; Sage: Thousand Oaks, CA, USA, 2018; ISBN 1506386717.
50. Kuckartz, U. *Qualitative Text: Analysis: A Guide to Methods, Practice & Using Software*; Sage: Los Angeles, LA, USA, 2014; ISBN 9781446267745.
51. German Educational Research Association. Code of Ethics of the German Educational Research Association (GERA). Available online: https://www.dgfe.de/fileadmin/OrdnerRedakteure/Satzung_etc/Ethikkodex_englisch.pdf (accessed on 1 February 2021).
52. Dunn, T.J.; Baguley, T.; Brunsden, V. From Alpha to Omega: A Practical Solution to the Pervasive Problem of Internal Consistency Estimation. *Br. J. Psychol.* **2014**, *105*, 399–412. [\[CrossRef\]](#) [\[PubMed\]](#)
53. Ziegler, A.; Dresel, M.; Stoeger, H. Addressees of Performance Goals. *J. Educ. Psychol.* **2008**, *100*, 643–654. [\[CrossRef\]](#)
54. Dietrich, J.; Viljaranta, J.; Moeller, J.; Kracke, B. Situational Expectancies and Task Values: Associations with Students' Effort. *Learn. Instr.* **2017**, *47*, 53–64. [\[CrossRef\]](#)
55. Daumiller, M.; Dickhäuser, O.; Dresel, M. University Instructors' Achievement Goals for Teaching. *J. Educ. Psychol.* **2019**, *111*, 131–148. [\[CrossRef\]](#)
56. Marsh, H.W. SEEQ: A Reliable, Valid, and Useful Instrument for Collecting Students' Evaluations of University Teaching. *Br. J. Educ. Psychol.* **1982**, *52*, 77–95. [\[CrossRef\]](#)
57. Krippendorff, K. *Content Analysis: An Introduction to Its Methodology*, 4th ed.; Sage: Los Angeles, CA, USA; London, UK, 2019; ISBN 9781506395661.
58. Newman, D.A. Missing Data. *Organ. Res. Methods* **2014**, *17*, 372–411. [\[CrossRef\]](#)