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Research paper

How do traditionally and alternatively certified teachers differ? A comparison of their motives for teaching, their well-being, and their intention to stay in the profession

Christin Lucksnat [a, *], Eric Richter [a], Stefan Schipolowski [b], Lars Hoffmann [b], Dirk Richter [a]

[a] University of Potsdam, Department of Education, Karl-Liebknecht-Straße 24-25, 14476, Potsdam, Germany
[b] Institute for Educational Quality Improvement (IQB), Unter Den Linden 6, 10099, Berlin, Germany

HIGHLIGHTS

- A first study comparing AC and TC teachers' motives for teaching and well-being.
- AC teachers do not possess less favorable characteristics than TC teachers.
- AC teachers report higher social influences and time for family as motives for teaching.
- AC teachers report higher enthusiasm.
- TC and AC teachers do not differ in their emotional exhaustion and intention to stay in the profession.

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ABSTRACT

This study investigates alternatively certified (AC) teachers' motives for teaching, their well-being, and their intention to stay in the profession. We conducted multivariate covariance analyses using a large-scale dataset of 446 traditionally certified (TC) teachers and 143 AC teachers at secondary schools in Germany. Findings show that AC teachers reported more frequently than TC teachers that they chose teaching due to social influences and because of more time for their family. Furthermore, AC teachers report significantly higher enthusiasm for teaching. No differences were found regarding emotional exhaustion or the intention to stay in the profession.

1. Introduction

Schools in many countries worldwide are facing serious teacher shortages (Ingersoll et al., 2018; Sutcher et al., 2019). To address teacher shortages, some countries offer alternative pathways into the teaching profession that allow individuals without a traditional teaching degree to become teachers. Although increasing numbers of alternatively certified (AC) teachers are becoming part of the teaching force, little is known about their specific characteristics and what distinguishes them from traditionally certified (TC) teachers.

Previous research has focused mainly on the phase before AC teachers enter the teaching profession and on topics such as their motives for teaching or aspects of alternative teacher education programs (for an overview, see Baeten & Meeus, 2016). However, these studies often do not include any comparison of AC and TC teachers. Moreover, there has been very little research into how AC teachers experience the teaching profession after starting their new career. Teachers' perceptions of their work affect their occupational well-being in both positive (e.g., job satisfaction or enthusiasm for teaching) and negative ways (e.g., emotional exhaustion) (Aldrup et al., 2018). Finally, little is known about AC teachers' intentions to stay in the profession. This is important since AC teachers can only help to remedy teacher shortages if they stay in the profession for a longer period of time.

The present paper aims to address these gaps in previous research. Using data from a large teacher survey conducted in Germany, we first compare AC and TC teachers' motives for teaching using the "factors influencing teaching choice" (FIT-Choice) framework developed by Watt and Richardson (2007), a detailed, validated model explaining why individuals choose teaching as a career. Second, we investigate differences in AC and

* Corresponding author.
E-mail address: lucksnat@uni-potsdam.de (C. Lucksnat).

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TC teachers' occupational well-being (Aldrup et al., 2018) and their intention to stay in the profession (Watt & Richardson, 2007). We start with a definition of AC teachers, a description of the situation in Germany, and a discussion of findings on motives for teaching, on occupational well-being, and on AC and TC teachers' intentions to continue teaching. Based on a review of the literature, we derive our research questions and hypotheses.

1.1. Different pathways into teaching: defining alternatively certified teachers

School authorities in many countries have begun to implement alternative pathways into the teaching profession (Baeten & Meeus, 2016; European Commission, 2018). Alternative teacher certification is an umbrella term that covers "all pathways into the teaching profession outside traditional teacher education programs" (Redding & Smith, 2016, p. 1087). Teachers who are certified in these programs can be referred to as alternatively certified (AC) teachers.

Alternative certification programs are created for a variety of reasons. In many countries, they are implemented primarily to combat teacher shortages. This is the case in Germany and other European countries such as Sweden, Switzerland, and Denmark, which have begun recruiting professionals or graduates from different professional fields to fill the high demand for teachers (European Commission, 2018). Other countries, such as the United States, have introduced AC programs as a means to recruit people from minority groups and diversify the teacher workforce (Bond et al., 2015; Villegas & Lucas, 2004). Alternative certification programs are also designed to enable teachers who have only emergency or temporary teaching licenses to acquire official teacher certification (Villegas & Lucas, 2004).

In Europe, many AC teachers are second-career teachers (European Commission, 2018). However, there are also other pathways leading into the teaching profession. In the United States, many AC teachers enter the teaching profession as a first career (Darling-Hammond, 2010). Moreover, some second-career teachers complete the same teacher training as first-career teachers and thus obtain a traditional teaching certification (Troesch & Bauer, 2020). Admission to alternative certification programs usually requires a bachelor's degree or similar (Tigchelaar et al., 2010). However, these programs differ in multiple respects, including duration: While some are just short summer programs lasting a few weeks, others require two years of training with integrated coursework, mentoring, and supervision (Darling-Hammond et al., 2002).

1.2. Alternative certification in Germany: A special case?

In Germany, teacher shortages are due above all to an imbalance between teacher supply and demand (Richter et al., 2018). On the one hand, the high demand for teachers arises from the large number of teachers reaching retirement age. In 2018, 42% of the teachers in German primary and secondary schools were 50 years or older (Eurostat, 2018). On the other hand, the supply of teachers is insufficient to meet the demand in specific subjects and school types. There is a particularly high demand for primary teachers, special education teachers, and vocational school teachers (Rackles, 2020). There is also a high demand for teachers of STEM subjects, English as a foreign language, art, and music, and a low demand for teachers of social science subjects such as geography and history (KMK, 2019, 2021).

To address the shortage of teachers in Germany, the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (KMK) provided alternative pathways for the training and certification of teachers for subjects and school types in which a high need has been identified (KMK, 2013). Germany offers two basic alternative pathways to teacher certification, which correspond to the structure of traditional teacher education in Germany.

Teacher education in Germany consists of two phases: university-based teacher education and an induction phase in a school. The first phase lasts approximately five years, and students choose at least two teaching subjects at the start of their university studies (Cortina & Hoover Thames, 2013). The second phase of teacher training is an in-school induction program, lasting from one to two years (depending on the federal state) that focuses on classroom management skills and pedagogical content knowledge (Cortina & Hoover Thames, 2013). At the end of the induction phase, student teachers are required to pass an exam to obtain certification to teach at a German school (Cortina & Hoover Thames, 2013).

The two-phase structure of teacher education is the foundation for the two alternative pathways to teacher certification in Germany. The first alternative pathway is called *Quereinstieg* and is designed for individuals who have completed a master's degree in a field other than teaching but one that relates to two school subjects. Individuals who meet these two prerequisites are allowed to enter the induction phase together with traditionally trained teachers. The second alternative pathway is the *Seiteneinstieg*. It also requires a master's degree outside of teaching, but in contrast to the first pathway, candidates are not required to have completed a degree related to two school subjects. Candidates do not complete the induction phase but receive on-the-job pedagogical training while working as teachers. The present paper covers AC teachers who enter the teaching profession through both pathways, the *Quereinstieg* and the *Seiteneinstieg*. The two cannot be distinguished in our analyses because we do not have any data about the specific pathway teachers have taken. However, both have in common that they did not complete the first phase of initial teacher training.

In summary, individuals in Germany, as well as other countries worldwide, can enter the teaching profession through a variety of different pathways. In light of the differences from traditional teacher education, teachers who have obtained their certification through alternative pathways might hold different motives for becoming teachers, feel differently prepared than traditional teachers, and might differ in their levels of well-being and intentions to stay in the job.

1.3. Changing careers: why do alternatively certified teachers choose teaching?

A variety of motives may drive the decision to become a teacher (Jungert et al., 2014). Research over the last two decades has highlighted altruistic, intrinsic, and extrinsic motives as the most important motives of aspiring teachers (Jungert et al., 2014; Watt & Richardson, 2008). Altruistic motives refer to the social value of the profession and may include the desire to help children or increase social equity. Intrinsic motives refer to the job itself and may include a passion to teach children. Extrinsic motives concern aspects such as job security, salaries, and vacation (Jungert et al., 2014).

Watt and Richardson (2007) integrated these three groups of motives into an empirically validated framework (FIT-Choice) based on expectancy value theory. Several studies have used this framework to examine the relationships between motives for teaching and pedagogical knowledge (König & Rothland, 2012), engagement (Jungert et al., 2014), and retention intention (Watt & Richardson, 2008). Moreover, several studies have highlighted differences in motives relating to teachers' gender (Struyven et al.,

2013), country (Watt et al., 2012), age (Watt & Richardson, 2008), and subjects (Glutsch et al., 2018). With regard to gender, studies found that female teachers had stronger altruistic and intrinsic motives than male teachers, who were guided more by extrinsic motives (Jungert et al., 2014; Struyven et al., 2013). With regard to age, a study by Struyven et al. (2013) showed that younger teacher education students were guided more by extrinsic motives such as good job prospects and an active social life, and that older students were less likely to have been influenced by peers in their decision to become a teacher.

Driven by the findings on the relevance of motives for teaching, recent studies on AC teachers have also addressed the question of why AC teachers, in particular, choose teaching as a career. Several early studies, most of them qualitative, demonstrated consistently that AC teachers were often motivated by a desire to work with children and make a contribution to society. Many AC teachers also reported prior experience in teaching as a reason for becoming a teacher (for an overview, see Baeten & Meeus, 2016). Other studies have shown that salary and social status are not decisive factors for AC teachers in becoming a teacher (Richardson & Watt, 2005). More recent studies using quantitative research designs have produced findings that are in line with qualitative research. In studies by Richardson et al. (2007) and Berger and D'Ascoli (2012), AC teachers reported teaching abilities and intrinsic value as the most important motives for their choice of teaching as a career. Furthermore, social utility constructs, such as working with and shaping the future of children and adolescents, as well as the desire to make a social contribution, had a significant influence on their decision. Participants reported low levels of agreement on the fallback career and social influences scales. They rated personal utility values, such as time for family and job security, at an average level (Berger & D'Ascoli, 2012; Richardson et al., 2007).

When comparing the findings on AC teachers' motives for teaching to results of the studies that have focused on TC teachers, similar patterns appear. In the case of traditionally certified pre-service teachers, for instance, intrinsic motivations outweigh extrinsic motivations (König & Rothland, 2012; Watt & Richardson, 2007). However, the vast majority of research has neglected to examine the two groups simultaneously. It therefore remains largely unclear whether and to what extent they differ.

Loretz et al. (2017) investigated differences in motives for teaching between 709 pre-service teachers in an AC program and 697 pre-service teachers in a TC program in Switzerland. The study found significant differences between the two groups in regard to their motives for teaching. On the one hand, AC pre-service teachers reported significantly higher educational interest (i.e., working with and shaping the future of children and adolescents) and higher ability beliefs than TC pre-service teachers. On the other hand, AC pre-service teachers rated utility (i.e., job security and time for family), social influences, and the difficulty of the program significantly lower than TC pre-service teachers. These findings were in line with the researchers' expectations: AC teachers made their career choice based on careful deliberation, and they knew exactly what they wanted from a career as teachers. It should be kept in mind, however, that the findings of Loretz et al. (2017) are not directly comparable with other studies focusing on different AC pathways. Other pathways may require different levels of investment and individual resources, depending, for example, on the length of the program or the depth of content. Individuals may therefore differ in their motivations for embarking on a specific alternative pathway.

1.4. Entering the classroom: how do alternatively certified teachers experience teaching?

While motives for teaching play a crucial role in the decision to become a teacher, occupational well-being is decisive for staying in the profession (Skaalvik & Skaalvik, 2011). For teachers, high occupational well-being results from an interplay between the presence of positive experiences and the absence of negative experiences (Aldrup et al., 2018). Positive aspects of teachers' occupational well-being include enthusiasm for teaching and job satisfaction, whereas negative aspects of occupational well-being include emotional exhaustion (Aldrup et al., 2018). The present study investigates both the positive and negative aspects of occupational well-being by focusing on both enthusiasm for teaching and emotional exhaustion. Enthusiasm for teaching refers to "the enjoyment, excitement, and pleasure that teachers experience for […] teaching" (Kunter et al., 2011, p. 291). In contrast, emotional exhaustion "involves feelings of being emotionally drained and depleted of emotional resources" (Klusmann et al., 2008, p. 703).

The importance of teachers' occupational well-being has been highlighted in research on the relationship between these positive and negative aspects on the one hand and teachers' instructional practice on the other. Findings indicate that high levels of enthusiasm for teaching and low levels of emotional exhaustion have a positive impact on teachers' instructional practice (Arens & Morin, 2016; Klusmann et al., 2008; Kunter et al., 2013).

Since these studies showed a connection between TC teachers' occupational well-being and instructional practice, it is important to investigate the occupational well-being of AC teachers as well. On the one hand, there are reasons why AC teachers might have lower occupational well-being than TC teachers. It can be assumed that they experience the job as more difficult since they receive less intensive professional preparation than TC teachers (Darling-Hammond et al., 2002). Furthermore, second-career AC teachers who entered the profession from non-educational fields might face even more challenges than AC teachers who previously worked in an educational field (Fry & Anderson, 2011). Klusmann et al. (2012) showed that teachers with more pedagogical experience felt less exhausted at the end of the school year, suggesting that prior teaching experience could play a vital role in teachers' occupational well-being. On the other hand, there are a number of reasons why AC teachers might experience higher occupational well-being. AC teachers who had a rocky career path before becoming a teacher might find a fulfilling job in teaching. Studies have indeed shown that career changers report high levels of resilience (Lucksnat et al., 2020; Wilkins & Comber, 2015), which in turn has a positive effect on teachers' occupational well-being (Klusmann et al., 2008).

To date, research comparing in-service AC and TC teachers' occupational well-being is scarce and inconsistent. A recent study on pre-service teachers' occupational well-being showed no significant differences in enthusiasm for teaching between AC and TC teachers (Lucksnat et al., 2020). However, the study also found that AC teachers have higher self-regulatory skills and are therefore better able to cope successfully with stress and occupational demands. A study by Troesch and Bauer (2017) explored differences in emotional exhaustion between first-career and traditionally certified second-career in-service teachers in Switzerland. They found no significant differences in emotional exhaustion between the two groups. They explain this finding by the higher levels of general self-efficacy in second-career teachers. Although their study pro-

vides first insights into emotional exhaustion in first-career and traditionally certified second-career teachers, the findings cannot be easily compared to other studies on AC teachers, since both the first- and second-career teachers in their sample all completed the same teacher education program.

1.5. Starting a new career: do alternatively certified teachers want to stay in the profession?

Teachers in many countries leave the profession before reaching retirement age (Geiger & Pivovarova, 2018). The attrition rate is especially high for teachers in their first three years in the profession (Geiger & Pivovarova, 2018; Skaalvik & Skaalvik, 2011). Studies have shown that the intention to leave the profession is a good predictor of the actual decision to leave or stay (Gersten et al., 2001; Sun & Wang, 2017). Teacher retention intention can be defined as the teacher's intention to stay at their current school (Jones & Watson, 2017; Van den Borre et al., 2021).

Previous studies looked at antecedents and consequences of teachers' retention intention and actual turnover. Van den Borre et al. (2021) indicated that teacher retention intention is influenced by (a) teachers' motivation to choose teaching as a career (e.g., high intrinsic motivation), (b) supporting resources when entering the teaching profession (e.g., mentoring) and, (c) supporting resources later in the teaching career (e.g., collaborative school cultures). Moreover, work experience outside of teaching may have an effect on the intention to leave or stay in the teaching profession (Van den Borre et al., 2021). A study by Wilkins and Comber (2015) found that career changers report high levels of resilience, which in turn has an effect on teachers' retention intention (Arnup & Bowles, 2016; Hong, 2012). In addition to these factors influencing teachers' retention intention, studies suggest that teacher attrition has negative consequences. Ronfeldt et al. (2013) demonstrated a negative effect on student outcomes. Moreover, teacher attrition is stressful for the teachers and school administrators who remain (Guin, 2004) and disrupts the school community (Hanselman et al., 2016).

These antecedents and consequences illustrate the importance of teacher retention. Particularly in times of teacher shortages, it is important to keep teachers in the profession (Kelchtermans, 2017). This applies to AC teachers as well: Their recruitment can only help to remedy teacher shortages if they stay in the profession. However, many AC teachers leave the profession within their first five years (Boyd et al., 2012). A study by Boyd et al. (2012) investigated the attrition rates of AC teachers in the two largest alternative certification programs in New York City: New York City Teaching Fellows (NYCTF) and Teach for America (TFA). They found that 49% of math teachers from NYCTF and 82% of AC teachers from TFA left the teaching profession by the end of their fifth year.

Empirical findings on differences between AC and TC teachers' intentions to remain in the profession are inconsistent. Whereas a study by Chambers Mack et al. (2019) found that AC teachers were two times more likely to quit the profession than TC teachers, Troesch and Bauer (2020) found that traditionally certified second-career teachers expressed a higher intention to stay than first-career teachers. However, the effect size for the difference between AC and TC teachers was small ($g = 0.13$), and both groups reported a relatively high intention to stay in the profession. The authors attribute this finding to selective drop-out: Second-career teachers with a high intention to leave had already left the teaching profession long before and were thus excluded from their study. A recent study on AC teachers in Germany showed a high intention to stay of newly qualified AC teachers at the beginning of their career (Richter, Lucksnat, Redding, & Richter, 2022).

2. The present investigation

The composition of the teaching force is changing in countries such as the United Kingdom, the United States, and Germany with the increasing recruitment of AC teachers (O'Connor et al., 2011). Previous research has examined AC teachers' motives for teaching, but due to several limitations, it is difficult to compare findings. Moreover, little is known about AC teachers' occupational well-being and intention to stay. Finally, no study to date has compared in-service AC and TC teachers in their motives for teaching, occupational well-being, or intention to stay within the same sample. A comparison of AC and TC teachers within the same educational system opens up the opportunity to examine how AC and TC teachers differ from each other, not only in their motives for teaching but also in their occupational well-being and their professional practice. The present study addresses these limitations by comparing motives for teaching, occupational well-being, and intention to stay in AC and TC in-service teachers. The study was guided by two research questions:

Research Question 1: Do AC and TC teachers differ in their motives for choosing teaching as a career?

Since previous empirical research on differences between AC and TC teachers in regard to their motives for teaching is scarce, deriving directed hypotheses is difficult. Therefore, we investigated differences in the motives for teaching in an exploratory manner.

Research Question 2: Do AC and TC teachers differ in their occupational well-being and their intention to stay in the profession?

In the present study, we operationalized teachers' occupational well-being as enthusiasm for teaching and emotional exhaustion (Aldrup et al., 2018). Since both aspects may have an impact on teachers' instructional practice, we investigated differences between AC and TC teachers in regard to their emotional exhaustion and enthusiasm for teaching. Previous research has shown that traditionally certified first- and second-career teachers do not differ in their emotional exhaustion (Troesch & Bauer, 2017). However, since alternative certification programs are often much shorter than traditional programs, it can be assumed that they do not offer the same intensity and quality of training (Darling-Hammond et al., 2002). Therefore, it can be assumed that AC teachers feel more challenged and thus experience higher levels of emotional exhaustion than TC teachers. We subjected differences in AC and TC teachers' enthusiasm for teaching to exploratory investigation. Past studies on the intention to leave the profession produced different results for AC and TC teachers. However, we expected both groups of teachers to show a high intention to stay in the profession, with AC teachers having lower intentions to stay than TC teachers (Chambers Mack et al., 2019).

We included teachers' gender, school track, age at career start, and experience as a substitute teacher (as one form of prior experience in a pedagogical field) as control variables in the analyses because they have been shown to be related to teachers' motives for teaching, occupational well-being, and intention to stay in the literature (e.g., Struyven et al., 2013; Watt & Richardson, 2008; Fry & Anderson, 2011; Klusmann et al., 2012). We therefore want to control for the effects of these variables when comparing AC and TC teachers.

3. Method

3.1. Sample

The data used in the present study were collected in a teacher survey that was conducted by the German Institute for Educational Quality Improvement (IQB) in 2019. The study was carried out in

Table 1
Descriptive statistics on sociodemographic and occupational characteristics and practical pedagogical experience of TC and AC teachers before entering the teaching profession.

	TC teachers		AC teachers		Group comparison		
	%		%		χ^2	*p*	*OR*
Gender (proportion female)	72.6		44.6		36.79	<.01	0.30
School track (proportion academic track)	14.0		24.4		8.78	<.01	2.00
	M	*SD*	*M*	*SD*	*F*	*p*	*d*
Age (in years)	42.9	10.6	45.1	10.2	4.75	.04	.21
Age (career start) (in years)	29.0	4.8	37.5	8.4	196.09	<.01	1.37
Teaching experience (in years)	14.0	10.5	7.6	7.0	38.39	<.01	.60
Teaching load (in hours per week)	23.3	4.9	22.2	5.3	6.10	.01	.24
High school GPA[1]	2.4	0.6	2.3	0.6	0.61	.43	.08
Practical pedagogical experience[2] (substitute teacher)	1.96	2.25	3.69	4.43	7.58	<.01	.55

Note. [1] Lower grade indicate a better GPA, with 1.0 being the best grade. [2] The duration of practical pedagogical experience is given in years.

nine federal states in Germany and included 603 teachers from a random sample of 264 secondary schools. The study also included language proficiency tests in German and English as a foreign language for ninth-grade students in a randomly drawn class in each school. In each selected school, all German and English teachers of the selected class and all AC teachers in the school as a whole (independent of class and subject area) were invited to complete a questionnaire about their teacher training, motives for teaching, occupational well-being, and intention to stay in the profession. Given the large sample of randomly drawn schools including all general-education school types from several states across Germany, and given that study participation was mandatory in most states, the teacher sample used in the present study can be regarded as closely resembling the population of teachers at secondary schools in Germany. One limitation is that only TC teachers of two subjects (German and English) were included.

The AC and TC teachers were identified based on the question of what program of study they had completed to become teachers. Teachers reporting that they graduated from a traditional teaching program were classified as TC teachers. Teachers who graduated from a program that did not lead to a teaching degree were classified as AC teachers. Twelve cases were excluded from the analysis since these teachers graduated from a teacher education program outside of Germany but completed an alternative certification program in Germany. Two teachers did not provide information about the program of study they had completed and could not be assigned to either of the two groups. The 14 excluded cases do not differ significantly in sociodemographic characteristics, occupational characteristics, or any dependent variable from the cases included in the study. In sum, the sample includes a total number of 589 teachers, with 446 (75%) TC teachers and 143 (25%) AC teachers. The mean age of all participating teachers was 44 years ($SD = 10.6$), and the majority of participants were women (65%). A large proportion of the teachers sampled taught at non-academic-track schools[1] (83%).

The AC and TC teachers differed significantly in their sociodemographic and occupational characteristics (Table 1). AC teachers were more likely to be male and to work at academic-track schools than TC teachers. Furthermore, the AC teachers were older when they entered the teaching profession, had less teaching experience, and had a lower teaching load than their traditionally certified colleagues. The two groups did not differ in their high school grade point average (GPA). Moreover, the AC teachers had spent more time than TC teachers in other educational fields before entering the teaching profession, in this case, working as substitute teachers (Table 1).

3.2. Measures

An online questionnaire was administered to assess teachers' sociodemographic and occupational characteristics as well as information about their teacher training. The survey included established instruments to assess teachers' motives for teaching, their occupational well-being, and their intention to stay in the profession.

3.2.1. Motives for teaching

Teachers' motives for teaching were assessed with a translated version of the FIT-Choice scale (Watt & Richardson, 2007). The translation into German was carried out by a team of bilingual researchers who used the instrument in an international comparison between Germany and Australia (Watt et al., 2012). This study has demonstrated the valid translation of all items from English to German. The instrument consists of eleven subscales (with two to four items each). Prompted by the instruction "Please state your primary reason for becoming a teacher. For each statement below, please rate how important it was in your decision to become a teacher," teachers were asked to rate the importance of the items on a seven-point Likert scale (1 = not at all important to 7 = extremely important). Before performing the analyses, we evaluated the reliability of the constructs using Cronbach's α and tested for measurement invariance across groups. All subscales except fallback career were sufficiently reliable ($0.70 < \alpha < 0.91$; Table 2). Thus, fallback career ($\alpha = 0.57$) was excluded from the analyses. We also conducted multi-group confirmatory factor analysis (MGCFA, Brown, Harris, O'Quin, & Lane, 2017) to check for scalar invariance. Before comparing mean differences between groups, scalar invariance must be demonstrated: "Scalar invariance tests the equality whether the two groups use the response scale in a similar way" (Lavoie & Douglas, 2012, p. 51). Based on the rules of partial measurement invariance (Byrne et al., 1989), all but two scales fulfilled the requirements for scalar invariance across groups. Therefore, the two scales that did not meet the requirements (working with children and adolescents as well as increasing social equity) were excluded from the analyses.

3.2.2. Occupational well-being

Two scales were used to assess teachers' occupational well-being. First, *enthusiasm for teaching* was assessed with an

[1] In Germany, the secondary school system distinguishes between the academic and non-academic track. Secondary schools with an academic track (e.g., Gymnasium) provide students with university entrance qualifications. Non-academic-track secondary schools (e.g., Realschule, Hauptschule) provide basic qualifications and practical skills and thus prepare students mainly for vocational training Cortina and Hoover Thames (2013).

established German instrument developed by Kunter et al. (2011). Teachers were asked to rate their agreement with four items (e.g., "Teaching is one of my favorite activities") on a four-point Likert scale (1 = disagree to 4 = agree). The internal consistency of the scale was good (α = 0.84). Secondly, *emotional exhaustion* was measured following a German adaptation (see Enzmann & Kleiber, 1989, for a more detailed description of the translation process) of the Maslach Burnout Inventory (Maslach et al., 1996), which is an established and frequently used instrument in contemporary research (e.g., Aldrup et al., 2018; Klusmann et al., 2012). Teachers were asked to rate their agreement with seven items (e.g., "I often feel exhausted at school.") on a four-point Likert scale (1 = disagree to 4 = agree). The selection of these items was based on psychometric criteria from data from previous teachers' studies by the IQB. Internal consistency of the scale was good (α = 0.80; Table 2).

3.2.3. Intention to stay

A single item was used to assess teachers' *intention to stay in the profession,* which originated from the FIT-Choice framework of Richardson et al. (2007) and was translated by the German Institute of Educational Quality Improvement using a process of translation and back-translation (Table 2). Teachers were asked to rate the question "How sure are you that you will stay in the teaching profession?" on a seven-point Likert scale (1 = not at all sure to 7 = extremely sure). It must be noted that retention intention is not the same as actually leaving or staying in the profession. As Van den Borre et al. (2021) pointed out, it is always possible that teachers will change their minds later. However, previous studies showed that retention intention moderately predicts actual turnover (Cho & Lewis, 2012; Sun & Wang, 2017).

3.2.4. Control variables

Teachers' gender, school track, age at career start, and experience as a substitute teacher were included as control variables. Teachers were asked about their gender and their school track (academic vs. non-academic track). The age at career start was calculated based on the difference between the current age and the years of teaching experience. Moreover, teachers were asked to specify their previous teaching experience. We specifically asked the teachers about their experience as a substitute to control for differences in their prior teaching skills. This information was included as a dummy variable in the MANCOVA models.

Table 3 presents the correlations between the motives for teaching, teachers' occupational well-being, and the intention to stay. The findings show that almost all motives for teaching correlate at a low to moderate level with each other. In particular, perceived teaching ability shows the strongest correlations with intrinsic career value, shaping the future of children and adolescents, as well as making a social contribution. Perceived teaching ability and intrinsic career value are also strongly correlated with teachers' occupational well-being and intention to stay. We also find that teachers' enthusiasm for teaching correlates negatively with their emotional exhaustion and positively with their intention to stay. Teachers' emotional exhaustion, however, correlates negatively with their intention to stay. Correlations between the dependent variables and the control variables are reported in Appendix A.

3.3. Statistical analysis

We performed two multivariate analyses of covariance (MANCOVA) to compare the means of the selected dependent variables. We controlled for teachers' gender, age at career start, school track, and experience as a substitute teacher because AC and TC teachers differ significantly in these variables. The alpha level was set at 5%. The approach of multivariate analysis has various advantages over separate univariate tests. Conducting a large number of separate univariate tests could lead to erroneous differences between the groups. The most important advantage of a MANCOVA is that it makes it possible to control for the alpha error level for the large number of comparisons carried out for AC and TC teachers (Stevens, 2002).

We also checked the proportion of missing data for each variable. On average, only 2.3% of all responses were missing for teachers' sociodemographic and occupational characteristics, ranging from no missing data for school track to 3.7% for age at career start. Teachers with missing data on gender and age at career start do not differ in their motives for teaching, occupational well-being, or intention to stay. Furthermore, the missing data on motives for teaching ranged from 2.9% for perceived teaching abilities to 4.7% for social influences. The average percentage of missing data for occupational well-being and intention to stay was below 3.0%.

A recommended procedure for handling missing values is multiple imputation (Cox et al., 2014), which is the method of

Table 2
Descriptive statistics, example items, and reliabilities of teachers' motives for teaching, occupational well-being, and intention to stay.

Scale	Example items	***N*** (Items)	*M*	*SD*	α
Socialization influences					
Prior teaching and learning experiences	"… I have had inspirational teachers."	3	4.35	1.76	.90
Social influences	"… my friends think I should become a teacher."	3	2.50	1.62	.85
Self-perceptions					
Perceived teaching abilities	"… I have the qualities of a good teacher."	3	5.54	1.15	.83
Intrinsic value					
Intrinsic career value	"… I like teaching."	2	6.16	1.05	.70
Personal utility value					
Job security	"… teaching will offer a steady career path."	3	4.19	1.78	.93
Time for family	"… part-time teaching could allow more family time."	3	3.62	1.86	.91
Social utility value					
Shaping the future of children/adolescents	"… teaching will allow me to influence the next generation."	2	5.53	1.31	.70
Making a social contribution	"… teaching will allow me to provide a service to society."	2	5.43	1.46	.87
Occupational well-being					
Enthusiasm for teaching	"Teaching is one of my favorite activities."	5	3.48	0.46	.84
Emotional exhaustion	"I often feel exhausted at school."	7	1.96	0.54	.80
Retention intention					
Intention to stay	"How sure are you that you will stay in the teaching profession?"	1	6.00	1.43	–

Note. Response scale for motives for teaching and intention to stay: 1 = not at all important to 7 = extremely important. For occupational well-being: 1 = disagree to 4 = fully agree. The scales for fallback career, increasing social equity, and working with children/adolescents were not included in the analyses due to low reliability or non-invariant measurement across groups.

Table 3
Intercorrelations between motives for teaching (1–8), teachers' occupational well-being (9-10), and intention to stay (11).

Scale	Motives for teaching								Occupational well-being		Intention to stay
	1	2	3	4	5	6	7	8	9	10	11
1. Prior teaching and learning experiences		.20**	.28**	.28**	.11**	.12**	.37**	.31**	.23**	-.05	.08
2. Social influences			.16**	-.01	.30**	.31**	.17**	.17**	-.01	.07	-.02
3. Perceived teaching abilities				.63**	.17**	.17**	.57**	.58**	.37**	-.19**	.18**
4. Intrinsic career value					.03	.09*	.44**	.39**	.46**	-.19**	.24**
5. Job security						.59**	.19**	.16**	-.03	.07	.09*
6. Time for family							.15**	.10*	.00	.00	.07
7. Shaping the future of children/adolescents								.76**	.28**	-.07	.15**
8. Making a social contribution									.26**	-.12**	.14**
9. Enthusiasm for teaching										-.38**	.41**
10. Emotional exhaustion											-.34**
11. Intention to stay											

Note. *$p < .05$; **$p < .01$; ***$p < .01$.

choice in the present study. For this purpose, we included socio-demographic and occupational characteristics of the teachers (gender, age at career start, school track, and experience as a substitute teacher) as well as all dependent variables of the MANCOVA in the imputation, and a total of 20 imputed datasets were generated in SPSS 26. The resulting datasets were analyzed separately and pooled according to the rules of Rubin (1987). The pooling procedure for the *p*-values of the MANCOVA was based on a proposal by Finch (2016).

4. Results

4.1. Differences between AC and TC teachers' motives for teaching

The first research question addresses the differences between AC and TC teachers' motives for choosing teaching as a career. Intrinsic career value, ability beliefs, and shaping the future of children and adolescents were rated by AC teachers as well as by TC teachers as their most important motives. Social influences and time for family were rated as the least important by both groups. The results of the group comparison indicate significant differences between AC and TC teachers for two out of eight motives for teaching (Table 4). AC teachers reported a significantly higher importance of social influences ($p < .01$; $\eta^2 = 0.03$) and time for family ($p < .01$; $\eta^2 = 0.01$) in their career choice. The effect sizes of all the significant differences are small. No differences were found for the remaining motives.

Considering the large difference in sample size between the AC (143) and TC (446) teachers, we drew a random sample of 150 TC teachers and performed the analyses again with the now comparable sample sizes as a cross-validation of our results. The results of the cross-validation are reported in Appendix B. We were able to replicate all of the results for motives for teaching in the cross-validation analyses.

We controlled for differences in gender, age at career start, school track, and experience as a substitute teacher. We found the control variables to have an effect on teachers' motives for teaching: Intrinsic career value was rated significantly more important by female than by male teachers ($p < .01$; $\eta^2 = 0.01$), who in turn rated job security as more important ($p < .01$; $\eta^2 = 0.01$). Furthermore, teachers from academic track schools were significantly more influenced by prior teaching and learning experience

Table 4
Descriptive statistics on TC and AC teachers' motives for teaching, occupational well-being, and intention to stay and results of the multivariate analysis of variance and covariance.

Scale	TC teachers		AC teachers		*MANCOVA*	
	M	***SD***	***M***	***SD***	***p***	**η^2**
Socialization influences						
Prior teaching and learning experiences	4.43	1.79	4.18	1.68	.71	.00
Social influences	2.33	1.50	3.12	1.84	<.01	.03
Self-perceptions						
Perceived teaching abilities	5.48	1.19	5.66	1.09	.08	.01
Intrinsic value						
Intrinsic career value	6.11	1.11	6.22	0.95	.10	.00
Personal utility value						
Job security	4.12	1.74	4.42	1.83	.16	.00
Time for family	3.52	1.85	3.99	1.82	<.01	.01
Social utility value						
Shaping the future of children/adolescents	5.50	1.30	5.62	1.35	.29	.00
Making a social contribution	5.39	1.47	5.53	1.43	.59	.00
Occupational well-being						
Enthusiasm for teaching	3.42	0.48	3.53	0.49	<.01	.01
Emotional exhaustion	2.00	0.54	1.85	0.53	.07	.01
Retention intention						
Intention to stay	5.94	1.46	6.13	1.37	.31	.00

Note. Response scale for motives for teaching and intention to stay: 1 = not at all important to 7 = extremely important. For occupational well-being: 1 = disagree to 4 = fully agree. In MANCOVA controlling for gender, age at career start, school track (academic track vs. non-academic track), and working experience as a substitute teacher. The reported means, standard deviations, and *p*-values are based on the data from the multiple imputation controlling for the covariates. *M* = mean, *SD* = standard deviation, *p* = statistical significance, η^2 = variance explained by dependent variable.

than teachers from non-academic-track schools ($p = .02$; $\eta^2 = 0.01$). Teachers with experience as substitute teachers before entering the teaching profession reported higher intrinsic career value ($p = .04$; $\eta^2 = 0.01$), higher perceived teaching ability ($p = .02$; $\eta^2 = 0.01$), and a stronger wish to shape the future of children and adolescents ($p = .04$; $\eta^2 = 0.01$) compared to teachers without this prior pedagogical experience. Finally, age at career start did not make a difference in the motives for teaching in general.

Based on the differences in the control variables regarding the motives for teaching, and since we found significant differences in the control variables between AC and TC teachers, we included the interaction between each control variable and group of teachers (AC vs. TC teacher) in the MANCOVA. For gender, school track, and experience as a substitute teacher, these analyses revealed no significant differences. In other words: AC and TC teachers did not differ on the control variables in their motives for teaching. Regarding the interaction between the two groups of teachers and their age at career start, the analyses showed that the relationship between age at career start and the motives for teaching differed between the two groups of teachers. For example, for AC teachers, age at career start is positively related to the motive of making a social contribution, while the relationship is negative for TC teachers ($p = .02$; $\eta^2 = 0.01$). This means that older AC teachers place more value on making a social contribution than younger AC teachers. In contrast, the motive of making a social contribution is more important for younger TC teachers than for older TC teachers. This finding also applies to the motives of perceived teaching ability ($p = .03$; $\eta^2 = 0.01$), intrinsic career value ($p = .01$; $\eta^2 = 0.01$), shaping the future of children and adolescents ($p = .01$; $\eta^2 = 0.01$), and prior learning and teaching experience ($p < .01$; $\eta^2 = 0.01$). All interaction effects are small in size.

4.2. Differences between AC and TC teachers' occupational well-being and intention to stay in the profession

The second aim of this paper was to investigate differences between AC and TC teachers regarding their occupational well-being and their intention to stay in the profession. Teachers' occupational well-being was assessed in terms of their enthusiasm for teaching and emotional exhaustion. As in the first research question, we conducted a MANCOVA controlling for gender, age at career start, school track, and experience as a substitute teacher. The results shown in Table 4 indicate significant differences between AC and TC teachers for one of the three constructs: AC teachers reported significantly higher enthusiasm for teaching ($p = .02$; $\eta^2 = 0.02$) with a small effect size. No differences were found regarding emotional exhaustion or the intention to stay in the profession.

We also performed cross-validation analyses for teachers' occupational well-being and intention to stay (see Appendix B). We were able to replicate all but the results for enthusiasm for teaching in the cross-validation analyses. Although the means for enthusiasm are comparable to those in the analyses with the overall sample, the p-value differs due to the smaller sample size.

We also found significant differences regarding the control variables school track, gender, and experience as a substitute teacher. Teachers at academic-track schools were significantly more enthusiastic about teaching than teachers at non-academic-track schools ($p = .02$; $\eta^2 = 0.01$). This also applies to female teachers compared to male teachers ($p < .01$; $\eta^2 = 0.02$) and teachers with experience as a substitute teacher compared to teachers without that experience ($p = .04$; $\eta^2 = 0.01$).

In light of this difference in the control variables, which also differed significantly between AC and TC teachers, we included the interaction between the control variables and the group of teachers (AC vs. TC teacher) in the MANCOVA. These analyses revealed no significant differences between AC and TC teachers within school track, gender, and experience as a substitute teacher for enthusiasm, emotional exhaustion, or the intention to stay.

In contrast, the analyses revealed that the age at career start has a differential effect on enthusiasm ($p = .02$; $\eta^2 = 0.01$) and the intention to stay ($p = .03$; $\eta^2 = 0.01$) within the groups of AC and TC teachers. On the one hand, AC teachers who were older at career start reported higher enthusiasm for teaching and a higher intention to stay in the profession than younger AC teachers. On the other hand, younger TC teachers reported higher enthusiasm and a higher intention to stay than older TC teachers. All the differences were small in size.

5. Discussion

The present study aimed to answer two research questions: The first research question was guided by the FIT-Choice framework (Watt & Richardson, 2007) and investigated differences in AC and TC teachers' motives for choosing teaching as a career. The second research question addressed differences between AC and TC teachers' occupational well-being and their intention to stay in the profession. We used data from a teacher survey of 443 TC teachers and 143 AC teachers who work at schools in Germany, most of them teaching English and German.[2] The findings indicate that AC and TC teachers differ in the motives of time for family and social influences, with AC teachers reporting a higher importance of these motives. In addition, we found differences between the two groups regarding their enthusiasm, with AC teachers reporting higher enthusiasm for teaching than TC teachers. No differences were found regarding emotional exhaustion or the intention to stay.

It must be noted that the findings presented in this paper apply primarily to the German school context, since AC teachers here are career changers, having occupational experience in other professions than teaching. This is different from other national contexts, for instance, the United States, where many AC teachers take up teaching as their first career (Darling-Hammond, 2010). While other studies focused on AC teachers at the beginning of their careers, the present study examined AC teachers with different levels of teaching experience. Since the turnover rate is highest among beginning teachers (Redding & Nguyen, 2020) and even higher for AC teachers (Redding & Henry, 2019), it must be noted that the present study looked mainly at teachers who "survived" their first years of teaching and did not leave the profession. This aspect could possibly explain the results found in this study and must be kept in mind when interpreting them.

5.1. Do AC and TC teachers differ in their motives for teaching?

In the present study, AC teachers rated intrinsic career value and their perceived teaching ability as the most important factors in choosing teaching as a career, closely followed by social utility values (i.e., shaping the future of children and adolescents or making a social contribution). The motives of time for family and social influences were the least important factors for AC teachers. The order of the motives for teaching for AC teachers in our study is comparable to previous findings reported by Richardson et al. (2007). Moreover, the finding that AC teachers rate intrinsic motives higher in importance than extrinsic motives coincide with findings by Loretz et al. (2017) on career changers at the beginning

[2] To increase the number of AC teachers, all AC teachers at the chosen schools took part in the survey, even if they did not teach English or German.

of a university-based alternative certification program.

However, when looking at the comparative results, we see that the motives of time for family and social influences were significantly more important for AC teachers than for TC teachers. This result contrasts with findings by Loretz et al. (2017) showing that compared to AC teachers who had switched from a different career to teaching, first-career TC teachers rated the compatibility of family and career and social influences more important, although career changers who had children, were married, or came from a field with less flexible working hours were more influenced by the compatibility of career and family. It might be that fewer career changers who had children or were married chose a university-based alternative certification program due to the loss of income that would result from giving up a job to attend classes. Thus, career changers in the study by Loretz et al. (2017) might be less influenced by factors of time for family or security. Our study focused on AC teachers who did not complete their teacher training at a university. More studies are needed that look at differences between AC and TC teachers' motives for teaching and take individual characteristics, such as marital status, having children, teaching experience, and previous working conditions into account.

In sum, despite the differences in samples, the order of the motives is comparable to other studies. However, the differences between AC and TC teachers' motives are not in line with Loretz et al. (2017), which might be due to the fact that Loretz et al. (2017) focused on younger AC teachers in a university-based program.

We found that time for family and social influences are more important motives for AC teachers than for TC teachers. There are a number of possible explanations for this finding. According to Bandura (1997), verbal social persuasion can be used to enhance people's ability beliefs, which in turn leads individuals to invest more effort in mastering a given activity. Building on the social cognitive career theory of Lent et al. (1994), individuals who believe that they have a needed ability and consider themselves to be effective are more likely to develop an interest in a career or career change. Studies on career change in general have shown that individuals are more likely to make a career change when they have a large network of supporters, such as family, friends, and co-workers, whom they perceive as providing social support (Carless & Arnup, 2011; Higgins, 2001). Thus, it can be assumed that social influences and the support of family, friends, and co-workers play a more important role in the decision to become a teacher for AC teachers than for TC teachers.

Furthermore, TC and AC teachers differ in the motive of time for family, with AC teachers reporting a higher importance of this motive. This difference could be explained by the finding that the AC teachers in this sample were about ten years older at career start than the TC teachers. Thus, the AC teachers were more likely to have started a family prior to beginning their career, whereas the TC teachers were likely to have started a family while already working in their career. This finding is in line with previous research showing that individuals changing to a career in teaching also consider pragmatic reasons such as family-friendly working conditions in addition to intrinsic motives (Richardson & Watt, 2005; Williams & Forgasz, 2009). Having more time for family can be regarded as a factor pulling individuals into the teaching profession. Moreover, other jobs that AC teachers held might not have satisfied their need for balance between work and family life, which might have pushed them out of their previous career (Anthony & Ord, 2008; Coppe et al., 2021; Richardson & Watt, 2005).

In addition, we found that the control variables were related to teachers' motives for choosing teaching as a career. For example, we found that teachers with experience as substitute teachers reported a higher intrinsic career value, a higher perceived teaching ability, and a stronger desire to shape the future of children and adolescents. This indicates that individuals who have spent time in different educational settings demonstrate a more positive set of motives for teaching compared to individuals who entered the teaching profession without these experiences. This finding may have implications for the hiring of TC teachers, but especially for AC teachers. Schools hiring AC teachers should consider the applicant's prior experience and could give preference to those who have completed teaching internships, have teaching experience, or have worked with children in different educational settings. States could also require future AC teachers to complete a teaching internship prior to entering the teaching job.

Furthermore, we found that AC teachers who were older at career start reported a higher importance of perceived teaching ability, intrinsic career value, shaping the future of children and adolescents, prior learning, and teaching experiences as well as making a social contribution than their younger AC counterparts. Although this difference is small, changing a career always requires high motivation, but this is especially the case for older career changers, who may be less flexible and adaptable due to their life circumstances (Mayer, 2006). As our sample consists of individuals who have entered the teaching profession at different stages of their career, we were able to demonstrate that older career changers did in fact report higher intrinsic motives for teaching than career changers who made this decision at an earlier point in life. This finding may have practical implications for policy-makers and school administrators, who could develop opportunities to foster intrinsic motivation in younger AC teachers. A study by König et al. (2016) showed that the motives for teaching can be changed through the support of mentors. Teachers who received a high amount of mentoring support showed positive changes in their intrinsic motivation (perceived teaching ability, and intrinsic career value) (König et al., 2016). Schools hiring AC teachers should therefore provide a mentor who offers social support and assistance with daily tasks such as lesson planning or redirecting student misbehavior to foster higher intrinsic motivation. This could prevent the loss of AC teachers due to insufficient intrinsic motivation for the job.

Do AC and TC teachers differ in their occupational well-being and in their intention to stay in the profession? Our second research question addressed the differences between AC and TC teachers' occupational well-being and their intention to stay in the profession. The present study showed that AC and TC teachers reported high levels of enthusiasm for teaching, indicating that both AC and TC teachers enjoy their work. AC teachers reported being significantly more enthusiastic about teaching than TC teachers. However, it must be noted that this difference is small. Moreover, we found no differences regarding emotional exhaustion. We see three explanations for this null finding.

First, we expected that AC teachers would feel more emotionally exhausted than TC teachers due to the new challenges of teaching and the shorter preparation offered in alternative certification programs (Darling-Hammond et al., 2002). However, it might be that AC teachers are able to cope successfully with stressful situations due to their previous career experiences. In this context, other studies have shown that career changers report high levels of resilience (Lucksnat et al., 2020; Wilkins & Comber, 2015) and thus bring skills that are useful for managing challenges successfully. A second explanation might be that the AC teachers made a carefully

considered decision to change to a career in teaching and thus anticipated possible challenges. Third, the null finding might be traced back to the fact that our sample consists mainly of experienced teachers, and thus those who have "survived" the first few years of teaching. AC teachers with difficulties managing new challenges might therefore have already left the profession.

Similar to our findings on occupational well-being, our findings on retention intention show a strong intention to stay in the profession in both groups, with no significant difference between them. This finding differs from previous observations that AC teachers are more likely to leave the profession than TC teachers, and that in most cases, their withdrawal from the teaching profession occurs during the first five years (Boyd et al., 2012; Chambers Mack et al., 2019). This discrepancy might result from the distinctive features of the German education system. Specifically, the teaching profession in Germany provides a comparatively high degree of job security and high salaries by international standards, since most teachers are civil servants with permanent contracts (Cortina & Hoover Thames, 2013). This contextual difference from other countries might have led to our distinctive finding that AC and TC teachers showed comparable levels of intention to stay in the profession (see for an overview, Baeten & Meeus, 2016).

In addition, we investigated whether the control variables had an effect on differences in AC and TC teachers' well-being and intention to stay. We found that AC teachers who were older at career start reported higher enthusiasm for teaching and a higher intention to stay in the profession than younger AC teachers. This finding is in line with previous research by Borman and Dowling (2008) showing that teachers who were older at the start of their careers were less likely to leave the profession. It could be assumed that older individuals who changed to teaching from a different career are highly enthusiastic about their new profession and had gone through a thorough decision-making process before making the change. Moreover, Watt and Richardson (2008) found that younger beginning teachers were more likely to be highly engaged switchers, making them more likely to switch to another career. For this group of teachers, the teaching career is a place to try out new things or serves as a back-up or a stepping stone to other careers (Watt & Richardson, 2008). For young people, flexibility and mobility in a career are of high value (Mayer, 2006). Younger second-career AC teachers are more open to changing careers again since they already managed one career change and feel capable of handling another.

5.2. Limitations and future research

Apart from important strengths of our study, such as the large teacher sample and the use of established instruments, it also has several limitations. First, the study focused on TC teachers of English and German whereas AC teachers also taught subjects other than German and English. This procedure was chosen to enlarge the sample of AC teachers. The results therefore cannot be generalized to teachers of all subjects. Second, we acknowledge that we have assessed the motives for teaching retrospectively and not at the beginning of the career. We cannot rule out that the retrospective evaluation and the motive at the beginning of the career may differ from each other.

Furthermore, we were not able to distinguish between different alternative pathways into the teaching profession (i.e., *Quereinstieg* vs. *Seiteneinstieg)*. In our study, AC teachers were defined as teachers who did not complete traditional teacher training. However, AC teachers are prepared differently than TC teachers due to differences in their training and qualifications, in the duration of the various programs, and in the mentoring support provided (Darling-Hammond et al., 2002). Thus, the question arises to what extent findings on AC teachers can be generalized since the alternative pathways into the teaching profession are so different from each other. Future research should investigate whether teachers who completed different alternative certification programs differ in regard to their motives for teaching, their occupational well-being, and their intention to stay.

In addition, the data only included AC teachers who did not leave the profession. Future research should investigate AC teachers' motives for teaching and well-being when they start their alternative certification program and examine whether AC teachers with certain motives are more likely to leave the profession than others. Future research should also investigate whether the differences between AC and TC teachers in regard to their motives for teaching or occupational well-being have an impact on their instructional practices and student achievement. Studies could examine, for instance, whether AC teachers' higher levels of enthusiasm for teaching have a positive impact on their instructional practices.

Finally, we measured the intention to stay with a single item because it is common to use single-item measures for this question (e.g., Troesch & Bauer, 2020; Van den Borre et al., 2021). In order to be able to assess the reliability of this variable, future studies should also consider using multiple items for the construct of retention intention.

6. Conclusion

In sum, the present study is one of the first to compare AC and TC teachers in their motives for teaching, occupational well-being, and intention to stay in the profession. The findings provide insights into how in-service AC teachers experience their work in Germany. The study shows that AC and TC teachers differ in selected motives for teaching and well-being, with small effect sizes. Based on the results, we cannot make assumptions about whether AC teachers with higher intrinsic motivation offer higher quality teaching than less motivated AC teachers. However, the findings may suggest that the German system is providing employment for people who were insecure in their former careers and who now show high occupational well-being and a high intention to stay in their new careers.

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Appendix A

Intercorrelations Between the Dependent Variables and the Control Variables.

Scale	Control variables			
	Gender (0 = male 1 = female)	Age at career start	School track (0 = non-academic track 1 = academic track)	Substitute teacher (0 = does not apply 1 = applies)
Prior teaching and learning experiences	.08*	-.09*	.08	.02
Social influences	-.07	.11*	.03	.00
Perceived teaching abilities	.04	.02	.01	.11*
Intrinsic career value	.12**	-.01	.01	.10*
Job security	-.12*	-.00	.01	.07
Time for family	.06	.02	.01	.09*
Shaping the future of children/ adolescents	.03	.01	-.01	.09*
Making a social contribution	.00	.03	.03	.08
Enthusiasm for teaching	.13**	.04	.09*	.11**
Emotional exhaustion	.04	-.10*	-.09*	-.01
Intention to stay	.03	.03	.09*	.07

Note. *$p < .05$; **$p < .01$; ***$p < .01$.

Appendix B

Results of the Cross-Validation Analyses Compared with the Analyses of the Overall Sample.

Scale	**TC teachers**		**AC teachers**		*MANCOVA*	
	M	*SD*	*M*	*SD*	*p*	η^2
Socialization influences						
Prior teaching and learning experiences	4.43 (4.27)	1.79 (1.77)	4.18	1.68	.71 (.86)	.00 (.00)
Social influences	2.33 (2.08)	1.50 (1.32)	3.12	1.84	<.01 (<.01)	.03 (.06)
Self-perceptions						
Perceived teaching abilities	5.48 (5.63)	1.19 (1.10)	5.66	1.09	.08 (.95)	.01 (.00)
Intrinsic value						
Intrinsic career value	6.11 (6.15)	1.11 (1.00)	6.22	0.95	.10 (.39)	.00 (.00)
Personal utility value						
Job security	4.12 (4.16)	1.74 (1.71)	4.42	1.83	.16 (.29)	.00 (.00)
Time for family	3.52 (3.49)	1.85 (1.83)	3.99	1.82	<.01 (.02)	.01 (.02)
Social utility value						
Shaping the future of children/adolescents	5.50 (5.61)	1.30 (1.23)	5.62	1.35	.29 (.92)	.00 (.00)
Making a social contribution	5.40 (5.54)	1.47 (1.36)	5.53	1.43	.59 (.55)	.00 (.00)
Occupational well-being						
Enthusiasm for teaching	3.42 (3.44)	0.48 (0.43)	3.53	0.49	.02 (0.13)	.01 (.01)
Emotional exhaustion	2.00 (1.98)	0.54 (0.49)	1.85	0.53	.07 (.55)	.01 (.00)
Retention intention						
Intention to stay	5.94 (6.14)	1.46 (1.30)	6.13	1.37	.31 (.91)	.00 (.00)

Notes. The numbers in brackets report the results from the cross-validation analysis. Since the sample of AC teachers remained the same and thus the means and standard deviation did not change, no values are reported in their columns. TC teachers $n = 150$, AC teachers $n = 143$.

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