



Motivations for choosing teaching as a career: An international comparison using the FIT-Choice scale

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ABSTRACT

Motivations for preservice teachers' choice of teaching as a career were investigated using the Factors Influencing Teaching Choice scale (FIT-Choice scale; Watt & Richardson, 2007). This scale was initially developed and validated in the Australian context; our study applied it across international samples from Australia, the United States, Germany, and Norway. Support for strong factorial invariance implied the scale functioned similarly, and could fruitfully be employed in different contexts. Sample comparisons revealed that motivations for teaching were more similar than they were different across these samples; whereas, perceptions about the teaching profession tended to reflect country differences.

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International research interest in what motivates people to take on a teaching career has resulted in a steady flow of studies and reports from many countries, with notably early investigations in Britain during the depression (Valentine, 1934) and at the close of the Second World War (Tudhope, 1944). Although teaching would appear to be an occupation considered central to a country's development and wellbeing, Australia, the U.S., Germany and Norway, among other countries including the U.K. and several European countries, report difficulties recruiting and retaining teachers (see Johnson & Birkeland, 2003; Liu, Kardos, Kauffman, Preske, & Johnson, 2000; OECD, 2004a,b, 2011; Ofsted, 2001; Preston, 2000; Ramsay, 2000). A pattern of teacher shortages followed by surpluses is a long cycle in most countries. The onset of the global financial crisis since 2008 may be likely to impact the supply of teachers particularly in countries where they are classified as public servants, who are offered job security and a funded retirement pension, despite relatively lower salaries to other occupations. However, contexts adversely affected by the financial downturn such as the U.S. and several European countries, are

consequently able to offer fewer teaching positions, or laying off teachers as has begun to be reported in the media in the U.S. Over the last decade there has been renewed research interest in understanding what motivates people to choose teaching as a career and what motivates them to persist in the profession, as teachers' daily job has become more complex and demanding, contending with increasingly "diverse student populations, higher social expectations of schools, expanding fields of knowledge, and new types of responsibilities" (OECD, 2005).

While there have been many studies of teacher motivation in different contexts over time, there has not been a reliable measure upon which researchers could draw which would permit comparisons across different settings and samples, or prediction of various outcomes over time. This has resulted in an abundance of findings which cannot be directly compared or synthesised. To understand how initial motivations impact teacher recruitment, retention and effectiveness, within and across different kinds of samples and settings, we need first to have a valid and reliable instrument encompassing comprehensive teaching motivations and grounded in motivational theory. Such an instrument would offer the opportunity to measure and compare motivations for different individuals, from varying settings, and to explore correlates and consequences of motivational dimensions.

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The FIT-Choice (Factors Influencing Teaching Choice) scale was developed to assess the primary motivations of teachers to teach, and was demonstrated to be psychometrically sound in its initial use among a sample of 1653 Australian preservice teachers (Watt & Richardson, 2007). Further, it has been shown to predict both positive and negative outcome variables among beginning teachers: the motivations that related most strongly to high initial career satisfaction included the altruistic-type motivations most frequently emphasised in the teacher education literature, the intrinsic value individuals attached to teaching, and self-evaluations of their teaching-related skills (Watt & Richardson, 2007). For subsequent planned persistence, planned effort, professional development, leadership aspirations, and career choice satisfaction, similar patterns of correlation were observed. Beginning teachers' ability beliefs, intrinsic value, and social utility values demonstrated significant positive correlations with these later measures; positive prior teaching and learning motivations related significantly positively to later planned persistence in the profession; choosing teaching as a fallback career correlated negatively across all five later measures; personal utility values (job security, transferability, time for family) related negatively to later planned persistence and career choice satisfaction (see Watt & Richardson, 2007). Such findings resonate with earlier untested claims that such personal utility motivations are somehow "unworthy" (e.g., Yong, 1995).

We set out to test whether the FIT-Choice scale would function similarly among samples sourced from different settings. For the scale to be useful to researchers from a range of sociocultural contexts, it is necessary to test whether the instrument performs similarly across samples and settings; only in this case is it justified to compare teaching motivations from different contexts using the same instrument. We had the opportunity to sample preservice teachers from the U.S., Australia, Germany, and Norway, to firstly test the utility of the scale, and secondly obtain first indications of contextual differences. Before exploration of sample differences could be meaningfully undertaken, construct equivalence must be established which requires testing for strong factorial invariance. Measurement equivalence indicates that constructs are generalisable to each of the contexts, that sources of bias and error are minimal, that cultural differences have not differentially affected the constructs' underlying measurement characteristics, and that between-culture differences in construct means, variances and covariances are quantitative in nature, such that sample differences on the constructs can be examined in a quantitative manner (Little, 1997; Meredith, 1993).

1. Motivations for teaching

Similar reasons for choosing teaching have surfaced in various forms, combinations, and rankings over the last five decades. In brief, a review of this body of research conducted up until the early 1990s suggested that "altruistic, service-oriented goals and other intrinsic motivations are the source of the primary reasons entering teacher candidates report for why they chose teaching as a career" (Brookhart & Freeman, 1992, p. 46). These researchers highlighted *intrinsic*, *extrinsic* and *altruistic* motivations as the most important groups of reasons influencing teachers' career choice. Identified motivations have included working with children and adolescents, making a social contribution, making a difference, job security, job benefits, enjoyment of teaching, compatibility with other interests and activities, compatibility with family life, and self-education (Organisation for Economic Co-operation and Development [OECD], 2005). According to an OECD report (OECD, 2005), studies in France, Australia, Belgium (French Community), Canada (Québec), the Netherlands, the Slovak Republic, and the U.K.

suggest that a desire to work with children and adolescents, the potential for intellectual fulfilment, and a means by which to make a social contribution, are the most frequently nominated reasons for choosing teaching as a career. On the other hand, studies conducted in very different sociocultural contexts such as in Brunei (Yong, 1995), Zimbabwe (Chivore, 1988), Cameroon (Abangma, 1981), and Jamaica (Bastick, 1999), have found what they term extrinsic motives to be more important, in the form of salary, job security, and career status.

Despite recognition that the demand and supply of teachers is cyclical in many countries, too little systematically collected and analysed data exists on what motivates people to choose teaching as a career. A significant proportion of the research on teacher motivations has been conducted in the U.S., mostly founded on surveys and with some studies incorporating a qualitative component (e.g., Alexander, Chant, & Cox, 1994; Bastick, 1999; Hanushek & Pace, 1995; Jantzen, 1981; Joseph & Green, 1986), although the methods of analysis and reporting of results have not always been as sophisticated as they could have been, frequently utilising single-item indicators, raw frequency counts, and the ranking of themes, resulting in a lack of consistency across studies. Researchers have developed and implemented survey instruments without information regarding reliability or validity, and results have at times been reported without inclusion of the survey instruments.

The absence of an agreed upon analytical and theoretical framework has meant researchers have not always concurred on what constitutes intrinsic, altruistic, extrinsic, or other motivations examined by individual researchers. Various operationalisations of intrinsic, extrinsic, and altruistic motivations have resulted in a lack of definitional precision and overlapping categorisations from one study to another. For example, the desire to work with children has been frequently nominated as a form of intrinsic motivation (e.g., Young, 1995) and has also often been referred to as a form of altruistic motivation (e.g., Yong, 1995). What is needed to investigate reasons for becoming a teacher is a scale that encompasses the array of motivations, which taps the underlying psychological processes, and that can be used to study different groups of people from different kinds of settings.

1.1. Theoretical background and initial scale development

Previously identified teaching motivations can be mapped to the main constructs in the expectancy-value motivational theory (Eccles, 2005; Eccles (Parsons) et al., 1983; Wigfield & Eccles, 2000) on which the FIT-Choice scale is founded, allowing us to locate them within an integrative and comprehensive motivational framework to provide a theoretically grounded basis to approach the question of teaching as a career choice. The FIT-Choice model taps both the "altruistic"-type motivations that have been emphasised in the teacher education literature (e.g., Book & Freeman, 1986; Brown, 1992; Lortie, 1975; Moran, Kilpatrick, Abbott, Dallatt, & McClune, 2001; Serow & Forrest, 1994), as well as more personally utilitarian motivations, intrinsic motivations, and ability-related beliefs. It also taps individuals' perceptions about the demand and reward aspects of the teaching profession, and contains a measure of career satisfaction and commitment.

We have provided a review elsewhere (Watt & Richardson, 2007, 2008) of how the FIT-Choice factors, summarised in Fig. 1, map onto expectancy-value theory, Social Cognitive Career Theory (SCCT; see Lent, Lopez, & Bieschke, 1993) which also highlights the importance of ability-related beliefs, and to key findings within the existing teacher education literature. The model represents different psychological mechanisms which are involved in the choice of teaching as a career, and all parts of the model work together in individuals' decision-making. Individuals should be likely to pursue

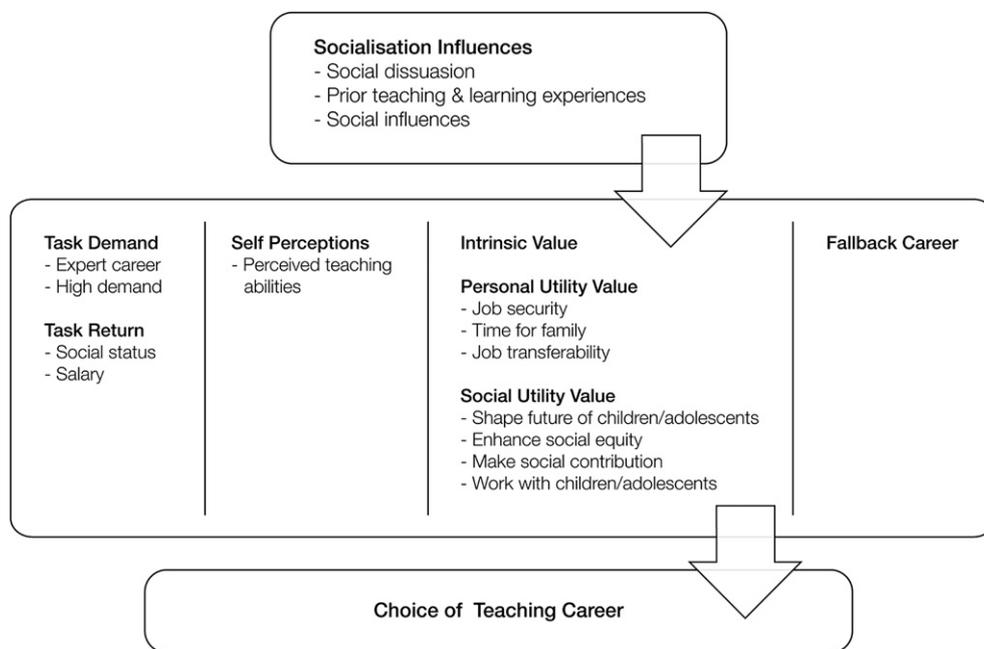


Fig. 1. The FIT-Choice theoretical model.

choices for which they expect they have the requisite abilities, to which they attach value, and which do not demand too great a cost. The expectancy-value model has been influential in the motivation literature, with a wealth of empirical work to support its utility and validity for explaining students' achievement-related choices (for reviews see Eccles, 2005; Wigfield & Eccles, 2000). Although initially developed as a framework for explaining students' choices to participate in mathematics in high school (Eccles (Parsons) et al., 1983), it has since been fruitfully applied to other academic school disciplines, such as English and language arts (Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002; Watt, 2004) and sport (Fredricks & Eccles, 2002), as well as to specific types of careers (e.g., Watt, 2002, 2006, 2008; Watt et al., in press). Eccles and her colleagues propose that educational, vocational and other achievement-related choices are directly related to two sets of individual beliefs: one's ability beliefs and expectations for success, and the value one attaches to the task (Eccles, 2005; Eccles (Parsons) et al., 1983; Wigfield & Eccles, 2000).

Success expectancies depend on beliefs about how much ability one possesses, defined by Eccles et al. as beliefs about how well one will perform on an impending task; expectations for success are shaped over time by the individual's experiences and her or his interpretations of them (see Eccles & Wigfield, 1995). The value that a person holds for a task is critical, and this is influenced by a number of factors: does the person enjoy the task? does the person think the task is useful? is the task instrumental for any of the person's own goals? "Intrinsic value" has been likened to interest and enjoyment, "utility value" taps more instrumental reasons for task engagement, and "attainment value" refers to the subjective importance of achieving the task. "Cost" refers to what the individual must give up in order to pursue a task, whether financial, psychological, or in terms of time which cannot be spent on other valued activities.

The major identified teaching motives within the teacher education literature – intrinsic, extrinsic and altruistic (Brookhart & Freeman, 1992) – fit within the expectancy-value "values" component, further differentiated into more nuanced intrinsic, utility, attainment, and cost values. The Eccles et al. expectancy-

value model (1983) thereby provides a comprehensive framework into which previously identified motives can readily be incorporated, while also suggesting others. The sequencing of the FIT-Choice model (Fig. 1) consists of antecedent socialisation influences, followed by more proximal influences of task perceptions, self perceptions, values, and fallback career. Higher-order task demand and return constructs in turn contain first-order constructs: expertise and high demand comprise the higher-order task demand construct; social status and salary comprise the higher-order task return construct. We expected that high perceptions of task demand would deter people from a teaching career, although this may be moderated by perceptions of high task return. The discrepancy between the two also relates conceptually to the less researched cost value component of the expectancy-value model (Eccles (Parsons) et al., 1983; Wigfield & Eccles, 2000).

Values constructs in the FIT-Choice model are intrinsic value, personal utility value and social utility value. The last two values constructs contain component first-order constructs: job security, time for family, and job transferability comprise personal utility value; shape future of children/adolescents, enhance social equity, make a social contribution, and work with children/adolescents comprise the higher-order social utility value construct.

Social utility value factors resemble altruism as variously described in the teacher education literature (Book & Freeman, 1986; Brown, 1992; Fox, 1961; Joseph & Green, 1986; Serow, Eaker, & Ciechalski, 1992). Positive prior teaching and learning experiences, especially in relation to former influential teachers, have also been linked to choosing a teaching career (Book & Freeman, 1986; Fielstra, 1955; Lortie, 1975; Richards, 1960; Robertson, Keith, & Page, 1983; Wright, 1977), as have various quality of life issues such as having time for family and job security (Jantzen, 1981; Richardson & Watt, 2006; Tudhope, 1944), which are assessed by *personal utility* value factors. Subjective goals which may relate to the choice of a teaching career are provided by research findings that people entering teaching have frequently chosen this career for reasons independent of the career content. Rather, they have chosen the career for reasons relating to quality of life issues, such as permitting more time with family, providing

a secure income, or opportunities to travel (e.g., Bastick, 1999; Robertson et al., 1983; Yong, 1995). Studies concerning people's reasons for never considering teaching (see Kyriacou & Coulthard, 2000) and for leaving teaching (see Fresko, Kfir, & Nasser, 1997; Liu et al., 2000) provide further insights into how people are directed away from the teaching profession because it does not provide for their personal goals. In prior research, such quality of life reasons have frequently been nominated as extrinsic, although that label obscures the distinction between quality of life issues and other factors that we distinguish as socialisation influences and task perceptions. Researchers have previously identified "extrinsic" quality of life motivations as detrimental to producing teachers who are fully engaged with and committed to the profession (e.g., Sparkes, 1988; Woods, 1981).

Intrinsic value and *perceived ability* have been less a focus in the teacher education literature, although in the motivation literature such constructs are the main focus of several models, including in the expectancy-value model, and ability-related beliefs have been the focus in the career choice literature more generally. In light of claims in the teacher education literature and the public media regarding teaching as a "fallback" career, where entrants may have failed to be accepted into their career of choice or otherwise been unable to pursue their first-choice career (see Book et al., 1985; Haubrich, 1960; Robertson et al., 1983), we developed the fallback career subscale. This construct reflected the possibility of people not so much having chosen teaching, but rather having defaulted to it. Those items asked whether participants had chosen teaching for reasons related to not being accepted into their university degree of choice, or being unsure what career they wanted.

Previous empirical validation of the FIT-Choice model (Watt & Richardson, 2007) has confirmed the importance of a number of factors previously nominated within the teacher education literature. Further, we have shown the relevance and importance of additional factors not previously focused on in the teacher education literature. In particular, *intrinsic value* and *ability* beliefs, emphasised as major influences in the expectancy-value framework, were found to be among the highest rated motivations for Australian preservice teachers choosing a teaching career (Richardson & Watt, 2006), rated similarly high to the *social utility* factors which have been the main focus of the teacher education research to date.

1.2. Sample backgrounds

Motivations for career choices are forged from personal values and expectancies, experienced in particular sociocultural settings within the context of different demand and reward structures. Australia, the U.S., Germany, and Norway each experienced serious shortages of teachers following World War II, followed by a period of relative over-supply in the 1980s and early 1990s, and now again face increasing shortages in relation to specific regions and disciplinary areas, particularly in the sciences despite targeted programs designed to recruit qualified teachers (e.g., DEST., 2003; Jones & Sandridge, 1997; Murnane, 1995; Naess, 2002 cited in Lyng & Blichfeldt, 2003; OECD, 2005). Teachers who were recruited thirty years ago are now eligible to retire, promising to further escalate these shortages (MCEETYA, 2002; OECD, 2005, 2011). There is substantial variability in areas of teacher shortage with some experiencing relative over-supply, particularly settings experiencing financial downturn where measures such as school closures, increasing class sizes and cutting some subjects have resulted in fewer job openings.

Salary scales for teachers vary considerably across the OECD countries. Comparison of the salary scales in United States Dollars (converted using Purchasing Power Parities), indicate that

primary/elementary and lower secondary teachers in Germany, the U.S., Australia, and Norway have starting salaries above the mean OECD teaching salary; starting salaries for upper secondary teachers in Norway fall slightly below, while the U.S. and Australia are well above, and Germany is highest of all (OECD, 2005). After 15 years of teaching experience, salaries for elementary, lower secondary, and upper secondary teachers in Norway are well below the OECD mean; teachers in Germany, the U.S., and Australia are well above it. German upper secondary teachers are located ahead of their counterparts in the U.S. and Australia; upper secondary teachers in Norway fall into the bottom quartile of the distribution.

While these variations between the four countries are of some interest, they are less significant than *within* country comparisons, for instance, the buying power of a teacher's salary, comparisons with salaries of graduates who have similar qualifications, and the potential for salary increases and career development over time. In almost all member countries of the OECD, teacher salaries fell relative to national income per head during the late 1990s and have remained less competitive since (OECD, 2011). In Norway, the annual salary and life-span income of teachers has been low compared with other professionals who have similar levels of higher educational attainment (Lyng & Blichfeldt, 2003). Recent work in the U.S. (Liu et al., 2000) suggests that the increasing salary gap between teaching and other professions, poor working conditions in schools, combined with the disappointments and hardships from teaching are influential in why new teachers leave the profession. Despite relatively high salaries in Germany, teachers perceive that they have low social prestige (Baumert, Klieme, Oelkers, & Scheerens, 2003), suggesting that salary alone does not result in perceptions of high status. Not all of the rewards of teaching are accounted for in strictly material terms; differences in reward structures exist across the four countries in terms of salary and benefits such as housing subsidies to attract teachers into hard-to-staff areas. The availability of part-time and casual work, together with defined periods of leave during school vacation times, provide a high degree of career flexibility sought perhaps mainly by women seeking to spend more time with their families. This would appear to be the case in Germany, where of the almost 50% of primary school teachers who are employed on a part-time basis, 96% are female (Halász, Santiago, Ekholm, Matthews, & McKenzie, 2004).

Norway has a scattered population of 4.3 million, in which a substantial proportion of primary and lower secondary schools (40%) are small (below 100 students), where children of different ages are frequently taught in the same classroom. Norway has the interesting dimension of a schooling system that promotes principles of unity and equality (Lyng & Blichfeldt, 2003, p. 69), having compulsory education for ages six to 16 years within which all students are integrated. As a result of the reforms during the 1990s, the proportion of young adults who completed upper secondary education is greater than in most other countries at 92% (OECD average: 72%).

Germany has invested heavily in education since the 1950s, yet, in 2003 felt the impact of poorer than expected results from the international PISA study, termed the "PISA-shock" (Baumert et al., 2003). This had far-reaching implications for educational reform and significant negative impacts on the perceived status of the teaching profession. German teachers were the target of public blame for the performance of the German students, and suffered a decline in social and community prestige (OECD, 2005), although their salary scales, working conditions, annual leave entitlements, pensions, allowances, bonuses, job security, and tenure make the career competitive with other occupations requiring similar levels of higher education, such as accountants, nurses, social workers and human resource professionals. Germany has a very different schooling structure from the other three countries, in that teachers

are prepared in different settings for each of the three levels of the tiered school system, in which students are selected for either the academically-oriented *Gymnasium* (lower and upper secondary school), the general education-oriented *Realschule* (lower secondary school), or the more basic skills/vocational-oriented *Hauptschule* (lower secondary school). This leads to teaching settings in secondary school where learners are much more homogeneous in terms of their demonstrated academic abilities.

At a time when other careers offer higher salaries, clearer pathways for career development, higher prestige and community respect, and more agreeable working conditions (see OECD, 2005; Ramsay, 2000), what is it that attracts people to teaching as a career? It is not obvious nor trivial what kinds of expectancies and values we should expect to be most salient, whether results would reflect or challenge prevailing stereotypes regarding motives for choosing teaching, and by extension the kind of people who enter the profession. Current stereotypes include the choice of teaching as a family-flexible career, for highly altruistic motivations, and as a “fallback” career. Initial research on the FIT-Choice scale, with 1653 first-year preservice teachers in Australia (Richardson & Watt, 2006), indicated that the highest rated teaching motivations upon entry to teacher education were intrinsic value, perceived teaching abilities, positive prior teaching and learning experiences, and “altruistic-type” social utility values (i.e., shape the future of children/adolescents, enhance social equity, make social contribution, work with children/adolescents).

Key differences in terms of demand and reward structures between the countries in our sample led us to speculate about differences between prospective teachers. For example, in line with there being already a strongly egalitarian schooling system in Norway, we expected that social utility values may be less influential in motivating participants from that context to choose teaching as a career. We expected that perceptions about the teaching profession, rather than motivations for choosing teaching, may be the components most shaped by contextual conditions across settings; the German sample was anticipated to perceive teaching status as low, in light of the “PISA-shock” (Baumert et al., 2003). We also thought that personal utility motivations may differ the most across samples among the motivation constructs.

2. Method

2.1. Samples and settings

Samples were primary/elementary and secondary teacher education students from Australia ($N = 1438$, 54% secondary), the U.S. ($N = 511$, 47% secondary), Germany ($N = 210$, 55% secondary, 11% grades 1 to 10, 34% primary), and Norway ($N = 131$, all secondary). In Australia and the U.S., participants were all commencing teacher education candidates (2002/3 and 2004, respectively); whereas in each of Germany and Norway, participants included candidates at varying stages of their teacher education in 2005. Response rates were high in the Australian (>80% at each university) and U.S. settings (>73% at each university). In the Norwegian sample, all students present in lectures on the day of administration were invited and agreed to participate; only the motivations section of the scale, not the perceptions section, was administered there due to time constraints. In the German setting a representative sample was not attempted and response rates could therefore not be calculated; students were invited to participate in the study after their regular classes.

At each of the three Australian and two U.S. universities, candidates undertook either the undergraduate Bachelor qualification, or the one- to two-year postgraduate certification in cases where they already held a relevant prior undergraduate

qualification (49% undergraduate in the Australian sample, 78% in the U.S.). In Norway, teacher education candidates undertook either a combined degree in which they studied teacher education alongside their Master studies, or a one-year postgraduate teacher education program (our Norwegian sample contained 48% in the combined degree mode). The German system of teacher education does not provide for this flexibility of entry into teaching and teacher education through alternative pathways, and it is structurally very difficult for those who might contemplate changing their career into teaching to do so. At the German university when data were collected in 2005, many candidates were undertaking the integrated degree (the Staatsexamen), replaced in 2004 with the Bachelor/Master model, which split the undergraduate Bachelor and postgraduate Master components, whereby candidates undertake the undergraduate degree followed by the postgraduate qualification. Our sample contained 58% Staatsexamen and 42% Bachelor candidates.

In countries from which the samples came, teacher education can be undertaken in undergraduate or graduate modes. Typically at the graduate level these countries offer a one-year full-time preparation program (or an equivalent two years part-time), and sometimes two years of postgraduate study (Lyng & Blichfeldt, 2003; OECD, 2004a,b; Skilbeck & Connell, 2003) for people who have already obtained qualifications in relevant disciplines. Australia and the U.S. provide for flexible delivery in teacher education programs, including part-time study and distance education programs (Richardson & Watt, 2005), as does Norway (Lyng & Blichfeldt, 2003). Masters level graduate teaching qualifications are available in some institutions in Australia and the U.S., and also in Germany and Norway, reflecting pressures for better teacher professional quality and teacher education programs. This reform agenda was being developed and put in place during the time our data were collected and will continue for some time yet.

As is reflective of the highly feminised composition of the teaching profession at large, samples were predominantly female. Secondary teacher education candidates studied a range of academic disciplines within each of the samples. Sample characteristics are summarised in Table 1A (Australian and U.S.) and Table 1B (German and Norwegian).

2.2. Materials

The FIT-Choice scale was translated into German using a process of translation and back-translation by a team of bilingual researchers; the scale was administered in English in the Australian, U.S., and Norwegian samples (English is a common language of instruction in the Norwegian universities).

2.2.1. Motivations for teaching

Within the FIT-Choice instrument, each motivational factor is measured by multiple item indicators with response options ranging from 1 (not at all important) through 7 (extremely important). A preface to all motivation items in the scale is “I chose to become a teacher because...”, typed in large bold-faced font at the top of each page.

2.2.2. Perceptions about teaching

Participants also rated the extent of their agreement with a number of propositions about the teaching profession, with response options ranging from 1 (not at all) through 7 (extremely). Multiple propositions together comprised factors relating to the extent to which respondents perceived teaching as high in task demand (expert career, high demand), and high in task return (social status, salary). Career choice satisfaction was measured by two items with response options from 1 (not at all) through 7

Table 1A
Sample characteristics: Australian and United States.

| | University of Sydney, Australia (N = 416) | Monash University, Australia (N = 461) | University of Western Sydney, Australia (N = 561) | University of Michigan, U.S. (N = 242) | Eastern Michigan University, U.S. (N = 269) |
|--|--|---|---|--|---|
| Primary N | 171 (103 UG, 68 grad) | 187 (119 UG, 68 grad) | 309 (218 UG, 91 grad) | 113 (68 UG, 45 grad) | 159 (150 UG, 8 grad) |
| Secondary N | 245 (123 UG, 122 grad) | 274 (70 UG, 204 grad) | 252 (68 UG, 184 grad) | 129 (88 UG, 41 grad) | 110 (90 UG, 20 grad) |
| Female N | 318 = 76% (85% prim, 71% sec) | 325 = 71% (78% prim, 66% sec) | 415 = 74% (87% prim, 58% sec) | 170 = 70% (86% prim, 57% sec) | 200 = 74% (83% prim, 62% sec) |
| Age | M = 23.24, SD = 6.51 Range 17–53 | M = 27.80, SD = 8.81 Range 18–58 | M = 26.47, SD = 8.82 Range 17–69 | M = 25.11, SD = 8.36 Range 19–57 | M = 23.51, SD = 5.65 Range 19–48 |
| <i>Secondary Strands %^a</i> | | | | | |
| Humanities | 38 | 27 | 34 | 57 | 40 |
| Visual/ performing arts | 20 | 17 | 17 | 1 | 5 |
| Foreign languages | 16 | 17 | 5 | 9 | 3 |
| TESOL+ | 10 | 11 | 8 | n/a | n/a |
| Social studies | 16 | 31 | 16 | 16 | 31 |
| Maths/science | 22 | 32 | 30 | 29 | 26 |
| Computing | 2 | 10 | 8 | n/a | 2 |
| Vocational Ed | 9 | n/a | 15 | n/a | 2 |
| Religious Ed | n/a | 1 | n/a | n/a | n/a |
| Librarianship | n/a | 1 | n/a | n/a | n/a |
| Psychology | n/a | 7 | n/a | n/a | n/a |

+TESOL: 'Teaching English as a Second Language' to non-English speakers in Australia.

^a %'s do not add as some students span more than one strand.

(extremely). Participants also rated the extent to which they had experienced social dissuasion from teaching as a career choice. The final item set that was analysed is presented in Table 2 for the original English version (also see Richardson & Watt, 2006; Watt & Richardson, 2007), and the German translated version.

2.3. Analyses

Analyses were conducted within the multiple-group mean and covariance structures (MACS) framework using M-Plus 3.11. This framework is an extension of traditional structural equation modelling, in which mean-level information is analysed as well as the covariance matrix. Strong factorial invariance (Little, 1997; Meredith, 1993) implies that constructs are fundamentally the same

across settings, and are consequently comparable. It is necessary to establish scale invariance in cross-cultural comparisons, especially when using self-report data (Vijver & Tanzer, 1998). Only in this case can we meaningfully undertake quantitative comparisons between the measured constructs. Strong factorial invariance is tenable when equality constraints for the factors' loading and intercept parameters hold, and when the sequential introduction of those constraints does not produce substantial change in model fit indices. Little (1997) argued that strong factorial invariance is less biasing than strict factorial invariance which further equates residual variances, because if these are not exactly equal, the non-equal portions of random error become forced into other model parameters (p. 55). He suggested a "modeling rationale" to evaluate the change in model fit using practical fit indices. This is distinct from what he terms the

Table 1B
Sample characteristics: German and Norwegian.

| | Free University, Germany ^a | Trondheim University, Norway | | | |
|----------------------------|--|------------------------------------|--|--|---|
| Primary N | 66 | n/a | | | |
| Secondary N | 127 | 131 | | | |
| Female N | 147 = 70% (91% prim, 61% sec) | 87 = 41% (all secondary) | | | |
| Age | M = 23.70, SD = 4.14 Range 19–46 | M = 24.21 SD = 4.50 Range 19–41 | | | |
| <i>Secondary strands</i> | First subject N(%) | Second subject N(%) | First subject N(%) (N = 125, missing = 6) | Second subject N(%) (N = 110, missing = 21) | Third subject N(%) (N = 21, missing = 110) |
| German | 19 (15.0%) | 11 (8.7%) | n/a | n/a | n/a |
| Humanities | 29 (22.8%) | 24 (18.9%) | 19 (15.2%) | 19 (17.3%) | 3 (14.3%) |
| Visual/ performing arts | 3 (2.4%) | n/a | 2 (1.6%) | 2 (1.8%) | n/a |
| Foreign languages | 17 (13.4%) | 26 (20.5%) | 28 (22.4%) | 9 (8.2%) | 4 (19.0%) |
| Social studies | 13 (10.2%) | 14 (11.0%) | 9 (7.2%) | 11 (10.0%) | 4 (19.0%) |
| Maths/science | 45 (35.4%) | 45 (35.4%) | 58 (46.4%) | 51 (46.4%) | 6 (28.6%) |
| Computing | n/a | n/a | 3 (2.4) | 6 (5.5%) | 1 (4.8%) |
| Vocational Ed | n/a | n/a | 2 (1.6%) | 2 (1.8%) | n/a |
| Sport | n/a | 4 (3.1%) | 4 (3.2%) | 4 (3.6%) | 1 (4.8%) |
| Religious Ed | n/a | n/a | n/a | 3 (2.7%) | 1 (4.8%) |
| Special pedagogic | n/a | n/a | n/a | 2 (1.8%) | 1 (4.8%) |

^a 17 participants had missing primary/secondary degree information.

Table 2
FIT-Choice subscales and items involved in the study.

| Factor | Item# | Original English | German translation |
|--------------------------------------|-------|---|---|
| MOTIVATIONS | | | |
| | | “I chose to become a teacher because...” 1 (not at all important) –7 (extremely important) | “Ich möchte Lehrer werden, denn...” 1 (überhaupt nicht wichtig) – 7 (äußerst wichtig) |
| Perceived teaching abilities | B5 | I have the qualities of a good teacher | ich habe die Qualitäten eines/einer guten Lehrers/Lehrerin |
| | B19 | I have good teaching skills | ich kann gut unterrichten |
| | B43 | Teaching is a career suited to my abilities | der Lehrerberuf passt gut zu meinen Fähigkeiten |
| Intrinsic value | B1 | I am interested in teaching | mich interessiert der Lehrerberuf |
| | B12 | I like teaching | ich unterrichte gern |
| <i>Personal utility value</i> | | | |
| Job security | B14 | Teaching will offer a steady career path | der Lehrerberuf eröffnet eine sichere Berufslaufbahn |
| | B27 | Teaching will provide a reliable income | als Lehrer/in hat man ein gesichertes Einkommen |
| | B38 | Teaching will be a secure job | als Lehrer/in hat man eine sichere Stelle |
| Time for family | B2 | Part-time teaching could allow more family time | als Lehrer mit reduzierter Stundenzahl hätte man mehr Zeit für die Familie |
| | B16 | Teaching hours will fit with the responsibilities of having a family | die Arbeitszeiten eines Lehrers/einer Lehrerin lassen sich gut mit der Verantwortung für eine Familie vereinbaren |
| | B29 | School holidays will fit in with family commitments | die Schulferien lassen sich gut mit Familienverpflichtungen vereinbaren |
| <i>Social utility value</i> | | | |
| Shape future of children/adolescents | B9 | Teaching will allow me to shape child/adolescent values | als Lehrer/in kann ich Kindern und Jugendlichen bestimmte Werte vermitteln |
| | B23 | Teaching will allow me to influence the next generation | als Lehrer/in kann ich die nächste Generation beeinflussen |
| Enhance social equity | B36 | Teaching will allow me to raise the ambitions of underprivileged youth | als Lehrer/in kann ich benachteiligten Jugendlichen Mut machen, mehr zu erreichen |
| | B49 | Teaching will allow me to benefit the socially disadvantaged | als Lehrer/in kann ich etwas für die sozial Benachteiligten tun |
| Make social contribution | B6 | Teaching allows me to provide a service to society | als Lehrer/in kann ich etwas Nützliches für die Gesellschaft tun |
| | B20 | Teachers make a worthwhile social contribution | Lehrer/innen leisten einen wertvollen sozialen Beitrag |
| | B31 | Teaching enables me to ‘give back’ to society | als Lehrer/in kann ich der Gesellschaft etwas zurückgeben |

Table 2 (continued)

| Factor | Item# | Original English | German translation |
|---|-------|---|--|
| Work with children/adolescents | B13 | I want a job that involves working with children/adolescents | ich möchte einen Beruf haben, bei dem ich mit Kindern/Jugendlichen zu tun habe |
| | B26 | I want to work in a child/adolescent-centred environment | ich möchte einen Beruf haben, bei dem die Arbeit mit Kindern/Jugendlichen im Mittelpunkt steht |
| | B37 | I like working with children/adolescents | ich arbeite gerne mit Kindern/Jugendlichen |
| <hr/> | | | |
| Prior teaching and learning experiences | B17 | I have had inspirational teachers | ich selbst hatte inspirierende Lehrer/innen |
| | B30 | I have had good teachers as role-models | ich selbst hatte gute Lehrer als Vorbild |
| | B39 | I have had positive learning experiences | ich selbst hatte positive Lernerfahrungen |
| Social influences | B3 | My friends think I should become a teacher | meine Freunde finden, dass ich Lehrer/in werden sollte |
| | B24 | My family think I should become a teacher | meine Familie findet, ich sollte Lehrer/in werden |
| | B40 | People I've worked with think I should become a teacher | Leute, mit denen ich zusammengearbeitet habe, finden, ich sollte Lehrer/in werden |
| <hr/> | | | |
| PERCEPTIONS | | | |
| | | For each question below, please rate the extent to which YOU agree it is true about teaching. 1 (not at all) – 7 (extremely) | Zu Ihren Vorstellungen über den Lehrerberuf. Bitte beurteilen Sie wie sehr Sie folgenden Aussagen zustimmen. Glauben Sie, ... 1 (überhaupt nicht) – 7 (äußerst) |
| Task demand Expert career | C10 | Do you think teaching requires high levels of expert knowledge? | dass der Lehrerberuf ein hohes Maß an Expertenwissen voraussetzt? |
| | C14 | Do you think teachers need high levels of technical knowledge? | dass Lehrer/innen hohes Fachwissen brauchen? |
| High demand | C2 | Do you think teachers have a heavy workload? | dass Lehrer/innen sehr viel arbeiten müssen? |
| | C7 | Do you think teaching is emotionally demanding? | dass Unterrichten emotional beanspruchend ist? |
| | C11 | Do you think teaching is hard work? | dass der Lehrerberuf harte Arbeit ist? |
| <hr/> | | | |
| Task return Social status | C4 | Do you believe teachers are perceived as professionals? | man schreibt Lehrern Professionalität zu? |
| | C8 | Do you believe teaching is perceived as a high-status occupation? | dass man dem Lehrerberuf einen hohen sozialen Status zuschreibt? |
| | C12 | Do you believe teaching is a well-respected career? | dass Lehrer/in sein ein angesehenen Beruf ist? |
| | C9 | Do you think teachers feel valued by society? | Lehrer fühlen sich von der Gesellschaft wertgeschätzt? |
| | C13 | Do you think teachers feel their occupation has high social status? | dass die Lehrer/innen das Gefühl haben, dass ihr Beruf einen hohen sozialen Status hat? |

(continued on next page)

Table 2 (continued)

| Factor | Item# | Original English | German translation |
|------------------------------|-------|--|--|
| Salary | C1 | Do you think teaching is well paid? | dass Lehrer/innen gut bezahlt werden? |
| | C3 | Do you think teachers earn a good salary? | dass Lehrer/innen ein gutes Gehalt bekommen? |
| | | For each question below, please rate the extent to which it is true for YOU. 1 (not at all) – 7 (extremely) | Zu Ihrer Entscheidung Lehrer/Lehrerin zu werden: Bitte beurteilen Sie wie sehr die folgenden Aussagen auf Sie persönlich zutreffen! 1 (überhaupt nicht) – 7 (äußerst) |
| Social dissuasion | D2 | Were you encouraged to pursue careers other than teaching? | Wurden Sie ermutigt, andere Berufe als den des/der Lehrers/Lehrerin zu ergreifen? |
| | D4 | Did others tell you teaching was not a good career choice? | Haben andere Ihnen gesagt, Lehrer/in ist keine gute Berufswahl? |
| | D6 | Did others influence you to consider careers other than teaching? | Sind Sie von anderen beeinflusst worden, auch andere Berufe als Lehrer/in zu erwägen? |
| Satisfaction | D3 | How satisfied are you with your choice of becoming a teacher? | Wie zufrieden sind Sie mit Ihrer Entscheidung, Lehrer/in zu werden? |
| | D5 | How happy are you with your decision to become a teacher? | Wie glücklich sind Sie mit Ihrer Entscheidung, Lehrer/in zu werden? |
| OMITTED ITEMS | | | |
| Job transfer ^a | B8 | Teaching will be a useful job for me to have when travelling | beim Reisen ist es nützlich, wenn man Lehrer/in ist |
| Job transfer ^a | B22 | A teaching qualification is recognised everywhere | eine Qualifikation als Lehrer wird überall anerkannt |
| Job transfer ^a | B45 | A teaching job will allow me to choose where I wish to live | der Lehrerberuf erlaubt es mir, meinen Wohnort frei zu wählen |
| Fallback career ^a | B11 | I was unsure of what career I wanted | ich war mir nicht sicher, welchen Beruf ich wählen sollte |
| Fallback career ^a | B35 | I was not accepted into my first-choice career | ich habe für meinen Wunschberuf keine Zulassung bekommen |
| Fallback career ^a | B48 | I chose teaching as a last-resort career | ich habe den Lehrerberuf gewählt, weil ich keine anderen Möglichkeiten mehr hatte |
| Time for family ^b | B4 | As a teacher I will have lengthy holidays | als Lehrer/in werde ich lange Ferien haben |
| Time for family ^b | B18 | As a teacher I will have a short working day | als Lehrer/in werde ich einen kurzen Arbeitstag haben |
| Intrinsic value ^b | B7 | I've always wanted to be a teacher | ich wollte schon immer Lehrer/in werden |

Table 2 (continued)

| Factor | Item# | Original English | German translation |
|---|-------|--|--|
| Shape future of children/adolescents ^c | B53 | Teaching will allow me to have an impact on children/adolescents | als Lehrer/in kann ich Einfluss auf Kinder/Jugendliche nehmen |
| Enhance social equity ^c | B54 | Teaching will allow me to work against social disadvantage | als Lehrer/in kann ich etwas gegen soziale Benachteiligung tun |
| Expert career ^c | C15 | Do you think teachers need highly specialised knowledge? | Glauben Sie, dass Lehrer/innen hoch spezialisiertes Wissen brauchen? |
| Social status ^d | C5 | Do you think teachers have high morale? | Glauben Sie, Lehrer/innen haben eine hohe Arbeitsmoral? |

^a Constructs omitted due to inadequate subscale reliabilities. Job transferability and fallback career were respectively insufficiently reliable in the German and Norway, and U.S. and Norway samples (job transferability alphas: Australia: .681, U.S.: .676, Germany: .563, Norway: .432; fallback career alphas: Australia: .674, U.S.: .518, Germany: .672, Norway: .590).

^b Items omitted to enhance subscale reliabilities.

^c Later developed items were not collected at the first Australian university, so were unable to be used for comparative analyses.

^d Incorrectly translated into German as “morals”.

“statistical rationale”, based on change in the chi-square statistic relative to change in degrees of freedom for sequential nested models. Little recommends the former approach over the latter for large models with numerous constrained parameters because the chi-squared statistic is an overly sensitive index in this case (1997), particularly with large samples (see Marsh, Balla, & McDonald, 1988). He instead suggested (drawing upon Tucker & Lewis, 1973; and McGaw & Jöreskog, 1971) that if change in ρ (also known as the TLI: Tucker-Lewis Index, or the NNFI: Non-Normed Fit Index) is below approximately .05, and the overall model fit is acceptable (TLI exceeding approximately .90), that measurement equivalence is tenable.

The sequence of analyses involves first, a combined multiple-group model with no cross-group equality constraints (Model 1); second, the addition of the constraint that loadings are invariant across samples (Model 2); and third, constraints that loadings as well as intercepts are equivalent across samples (Model 3: the Measurement Equivalent Model; Little, 1997). Analyses were conducted separately for motivations for choosing teaching as a career, involving the four samples from Australia, the U.S., Germany and Norway; versus the perceptions about teaching, excluding the Norwegian sample to whom those questions were not administered. We implemented listwise deletion for missing data, having low loss of cases (motivations listwise N : Australia = 1380, U.S. = 497, Germany = 182, Norway = 120; perceptions listwise N : Australia = 1388, U.S. = 498, Germany = 185). Maximum likelihood estimation was used in all analyses.

3. Results

3.1. Preliminary analyses

Preliminary analyses showed that 2 of the motivation factors were not applicable in all of the settings, and consequently omitted from comparative analyses. The teaching motivations “job

transferability” in the German and Norwegian samples, and “fall-back career” in the U.S. and Norwegian samples had unacceptable Cronbach alpha measures of internal consistency (see Table 2 Note a). In addition, 3 items were omitted (B4, B18, B7) to enhance subscale reliabilities; item C5 had to be excluded because of mistranslation of “morale” as “morals” in German. Three further items were excluded because they had not yet been developed and therefore were not measured at the time of the first Australian university sample (B53, B54, C15).

The combined multiple-group model was then specified; Model 1, which imposed no cross-group equality constraints, yielded an improper solution in the German sample, despite good model fits for the Australian, U.S., and Norway samples.² We traced the problem to high latent correlations among “shape future of children/adolescents” and “make social contribution” (.962), and “shape future of children/adolescents” and “enhance social equity” (.915). In the German sample, “shape future of children/adolescents” was therefore insufficiently empirically distinguishable from those other constructs, possibly due to subtle translation differences.³ In order to include German data in the comparative analyses, “shape future of children/adolescents” was therefore excluded.

3.2. Reliability and validity of the scales across settings

Following the preliminary modifications, the condition of strong factorial invariance was subsequently met, indicating that quantitative comparisons of factor scores could be meaningfully undertaken across these different samples. Model fits were acceptable in each instance, and, the differences for the TLI across sequentially constrained models for each of motivations ($\Delta = .007$ between models 1a and 3a) and perceptions ($\Delta = .020$ between models 1b and 3b) were well below the .05 margin referred to by Little (1997). Model fits for sequential constrained models 1 through 3, for each of the motivations and perceptions sections of the scale, are shown in Table 3. Table 4 presents parameter estimates for the motivations measurement equivalent model (Model 3a) including measures of Cronbach alpha reliability, and latent correlations are summarised in Table 5. Details for the perceptions measurement equivalent model (Model 3b) are shown in Table 6 and latent correlations in Table 7.

3.3. Different motivations for teaching across samples and settings?

There was a number of statistically significant differences between motivations for teaching across samples listed below; mean ratings in the U.S. sample were typically highest.

- Perceived teaching ability: all paired comparisons were significantly different, with the U.S. sample highest, then Australian, German, and Norwegian the lowest.
- Intrinsic value: the U.S. sample had significantly the highest values, followed by the Australian, who had significantly higher

values than the German and Norwegian samples, who themselves were similar.

- Job security: the Australian sample had significantly the highest values. U.S., German and Norwegian samples were similar.
- Time for family: the U.S. sample was significantly higher than the Australian and Norwegian, who were similar. The German sample fell in between and did not differ significantly from other groups.
- Enhance social equity: the U.S. sample was significantly the highest, followed by the German, then Australian (which was significantly different from the U.S. but not from the German sample), with the Norwegian sample significantly lowest.
- Social contribution, and prior teaching and learning experiences: the U.S. sample was significantly highest, followed by the Australian and German who were similar to each other, and the Norwegian sample had significantly the lowest values.
- Work with children/adolescents: the U.S. and German samples had similarly high values, which were significantly higher than those for the Australian and Norwegian samples. The Australian sample also had significantly higher values than the Norwegian.
- Social influences: the U.S. and German samples had similarly high values, which were significantly higher than the Australian and Norwegian samples, who had similar values to each other.

However, within each sample, the relativity of mean ratings appeared similar. That is, the same five motivations were rated highest: intrinsic value and perceived teaching ability, emphasised within the Eccles et al. expectancy-value model; the desire to make a social contribution and to work with children/adolescents, as has been found in earlier research; and having had positive prior experiences of teaching and learning. In contrast, the personal utility values of job security and time for family, and the desire to enhance social equity, were rated lower; social influences of friends, family, and coworkers were rated the least influential. All motivations were rated above the scale midpoint, with the exception of “social influences” (see Fig. 2), implying that choice of teaching as a career was more the result of an individual decision than others’ social persuasion.

3.4. Different perceptions about teaching across samples and settings?

There was consensus that teaching is a career high in task demand. In each of the Australian, U.S., and German samples the highest rating was given for perceiving teaching to be highly demanding, followed by teaching as an expert career. Sample means for each perceptions construct are summarised in Table 6 and depicted in Fig. 3. All paired comparisons differed statistically significantly ($p < .05$).

- The U.S. sample had higher perceptions of task demand (expert career, high demand) than the Australian, followed by the German sample.
- For task return (social status, salary) the picture was mixed. The U.S. perceived the status of teaching highest, and the German sample lowest. The reverse was true for salary, which the U.S. sample rated lowest, and the German sample highest. Therefore, recognition of higher teaching salaries in the German setting did not translate into perceiving teaching as high in status.
- Social dissuasion appeared fairly similar across the samples, although it was statistically significantly highest in the Australian, next in the U.S., and least in the German sample.

² All original FIT-Choice motivations for teaching were discriminable in each of the Australian, U.S. and Norwegian samples, with good model fit statistics (d.f. = 1072, Normal Theory Weighted Least Squares Chi-Square = 3311.842, RMSEA = .056, NFI = .944, NNFI = .956, CFI = .961). The U.S. sample was statistically significantly higher than the Australian and Norwegian, and the Australian sample was also significantly higher than the Norwegian, on the motivations to shape the future of children/adolescents.

³ On inspection of the German questionnaire, it appears that the items for these three factors share a very “active” form (doing, achieving, making, etc.) that is less evident in the English version, which may be contributing to the much higher correlations among factors in the German sample, contributing for example to an underlying latent “social activism”.

Table 3
Fit statistics for sequential constrained models.

| | | χ^2 | d.f. | RMSEA | SRMR | CFI | TLI | Δ TLI |
|-------------|---|----------|------|-------|------|------|------|--------------|
| Motivations | Model 1a: freely estimated | 2530.838 | 956 | .055 | .044 | .947 | .933 | |
| | Model 2a: loadings invariant | 2626.590 | 1004 | .054 | .046 | .945 | .934 | .001 |
| | Model 3a: loadings & intercepts invariant | 2963.624 | 1052 | .058 | .048 | .935 | .926 | .008 |
| Perceptions | Model 1b: freely estimated | 659.407 | 321 | .039 | .033 | .979 | .974 | |
| | Model 2b: loadings invariant | 701.585 | 336 | .040 | .036 | .978 | .973 | .001 |
| | Model 3b: loadings & intercepts invariant | 1015.921 | 358 | .052 | .043 | .960 | .954 | .019 |

- Participants from all three settings rated their satisfaction with the choice of a teaching career very high; significantly highest in the U.S., then Australian, and finally the German sample.

None of participants' perceptions about teaching related especially strongly to their degree of satisfaction with their choice of teaching as a career. In particular, the higher perceptions of salary in the German sample had a negligible correlation with satisfaction. Experiences of social dissuasion, highest in the Australian sample, had negligible relationships with satisfaction in each of the Australian and U.S. samples, and no significant correlation in the German sample, where social dissuasion had been lowest. Perceptions of teaching as an expert career and a high demand career exhibited positive, albeit weak, relationships with satisfaction. In the Australian and U.S. samples where salary was rated relatively low, perceived social status and salary were substantially correlated; in the German sample where salary was rated quite high, there was a weak relationship between salary and perceived social status. Dissuasion appeared to relate to social status across all three samples, additional to salary in the Australian, and difficulty in the German sample. Latent correlations among perceptions constructs are shown in Table 7 for each sample.

4. Discussion

We had two major aims within this investigation: the first, to examine the utility and validity of the FIT-Choice scale (Watt & Richardson, 2007) for measuring teaching motivations within and across samples and settings; the second, to explore differences in motivations and perceptions related to the teaching profession across the different samples, as first indications of differences among Australian, U.S., German, and Norwegian samples. Understanding influential motivations for individuals who choose teaching as a career has important implications to enhance the effectiveness of recruitment and retention efforts, which can then target those motivations that are most relevant, rather than relying on traditional messages such as the desire to help children and make a social difference. Further, such understandings are critical for teacher education and early career induction. We do not suggest that faculties of teacher education screen or select candidates on the basis of their motivations to teach, which would be a misapplication of our findings. The point is rather, that if teacher educators do not take beginning teachers' motivations into account in instruction and activities, preservice teachers may suffer interest losses and reconsider their career choice. Subsequently, teachers who find

Table 4
Factor solution for motivations measurement equivalent Model: Item intercepts (TX), factor loadings (LX), latent means (KA) and Cronbach alpha reliabilities.

| | Alpha Aust/U.S./Germ./ Norway | KA U.S./Germ./ Norway | Item | TX | LX | Sig. ($p < .05$) ^a |
|---|----------------------------------|--------------------------|------|-------|-------|---------------------------------|
| Perceived teaching abilities | .831/.778/.805/.753 | .313/-.178/-.542 | B5 | 5.775 | 1.000 | abcdef |
| | | | B19 | 5.532 | 1.162 | |
| | | | B43 | 5.623 | 1.066 | |
| Intrinsic value | .721/.701/.717/.786 | .342/-.329/-.292 | B1 | 6.118 | 1.000 | abcde |
| | | | B12 | 5.883 | 1.165 | |
| Job security | .839/.818/.893/.823 | -.238/-.391/-.467 | B14 | 5.227 | 1.000 | ade |
| | | | B27 | 4.712 | 1.024 | |
| | | | B38 | 5.027 | 1.163 | |
| | | | B2 | 3.834 | 1.000 | |
| Time for family | .836/.791/.881/.765 | .169/.065/-.119 | B16 | 4.598 | 1.401 | ac |
| | | | B29 | 4.222 | 1.363 | |
| | | | B36 | 5.000 | 1.000 | |
| Enhance social equity | .843/.873/.767/.780 | .335/.167/-.983 | B49 | 4.709 | .988 | abcef |
| | | | B6 | 5.592 | 1.000 | |
| Make social contribution | .823/.796/.806/.752 | .452/-.126/-.702 | B20 | 5.753 | .864 | abcef |
| | | | B31 | 5.024 | 1.183 | |
| | | | B13 | 5.503 | 1.000 | |
| | | | B26 | 5.052 | 1.091 | |
| Work with children/adolescents | .895/.895/.912/.909 | .581/.472/-.300 | B37 | 5.656 | .871 | acdef |
| | | | B17 | 4.953 | 1.000 | |
| | | | B30 | 4.899 | 1.032 | |
| | | | B39 | 5.268 | .641 | |
| Prior teaching and learning experiences | .874/.860/.875/.836 | .844/-.017/-.473 | B17 | 4.953 | 1.000 | abcef |
| | | | B30 | 4.899 | 1.032 | |
| | | | B39 | 5.268 | .641 | |
| Social influences | .815/.883/.854/.854 | .452/.302/-.140 | B3 | 3.023 | 1.000 | acdf |
| | | | B24 | 3.335 | .991 | |
| | | | B40 | 3.536 | .984 | |
| | | | B40 | 3.536 | .984 | |

All parameter estimates are presented in unstandardized form. Not presented are the uniquenesses. The first indicator of each construct was fixed to 1 to establish the factor metric.

Latent means (KA) are relative to the Australian reference group in the original metric.

^a a denotes U.S. significantly different from Australia, b denotes U.S. significantly different from Germany, c denotes U.S. significantly different from Norway, d denotes Australia significantly different from Germany, e denotes Australia significantly different from Norway, f denotes Germany significantly different from Norway.

Table 5
Latent correlations among motivations for teaching.

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----|
| <i>Australia</i> | | | | | | | | | |
| 1. Perceived teaching abilities | 1 | | | | | | | | |
| 2. Intrinsic value | .677 | 1 | | | | | | | |
| 3. Job security | .218 | .048 | 1 | | | | | | |
| 4. Time for family | .168 | .065 | .523 | 1 | | | | | |
| 5. Enhance social equity | .335 | .372 | .126 | .084 | 1 | | | | |
| 6. Make social contribution | .449 | .451 | .187 | .136 | .679 | 1 | | | |
| 7. Work with children/adolescents | .416 | .634 | .133 | .168 | .423 | .441 | 1 | | |
| 8. Prior teaching and learning experiences | .216 | .253 | .161 | .156 | .266 | .365 | .250 | 1 | |
| 9. Social influences | .230 | .146 | .274 | .273 | .159 | .213 | .191 | .229 | 1 |
| <i>U.S.</i> | | | | | | | | | |
| 1. Perceived teaching abilities | 1 | | | | | | | | |
| 2. Intrinsic value | .672 | 1 | | | | | | | |
| 3. Job security | .294 | .134 | 1 | | | | | | |
| 4. Time for family | .297 | .057 | .562 | 1 | | | | | |
| 5. Enhance social equity | .431 | .313 | .139 | .109 | 1 | | | | |
| 6. Make social contribution | .459 | .351 | .160 | .071 | .695 | 1 | | | |
| 7. Work with children/adolescents | .462 | .485 | .235 | .243 | .534 | .476 | 1 | | |
| 8. Prior teaching and learning experiences | .298 | .321 | .124 | .086 | .259 | .329 | .262 | 1 | |
| 9. Social influences | .336 | .170 | .287 | .251 | .209 | .278 | .232 | .292 | 1 |
| <i>Germany</i> | | | | | | | | | |
| 1. Perceived teaching abilities | 1 | | | | | | | | |
| 2. Intrinsic value | .890 | 1 | | | | | | | |
| 3. Job security | –.106 | –.220 | 1 | | | | | | |
| 4. Time for family | –.014 | –.199 | .651 | 1 | | | | | |
| 5. Enhance social equity | .553 | .660 | –.214 | –.050 | 1 | | | | |
| 6. Make social contribution | .515 | .584 | –.103 | –.073 | .806 | 1 | | | |
| 7. Work with children/adolescents | .601 | .649 | –.114 | –.018 | .670 | .560 | 1 | | |
| 8. Prior teaching and learning experiences | .257 | .289 | .037 | –.098 | .156 | .333 | .113 | 1 | |
| 9. Social influences | .273 | .197 | .262 | .218 | .164 | .331 | .218 | .225 | 1 |
| <i>Norway</i> | | | | | | | | | |
| 1. Perceived teaching abilities | 1 | | | | | | | | |
| 2. Intrinsic value | .801 | 1 | | | | | | | |
| 3. Job security | .040 | .022 | 1 | | | | | | |
| 4. Time for family | .202 | .240 | .547 | 1 | | | | | |
| 5. Enhance social equity | .371 | .392 | .088 | .195 | 1 | | | | |
| 6. Make social contribution | .444 | .303 | .067 | .203 | .559 | 1 | | | |
| 7. Work with children/adolescents | .405 | .542 | .153 | .281 | .689 | .476 | 1 | | |
| 8. Prior teaching and learning experiences | .279 | .310 | .538 | .349 | .434 | .306 | .402 | 1 | |
| 9. Social influences | .429 | .291 | .362 | .449 | .267 | .393 | .299 | .362 | 1 |

Bolded numbers denote statistical significance ($p < .05$).

themselves in settings which do not allow them to realise their motivations are likely to feel less efficacious, less satisfied with their career choice, and to experience burnout or leave the profession.

4.1. The FIT-Choice scale – utility and validity in cross-cultural research on teaching motivations

Strong factorial invariance implied that scale constructs were generalisable within each of the settings from which we had obtained samples, that sources of bias and error were minimal, and that cross-sample differences did not affect the constructs' underlying measurement characteristics. With the omission of two subscales (job transferability, fallback career; respectively insufficiently reliable in the German and Norwegian, and U.S. and Norwegian samples), strong factorial invariance of the FIT-Choice scale was established. In post hoc interpretation, it made sense to us that job transferability would hold less meaning in the German and Norwegian contexts, because of distinct State-based requirements in Germany, and the smaller population in Norway; and, that fallback career would be less meaningful in Norway where entry to university studies is highly competitive.

The validity of the German translation of the instrument was examined within the study. The translated form demonstrated strong factorial invariance with data yielded in the comparison samples, with the exception of the factor “shape future of children/adolescents” mentioned earlier (and Footnotes 1 and 2). The

German translation of the social utility factors may have shared a more active form of verbs than in the original English version (e.g., doing, achieving, making), contributing to their higher intercorrelations and an underlying “social activism”. Researchers interested in using the German translation could further examine these ideas for the social utility factors of the FIT-Choice scale.

4.2. Perceptions about teaching as a career

In our review at the beginning of the paper, we documented the differential demand and reward structures for teachers in each of our sample settings. In Australia, the U.S., and Norway, teaching salaries are low relative to the OECD mean, whereas in Germany they are quite high. Across each of Australia, the U.S., Norway, and Germany, the status or prestige of teachers in the community and popular press has taken a downward turn, however this has been most particularly the case in Germany following the “PISA-shock” (Baumert et al., 2003). Intriguingly, both task demand factors correlated positively with individuals' reported satisfaction with the choice of a teaching career, indicating the demand features of teaching do not deter, and may in fact act as *incentives* to choosing teaching as a career for individuals who seek to develop expertise in challenging environments (Richardson & Watt, 2006).

Prospective teachers' perceptions of teaching salaries across the three settings reflected the differences in salary rewards. The same was true in relation to perceptions of the social status of teachers

Table 6

Factor solution for perceptions measurement equivalent Model: Item intercepts (TX), factor loadings (LX), latent means (KA) and Cronbach alpha reliabilities.

| | Alpha Aust/ U.S./Germany | KA U.S./ Germany | Item | TX | LX |
|-------------------|-----------------------------|---------------------|------|-------|-------|
| Expert career | .732/.696/.802 | .193/-.792 | C10 | 5.589 | 1.000 |
| | | | C14 | 5.048 | .694 |
| High demand | .730/.655/.740 | .158/-.274 | C2 | 5.798 | 1.000 |
| | | | C7 | 6.305 | .774 |
| | | | C11 | 6.187 | 1.124 |
| Social status | .904/.875/.870 | .213/-.316 | C4 | 4.393 | 1.000 |
| | | | C8 | 3.474 | 1.088 |
| | | | C9 | 3.776 | 1.113 |
| | | | C12 | 4.338 | 1.146 |
| | | | C13 | 3.696 | 1.048 |
| Salary | .929/.898/.941 | -.281/.993 | C1 | 3.252 | 1.000 |
| | | | C3 | 3.393 | .997 |
| Social dissuasion | .680/.691/.745 | -.258/-.528 | D2 | 4.674 | 1.000 |
| | | | D4 | 3.636 | 1.000 |
| | | | D6 | 3.945 | 1.000 |
| | | | D3 | 5.869 | 1.000 |
| Satisfaction | .923/.943/.933 | .342/-.414 | D5 | 5.943 | .964 |

All parameter estimates are presented in unstandardised form. Not presented are the uniquenesses. The first indicator of each construct was fixed to 1 to establish the factor metric, and in the case of "social dissuasion" gammas were constrained to equally contribute.

Latent means (KA) are relative to the Australian reference group in the original metric.

All paired comparisons statistically significant ($p < .05$).

and the teaching profession. These task return perceptions exhibited positive relationships with participants' satisfaction with the choice of a teaching career in the Australian and U.S. samples, but interestingly showed no significant relationships in the German sample. We should not therefore discount salary raises as a method by which to improve the social standing of the teaching profession on the basis of the particularities of the German case, in which "the current composition of the compensation package concentrates also solely on salaries" (Halász et al., 2004, p. 36). Probably salary alone is insufficient inducement with which to adjust social and particularly teachers' perceptions, and needs to be considered in relation to a range of other reward structures. Particularly interesting is the disparity between perceived salary and status in the German sample, who rated salary the highest and status the lowest.

Table 7

Latent correlations among perceptions about teaching.

| | Expert career | High demand | Social status | Salary | Social dissuasion | Satisfaction |
|-------------------|------------------|----------------|------------------|--------------|----------------------|--------------|
| <i>Australia</i> | | | | | | |
| Expert career | 1 | | | | | |
| High demand | .473 | 1 | | | | |
| Social status | .160 | -.037 | 1 | | | |
| Salary | -.003 | -.110 | .498 | 1 | | |
| Social dissuasion | .043 | .002 | -.229 | -.172 | 1 | |
| Satisfaction | .188 | .131 | .195 | .130 | -.088 | 1 |
| <i>U.S.</i> | | | | | | |
| Expert career | 1 | | | | | |
| High demand | .494 | 1 | | | | |
| Social status | .167 | .029 | 1 | | | |
| Salary | .091 | -.056 | .458 | 1 | | |
| Social dissuasion | .004 | -.018 | -.159 | -.068 | 1 | |
| Satisfaction | .230 | .194 | .168 | .170 | -.052 | 1 |
| <i>Germany</i> | | | | | | |
| Expert career | 1 | | | | | |
| High demand | .421 | 1 | | | | |
| Social status | .158 | -.126 | 1 | | | |
| Salary | .163 | -.040 | .247 | 1 | | |
| Social dissuasion | -.074 | -.151 | -.127 | -.050 | 1 | |
| Satisfaction | .239 | .284 | .160 | -.085 | -.153 | 1 |

Bolded numbers denote statistical significance ($p < .05$).

Demonstrably, higher salaries did not translate into improved perceptions regarding the social standing of teachers and the teaching profession. It would seem that popular views of using salary increases as a single lever with which to adjust the supply profile of teachers may only have an impact in the short term.

Participants from the different settings reported moderate levels of social dissuasion from their choice of a teaching career, which did not relate to their perceptions of teaching as being either high in demand or low in reward. Yet, satisfaction with the choice of teaching as a career was rated very high. This speaks to teaching as a career of personal choice, despite perceived low salary and social status. The relatively weak ratings for social influences may not be surprising given the current low status of the teaching profession in Australia (Ramsay, 2000) and elsewhere (Crow, Levine, & Nager, 1990; Liu et al., 2000; OECD, 2004a,b), particularly Germany (see Baumert et al., 2003).

4.3. Motivations for choosing teaching as a career

We had expected that between-sample differences in motivations might be most evident for the personal utility FIT-Choice factors (job security, time for family), which tap benefits the individual may experience as a teacher, distinct from external reward structures such as salary and social status. There was some evidence for this, with the Australian sample scoring significantly higher than the other three samples on job security; and the U.S. sample scoring highest on time for family.

Unlike in Australia,⁴ in the U.S., Germany, and Norway, prospective teachers are required to obtain an additional teaching certification through external examination procedures, subsequent to their attainment of a teaching qualification. Job security therefore may tap an additional aspect in these samples, related to whether individuals expect to be successful in fulfilling all assessed aspects of the layered qualification and certification system as well as actually obtaining a teaching position in the first place. This could partly explain the higher ratings in the Australian sample for job security as a motivation for choosing a teaching career. In addition, at the time our U.S. Michigan data were collected, a quick succession of school closures in Detroit, the largest city in the State of Michigan, may have impacted on these U.S. participants' perceptions of teaching as a secure job. Similarly, in Norway, beginning teachers post-1989 no longer have the status of public officials who are not subject to dismissal, teacher employment has recently been decentralised and certification procedures have been introduced, all of which are likely to impact on Norwegian participants' motivations to teach for reasons of job security.

Higher time for family motivations among the U.S. sample may occur as the result of teaching providing for greater flexibility of employment (e.g., part-time and casual) and shorter working hours (e.g., school vacation periods as compared with the two weeks provided for other professionals). Although flexible working arrangements and shorter working hours are also characteristic of teaching in our other samples, the greater flexibility for teachers relative to other professionals in the U.S. setting in particular, may explain the higher importance of time for family in attracting individuals into the teaching profession in that sample.

The other factors for which we had anticipated systematic differences were the social utility values: "enhance social equity", "make social contribution", and "work with children/adolescents".

⁴ Since the time our data were collected in the Australian States of New South Wales and Victoria, a process of teacher certification has begun, although this does not involve examinations and evaluations of the type in our other samples, but is instead a matter of registration and membership.

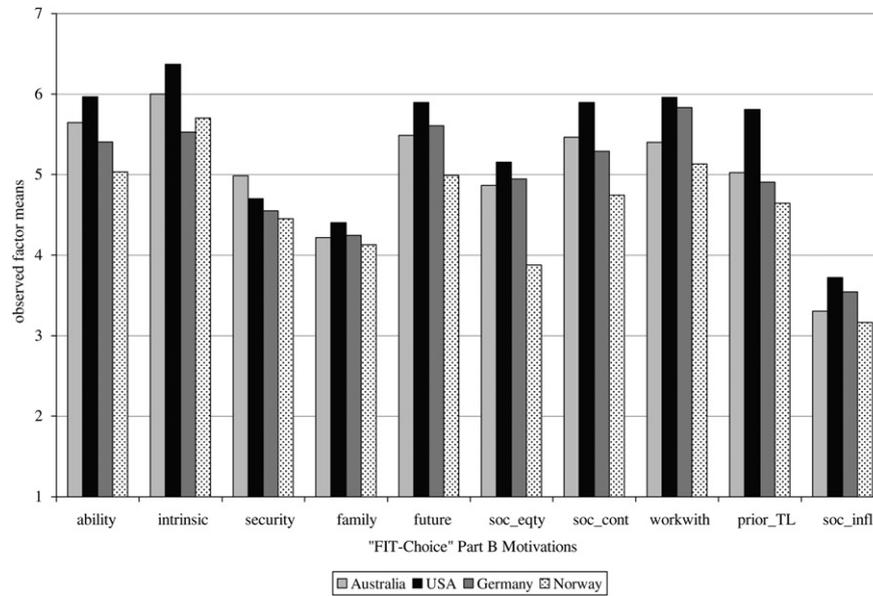


Fig. 2. Motivations for teaching: Observed factor means for Australian, U.S., German, and Norwegian samples. *Note.* Although “shape future of children/adolescents” was not empirically distinguishable in the German sample from “enhance social equity” and “make social contribution” (refer to Footnote 2), it is depicted here for comparability with the other samples. Abbreviations: ability = Perceived teaching abilities; intrinsic = Intrinsic value; security = Job security; family = Time for family; future = Shape future of children/adolescents; soc_eqty = Enhance social equity; soc_cont = Make social contribution; workwith = Work with children/adolescents; prior_TL = Prior teaching & learning experiences; soc_infl = Social influences.

Because of Norway’s egalitarian principles of unity and equality in school (Lyng & Blichfeldt, 2003, p. 69) we had anticipated that there would be less perceived need for interventions to target structural social and educational inequities, and consequently that the Norwegian participants would be less motivated to pursue teaching for reasons related to social utility. In support of this hypothesis, the Norwegian sample did indeed score significantly lowest on all of the social utility factors. Systematic differences were not expected nor identified across the remaining motivation factors of perceived

teaching ability, intrinsic value, prior teaching and learning experiences, and social influences, although there was some tendency for the U.S. sample to demonstrate higher ratings, and for Norway to show lower ratings, perhaps indicative of a cultural response bias.

The motivational factors most strongly emphasised in the Eccles et al. expectancy-value model are perceived ability and intrinsic value (Eccles, 2005; Eccles (Parsons) et al., 1983), which were also highly rated within the context of choosing teaching as a career within all four samples. Prior experiences of positive teaching and learning

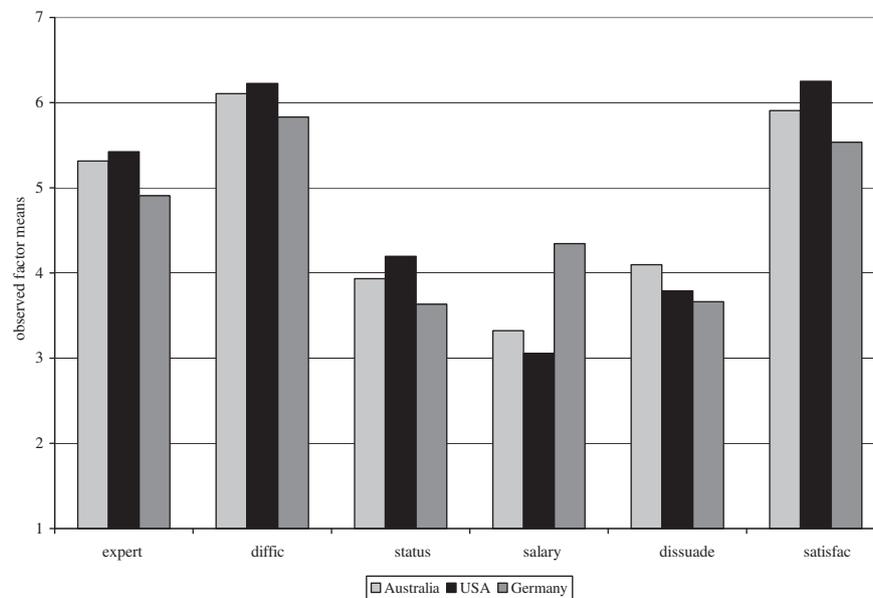


Fig. 3. Perceptions about teaching: Observed factor means for Australian, U.S., and German samples. *Note.* All paired comparisons differ significantly ($p < .05$). Abbreviations: expert = Expert career; diffic = High demand; status = Social status; salary = Salary; dissuade = Social dissuasion; satisfac = Satisfaction.

experiences were rated quite high (particularly in the U.S.), which may be particular to the choice of teaching as a career. Because almost every individual has been a student, effective (and ineffective) teachers can provide powerful role models, as well as the opportunity for vicarious personal judgements concerning one's own teaching-related abilities. Other professions may not be so readily visible to the public, who may not feel that they have a good idea of what it is that other professions involve; consequently we would not expect the influence of this motivational factor to apply in the same way to individuals' choices of other professions.

4.4. Conclusions and limitations

The FIT-Choice scale (Watt & Richardson, 2007) displayed good construct validity and reliability across diverse samples. Some factors, job transferability and teaching as a fallback career, were not relevant in all settings, pointing to cultural and professional particularities. The FIT-Choice scale provides a psychometric and theoretical framework which could prove useful to guide investigations in the area, providing a systematic and integrated approach to facilitate comparisons across samples and settings, to yield findings rich in implications for both recruitment and retention of teachers. Because our samples were opportune rather than representative, and rather small in Germany and Norway, sample differences could provide only first indications of sociocultural differences across settings. Within settings, further differences are likely such as between primary/elementary and secondary teachers, secondary subject specialisms, or teaching locale. A common scale provides a platform for many different kinds of comparisons across subsamples and settings.

Highly interesting was our finding that motivations appeared more similar than different across the four samples. The highest rated motivations for the choice of a teaching career were consistently intrinsic value, perceived teaching ability, the desire to make a social contribution, to work with children/adolescents, and having had positive prior teaching and learning experiences. The fact that contextual country features did not produce greatly different patterns of motivations raises interesting questions such as whether there are "core" motivations shared by those who are attracted to a teaching career, or whether certain personality types are more likely to choose teaching. In future research, involving larger and more representative samples, it would be useful to examine prospective teachers from contexts which are more different still.

The desire for job security, to enhance social equity, and for choosing teaching because of its provision for family time were rated consistently lower across the four settings. Of particular interest to us is the fact that time for family was rated relatively low, although it has frequently been cited as one of the most influential factors to attract people into teaching. When contextualised within a framework of competing motivations in which individuals rate (rather than rank or nominate) each motivation, we can see that it is less important than other motivations.

Our study is timely as governments and employing authorities around the world simultaneously attend to improving teacher recruitment and retention, restructuring teachers' work and careers, reforming initial teacher education and professional development, and finding ways to enhance teaching effectiveness. Recruitment and retention efforts have tended to focus on a limited subset of motivations, predominantly relating to the opportunity to make a social contribution and the prospect of working with children, likely limiting their audience and effectiveness. Future research could productively additionally sample individuals who have decided against teaching as a career, or have not thought to consider teaching as a career choice, to gain insights about why certain groups are generally missing from the profession, such as

minority ethnic groups. Our findings concern why people do choose teaching, an equally important next question is why others do not.

Limitations of the study include the opportune samples which were involved, the omission of the perceptions section to the Norwegian sample, and some German translation difficulties. That the FIT-Choice scale demonstrated strong factorial invariance across these different opportune samples strengthens the conclusion that it can be utilised across a range of contexts. Being both theoretically comprehensive and psychometrically valid, the FIT-Choice instrument shows promise as a measure upon which future research into the question of what motivates individuals to choose teaching careers could fruitfully draw.

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