

NAFOL Årbok 2014

En gang lærer – alltid lærer?

NAFOL Year Book 2014

Once a Teacher – Always a Teacher?

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Anna-Lena Østern (red.)

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3

Beginning Teachers' Motivations, Effectiveness and Wellbeing

Helen M. G. Watt & Paul W. Richardson

Keynote resumé presented at the NAFOL conference, Tromsø, 21 May, 2014

Introduction

We began our longitudinal program of research into beginning teachers' motivations, engagement, coping and wellbeing with the observation that teachers represent a large, heterogeneous workforce in countries around the world, likely with differing expectations, beliefs, goals, values and perceptions of what it means to be a teacher. When reviewing the existing teacher education literature, we were surprised to find that although many studies had been conducted on reasons for choosing teaching as a career, it was not possible to compare them, due to different approaches and measures, and little or no information concerning theoretical underpinnings, reliability or construct validity. There was clearly a need to develop a theoretically comprehensive and psychometrically robust instrument with which to measure teachers' motivations.

In a first large-scale longitudinal study of beginning teachers in Australia, our Factors Influencing Teaching (FIT-)Choice project (www.fitchoice.org) continues to track the experiences of 1,651 future teachers from the time they entered into teacher education in 2002/3 (Phase 1), through to completion of their teaching degrees (Phase 2), until their early career teaching experiences of up to 7 years (Phase 3; see Figure 1). The initial Australian FIT-Choice sample included secondary, primary and early childhood commencing preservice teachers, from undergraduate Bachelor and graduate-entry programs (see Richardson & Watt, 2006).

In our keynote at Tromsø, we concentrated on three sets of highlights based on a mix of previous and new findings from our overall program of research:

1. Which expectancies, values and goals are relevant for future teachers? (How) do they matter?
2. What happens to initial motivations for different types of beginning teachers?
3. How do beginning teachers cope? What are the risks for their effectiveness and wellbeing?

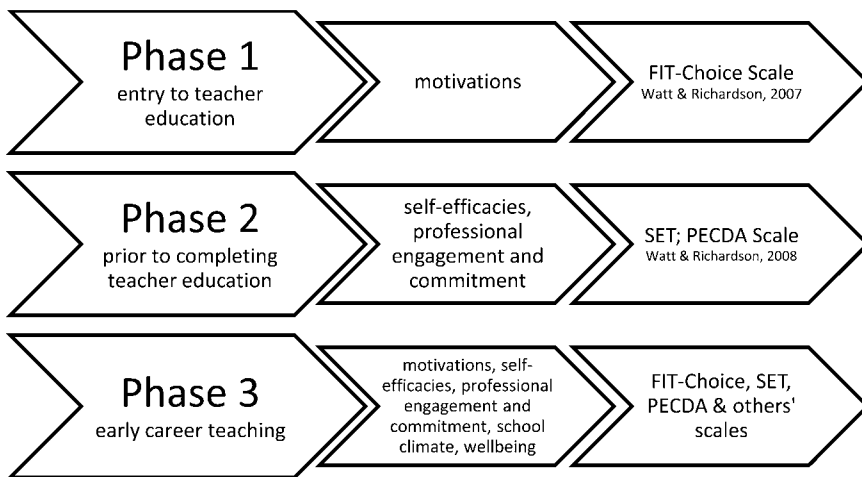


Figure 1. FIT-Choice program of research: Phases 1, 2 and 3.

Which expectancies, values and goals are relevant for future teachers? (How) do they matter?

The FIT-Choice program began with the development of our FIT-Choice scale, developed to assess the primary motivations of teachers to teach. It taps “altruistic” motivations emphasised in the teacher education literature (e.g., Book & Freeman, 1986; Brown, 1992; Lortie, 1975; Moran, Kilpatrick, Abbott, Dallatt, & McClune, 2001; Serow & Forrest, 1994), personally utilitarian motivations (job security, time for family, job transferability), intrinsic motivations, and ability-related beliefs. We have provided a review

elsewhere (Watt & Richardson, 2007) of how our FIT-Choice factors map onto expectancy-value theory, Social Cognitive Career Theory (SCCT; see Lent, Lopez, & Bieschke, 1993), and to key findings within the existing teacher education literature. The values described as motivating people to become teachers in the existing teacher education literature could be mapped to constructs within the expectancy-value theory, which also proposed additional important motivations. All parts of the model are assumed to work together to predict choice of a teaching career, and professional engagement outcomes such as the level of effort exertion and persistence in the profession over time and dimensions of teaching style.

The measured motivation factors are:

- perceived task demand (expertise and difficulty) and
- return (social status and salary),
- experiences of social dissuasion, and
- satisfaction with the choice of teaching as a career.

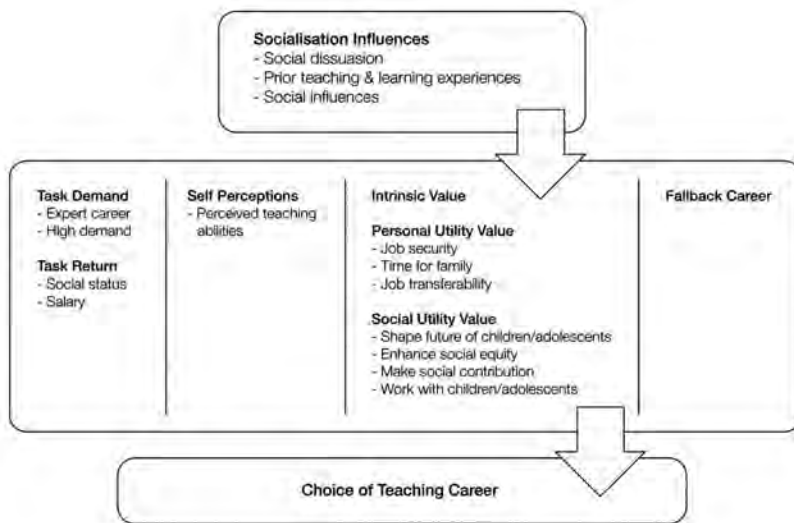


Figure 2. FIT-Choice empirically validated theoretical model.

- social influences,
- positive prior teaching and learning experiences,
- perceived teaching abilities,
- intrinsic value,

- personal utility values (job security, time for family, job transferability),
- social utility values (shape future of children/adolescents, enhance social equity, make social contribution, work with children/adolescents), and
- the negative “fallback” career motivation.

Measured perceptions of the profession are:

- perceived task demand (expertise and difficulty) and
- return (social status and salary),
- experiences of social dissuasion, and
- satisfaction with the choice of teaching as a career.

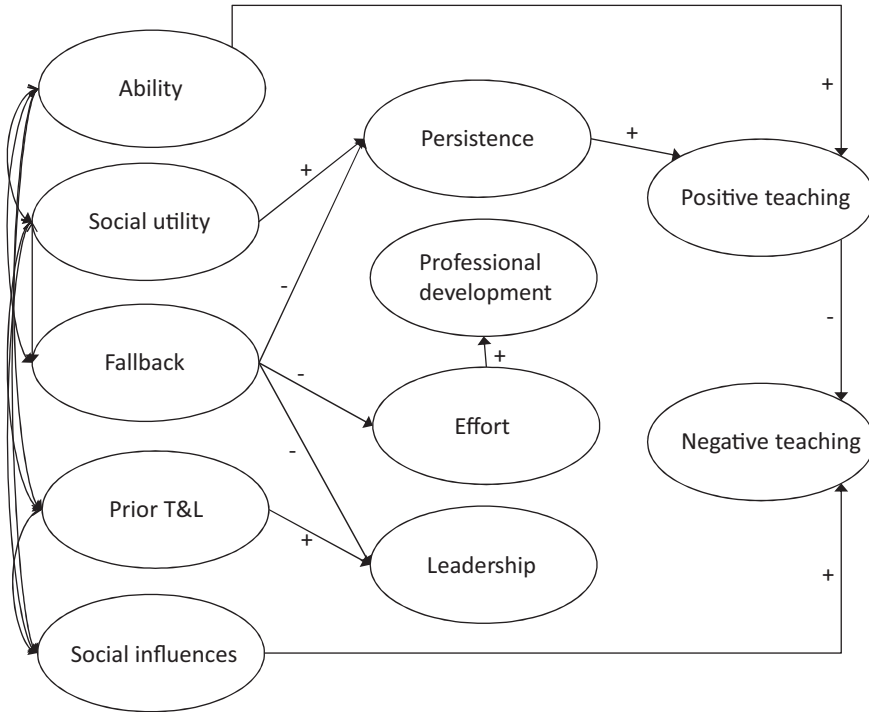
While there have been numerous studies of teacher motivation around the world, there has not been a reliable measure which would allow comparisons across settings or samples, or predictions of different kinds of outcomes, resulting in many findings which cannot be directly compared or synthesised. The FIT-Choice model (Figure 2) enables the comparative measurement of teacher motivations not only locally but also in diverse sociocultural contexts. With its publication in 2006 (Richardson & Watt, 2006), and subsequent technical validation in 2007 (Watt & Richardson, 2007), researchers elsewhere began to use the scale to undertake studies of initial teacher motivation for career choice, including in the United States, United Kingdom, Ireland, and translations into German, Croatian, Dutch, French, Mandarin, Estonian, Spanish, and Turkish. Such widespread adoption of the scale indicates that teacher motivation is an issue of concern in many different countries. Cross-cultural comparisons using the same measurement platform facilitate “natural experiments” in which to contrast the impact of particular, salient cultural features. For example, teachers in Germany are better paid; and, there is an over-supply of applicants to enrol in teacher education in Turkey. We can explore how salary impacts decisions about teaching in Germany vs. countries such as Australia where teachers are not highly paid (see Watt et al., 2012), and why teaching seems to be a more attractive career in Turkey where jobs with security and a pension are highly sought (see Kiliç, Watt, & Richardson, 2012). With samples from diverse settings and sociocultural contexts, we can compare different types of teachers, and relate their teaching motivations to other important factors such as early career teaching styles, teaching career commitment and teacher wellbeing. A common scale provides a platform

for many different kinds of comparisons and predictions. Being both theoretically comprehensive and psychometrically valid, the FIT-Choice scale appears a promising measure upon which future research could productively draw.

Across the Australian sample as a whole, the highest rated motivations for teaching were perceived teaching abilities, the intrinsic value of teaching, the desire to make a social contribution, shape the future, and work with children / adolescents. Choosing teaching as a “fallback” career was the lowest rated motivation, revealing teaching to be a career of choice rather than something one would do because other choices had not been realised; interestingly, this was followed by others’ encouragement to undertake teaching which we called “social influences”. Other motivations such as the desire to enhance social equity, the experience of having had positive prior teaching and learning experiences, the desire for job security, job transferability, and time for family were rated in between. Although it is often asserted that teaching is mainly chosen by women as a family-friendly career our findings showed this to be moderately rated when other competing motivations were compared in a comprehensive multidimensional motivational framework. Teacher candidates perceived teaching as having a heavy workload, being highly emotionally demanding, and requiring a high level of work commitment. They also perceived it to be a highly expert career requiring specialised and technical knowledge. At the same time, they reported experiences of relatively strong social dissuasion from a teaching career and saw it as offering comparatively low levels of social status and low salary. At the beginning of teacher education candidates expected the demands to be high, and returns low. And yet, their mean satisfaction ratings for the choice of teaching as a career were high.

The main motivations for entering teaching – primarily related to perceived skills set, the intrinsic enjoyment of teaching, desire to make a social contribution and work with youth – were all positive motivations, that predicted to subsequently high professional engagement at the commencement of their teaching careers (PECDA at Phase 2; see Watt & Richardson, 2007), and positive self-reported teaching style and professional engagement and commitment during early career teaching (TSS and PECDA at Phase 3). In contrast, fallback career motivations predicted lower plans to persist in teaching, lower levels of planned effort, lower leadership aspirations, and more negative reported teaching behaviors during early career, via reduced planned persistence. Interestingly, social influences to become a teacher led to later negative reported teaching practices; the nega-

tive effect of strong social persuasion consequently needs to be kept in mind when encouraging students to choose the teaching profession. Personal utility values did not predict PECDA or TSS dimensions (see schematic in Figure 3)¹.



Phase 1: FIT-Choice
entry to teacher education

Phase 2: PECDA
end of teacher education

Phase 3: TSS
early career teaching

Figure 3. Influences of initial teaching motivations on professional engagement and later reported teaching style (significant structural paths only represented, $p < .05$).

¹ Intrinsic value was excluded from these analyses due to high positive correlations with social utility values and ability motivations, and a high negative correlation with fallback career.

What happens to initial motivations for different types of beginning teachers?

To identify different types of beginning teachers, we applied hierarchical cluster analysis with Ward's method (elaborated in our subsequent Mixed-Methods NAFOL Workshop, 22 May 2014) to these future teachers' professional engagement and career development aspirations (PECDA, Phase 2) as an organising framework. We could discern three distinct profiles of future teachers (see Watt & Richardson, 2008). We named them the highly engaged persisters (45% of sample), highly engaged switchers (27%), and lower engaged desisters (28%). Counter to our expectations, they did not differ by whether they were to become secondary or primary school teachers (Watt & Richardson, 2008). They exhibited different demographic characteristics, initial teaching motivations and perceptions about the profession.

- *Highly engaged persisters* were most motivated by Intrinsic value, Perceived teaching abilities, and Social utility values; and, lowest on Fallback career. From the perspective of teacher educators, this cluster exhibited what might appear as a highly desirable profile for beginning teachers.
- The *highly engaged switchers* scored as high as the highly engaged persisters on the Social utility values, and in-between on Intrinsic value. They planned to exert high effort, undertake professional development, aspire to school leadership positions, and remained satisfied with their choice of teaching through the course of their degree, but, because they had other career plans, they were not planning to stay long in the profession. This group came from the highest socioeconomic backgrounds, were the youngest and least likely to have children, from non-English home language backgrounds, or had previous work experiences. This type provides a new and positive perspective on early career attrition, which policymakers will need to plan for.
- The high proportion of *lower engaged desisters* was challenging because they presented a rather negative motivational profile; due partly to negative practicum experiences, confrontation with the demanding nature of teachers' work, lack of school structural supports, difficulties experienced in working with children/adolescents, perceived lack of career prospects, and insecure employment.

Among a sample from the United States we distinguished three clusters (Watt, Richardson, & Wilkins, 2014), two of which resembled the Australian “highly engaged persisters (48% of the sample) and “lower engaged desisters” (32%). A new third cluster was the “classroom engaged careerists” (20%), who were high on planned effort, professional development plans, and persistence, but equally low with the “lower engaged desisters” on leadership aspirations. They were most motivated to teach based on their perceived teaching abilities and intrinsic values, as well as their desire to work with youth, shape the future of youth, and to enhance social equity, and had decided upon teaching the longest time ago, showing little interest in becoming a school leader but intent on a career as a classroom teacher.

It is likely that differences in career structure toward educational leadership positions could explain why classroom engaged careerists intended to remain in classroom teaching their whole careers, and the absence of the “highly engaged switchers” Australian cluster. In Australia, typical pathways to school leadership are from experience in classroom teaching over an extended period, whereas in the United States, different training is mostly required. Further research is required in additional cultural contexts that offer different school leadership pathways in order to test this explanation and establish the robustness or otherwise of these types. The robust emergence of the highly engaged persisters and lower engaged desisters across different samples and settings suggests that previous explanations for why people leave teaching within their first five years need to be carefully re-examined. It is clear that a significant percentage of people enter teacher education with developed plans for how long they will stay in the profession. This finding has implications for teacher employers and policymakers concerned with workforce planning, recruitment, and workforce renewal.

Would the highly engaged persisters, who exhibited a seemingly highly positive profile at completion of their teacher education, perform and cope best following professional entry? Or, might they instead be the most psychologically vulnerable to stressors and experience “reality shock” during their early career? We found initial evidence to confirm this latter speculation, through comparing differential changes in motivations, career choice satisfaction, and self-efficacies over the first five years of teaching (Watt & Richardson, 2010). Disturbingly, their positive motivations became frustrated on commencing in the teaching profession, mainly due to perceived lack of schools’ support, and even structural hindrances. The highly engaged persisters, who held the most idealistic motivations, maintained these to the same degree from commencing teacher education through into early career teaching. However, their stable idealistic moti-

vations were associated with reduced career choice satisfaction, lowered planned persistence, and self-efficacies. Whereas, for the other clusters, motivational adjustments related to stable satisfaction, planned persistence, and self-efficacies. It seems that motivational adjustments could be an adaptive coping response when there is mismatch between individual motivations and professional demands and affordances. The costs of maintaining high idealistic motivations when these may be unable to be achieved, appeared to be diminished career satisfaction, and reduced belief in their own skills to achieve valued outcomes.

How do beginning teachers cope? What are the risks for their effectiveness and wellbeing?

Teaching is increasingly recognised as a complex, demanding career. Teachers experience higher levels of stress and burnout than other professionals. The career is subject to heightened levels of public scrutiny and yet offers only modest rewards in the form of social status and income. How beginning teachers coped was seen to lead either to at-risk profiles, exhibited by a substantial proportion, versus positive wellbeing and effectiveness for those in settings where professional supports were high and afforded better outcomes. Drawing on a typological model of coping styles among a diverse large sample of German health professionals (see Kieschke & Schaarschmidt, 2008), we identified six types of emotional coping (*Good health*, *Sparing*, (*healthy*) *Ambitious*, (*path to*) *Burnout*, *Diligent*, and *Wornout*) among our longitudinal sample ($N = 612$ at Phase 3, at time of this analysis) of Australian primary and secondary teachers.

A significant outcome of our investigation was the empirical differentiation between burned out and wornout teachers, which extends the literature on teacher burnout (see Fernet, Guay, Sénécal, & Austin, 2012; Pyhältö, Pietarinen, & Salmela-Aro, 2011; Skaalvik & Skaalvik, 2007) and offers new directions to the study of “at risk” beginning teachers (see Richardson, Watt, & Devos, 2013). *Wornout* teachers, in contrast to (*path to*) *Burnout* teachers, had reduced professional ambition and exertion. During early career teaching, the (*path to*) *Burnout* and *Wornout* types had lowest career satisfaction, planned persistence and leadership aspirations (measured by PECDA); they reported the least positive expectations for students in their classes, relationships with their students and learning structure, but, higher negative interactions with students such as shouting

and sarcasm (measured by TSS); they also exhibited the highest levels of personal stress, anxiety and depression (measured by DASS; Lovibond & Lovibond, 1995).

Presentation summary

- Teaching motivations can be measured, and appear similarly across examined contexts.
- Teachers are primarily motivated by intrinsic and social values, and own teaching abilities (not by negative fallback motivations).
- Motivations matter, for professional engagement and teaching behaviours, even up to 7 years teaching.
- Different teacher engagement “types” exhibit different initial motivations, and show different adjustments to their teaching contexts.
- *Highly Engaged Persisters* maintain idealistic goals, seemingly at the expense of their self-efficacy, satisfaction and planned persistence.
- Different coping profiles appear among beginning teachers: *healthy Ambitious* coped best, *Burnout / Wornout* suffered most.

“Provocations” for Researchers and Practitioners

Implications for teacher recruitment, preparation and in-career induction concern how (and who?) to (i) assist teachers to achieve their goals and positive reasons for entering the profession, and (ii) equip them with strategies to cope with structural and interpersonal demands of teaching. Imperative challenges for next research, concern (iii) attracting and sustaining effective teachers, and (iv) whether different types of teachers thrive in different types of workplace contexts.

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References

- Book, C. L., & Freeman, D. J. (1986). Differences in entry characteristics of elementary and secondary teacher candidates. *Journal of Teacher Education, 37*(2), 47-51.
- Brown, M. M. (1992). Caribbean first-year teachers' reasons for choosing teaching as a career. *Journal of Education for Teaching, 18*, 185-195.
- Fernet, C., Guay, F., Senécal, C., & Austin, S. (2012). Predicting intraindividual changes in teacher burnout: The role of perceived school environment and motivational factors. *Teaching and Teacher Education, 28*, 514-525.
- Kieschke, U., & Schaarschmidt, U. (2008). Professional commitment and health among teachers in Germany: A typological approach. *Learning and Instruction, 18*, 429-437.
- Kilinc, A., Watt, H. M. G., & Richardson, P. W. (2012). Factors influencing teaching choice in Turkey. *Asia-Pacific Journal of Teacher Education, 40*, 199-226.
- Lent, R. W., Lopez, F. G., & Bieschke, K. J. (1993). Predicting mathematics-related choice and success behaviors: Test of an expanded social cognitive model. *Journal of Vocational Behavior, 42*, 223-236.
- Lortie, D. C. (1975). *School-teacher: A sociological study*. Chicago, IL: University of Chicago Press.
- Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Sydney: Psychology Foundation.
- Moran, A., Kilpatrick, R., Abbott, L., Dallatt, J., & McClune, B. (2001). Training to teach: Motivating factors and implications for recruitment. *Evaluation and Research in Education, 15*, 17-32.
- Pyhältö, K., Pietarinen, J., & Salmela-Aro, K. (2011). Teacher–working-environment fit as a framework for burnout experienced by Finnish teachers. *Teaching and Teacher Education, 27*(7), 1101-1110.
- Richardson, P. W., & Watt, H. M. G. (2006). Who chooses teaching and why? Profiling characteristics and motivations across three Australian universities. *Asia-Pacific Journal of Teacher Education, 34*, 27-56.
- Richardson, P. W., Watt, H. M. G., & Devos, C. (2013). Types of professional and emotional coping among beginning teachers (Ch. 12, pp. 229-254). In M. Newberry, A. Gallant, & P. Riley (Eds.), *Emotion and school*; Advances in Research on Teaching, Volume 18. Emerald Group Publishing Ltd.
- Skaalvik, E. M., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology, 99*(3), 611-625.
- Serow, R. C., & Forrest, K. D. (1994). Motives and circumstances: Occupational-change experiences of prospective late-entry teachers. *Teaching and Teacher Education, 10*, 555-563.

- Watt, H. M. G., & Richardson, P. W. (2007). Motivational factors influencing teaching as a career choice: Development and validation of the FIT-Choice scale. *Journal of Experimental Education, 75*, 167-202.
- Watt, H. M. G., & Richardson, P. W. (2008). Motivations, perceptions, and aspirations concerning teaching as a career for different types of beginning teachers. *Learning and Instruction, 18*, 408-428.
- Watt, H. M. G. & Richardson, P. W. (April, 2010). *When the rubber hits the road: Changing motivations for teacher subtypes in the first five years of teaching*. Paper presented in Symposium titled "Teacher motivation: Applying motivational theories using international samples and diverse methodological approaches" at the AERA Conference, Denver, April 30 – May 4, 2010.
- Watt, H. M. G., Richardson, P. W., Klusmann, U., Kunter, M., Beyer, B., Trautwein, U., & Baumert, J. (2012). Motivations for choosing teaching as a career: An international comparison using the FIT-Choice scale. *Teaching and Teacher Education, 28*, 791-805.
- Watt, H. M. G., Richardson, P. W., & Devos, C. (2013). (How) does gender matter in the choice of a STEM teaching career and later teaching behaviours? In H. M. G. Watt, N. Jansen, & G. Joukes (Eds.), 'Gendered pathways towards (and away from) STEM fields'. *International Journal of Gender, Science and Technology, 5*(3), 187-206.
- Watt, H. M. G., Richardson, P. W., & Wilkins, K. (2014). Profiles of professional engagement and career development aspirations among USA preservice teachers. *International Journal of Educational Research, 65*, 23-40.