



**Queensland University of Technology**  
Brisbane Australia

This is the author's version of a work that was submitted/accepted for publication in the following source:

[Watters, James J. & Diezmann, Carmel M.](#) (2012) Identity development in career-changing beginning teachers : a qualitative study of professional scientists becoming school teachers. In *American Educational Research Association Annual Meeting*, 13-17 April 2012, Vancouver Convention Center, Vancouver. (Unpublished)

This file was downloaded from: <http://eprints.qut.edu.au/49569/>

**© Copyright 2012 James J. Watters & Carmel M. Diezmann**

**Notice:** *Changes introduced as a result of publishing processes such as copy-editing and formatting may not be reflected in this document. For a definitive version of this work, please refer to the published source:*

# **Identity Development in Career-Changing Beginning Teachers: A Qualitative Study of Professional Scientists Becoming School Teachers**

James J Watters & Carmel M Diezmann  
Faculty of Education

Queensland University of Technology  
Australia

## **Abstract**

This qualitative study provides a critical case to analyse the identity development of professionals who already have a strong sense of identity as scientists and have decided to relinquish their professional careers to become teachers. The study followed a group of professionals who undertook a one-year teacher education course and were assigned to secondary and middle-years schools on graduation. Their experiences were examined through the lens of self-determination theory, which posits that autonomy, confidence and relationships are important in achieving job satisfaction. The findings indicated that those teachers who were able to achieve this sense of autonomy and confidence, and had established strong relationships with colleagues generated a positive professional identity as a teacher. The failure to establish supportive relationships was a decisive event that challenged their capacity to develop a strong sense of identity as a teacher.

### **Contact Details:**

A/Professor Jim Watters,  
Faculty of Education,  
Queensland University of Technology (QUT)  
Victoria Park Road  
Kelvin Grove  
Brisbane 4059  
[j.watters@qut.edu.au](mailto:j.watters@qut.edu.au)

Professor Carmel Diezmann  
Faculty of Education, QUT  
Victoria Park Road,  
Kelvin Grove, Brisbane 4059  
[c.diezmann@qut.edu.au](mailto:c.diezmann@qut.edu.au)

Acknowledgment: This study was supported by the Australian Research Council grant DP0984349

Paper presented at the AERA annual conference Vancouver Canada , 13-17<sup>th</sup> April 2012

## **Background**

This paper examines the experiences of beginning science and mathematics teachers who were transitioning from a professional career in science-related careers to teaching. The experiences of beginning teachers have been extensively studied for over half a century (e.g., Veenman, 1984). However, the research reported here focuses on a cohort of beginning teachers about whom relatively little has been documented. In the context of debate about teacher effectiveness and teacher retention one reaction has been to argue for teacher recruitment programs that target highly qualified professionals on the assumption that their experiences and enthusiasm for their subject matter will inspire more students to achieve greater outcomes in school and to pursue careers in the sciences. Hence, this paper focuses on those teachers who have had careers in the sciences or related fields before deciding to enter teacher education programs and pursue a school teaching career. We describe these as career-change teachers in this paper.

Recruiting and retaining quality teachers, especially in the area of mathematics and science, is a major issue. Mounting research has confirmed the importance of quality teaching in maximising student achievement (e.g. Gordon, Kane, & Staiger, 2006, Hattie, 2009; Rivkin, Hanushek & Kain, 2005; Rockoff, 2004). However, defining the attributes of quality teachers is somewhat problematic. The relative importance of a teacher's own subject matter knowledge of the field in which they teach, their teacher preparation program, their personality and their dispositions toward teaching are all hotly debated (Berry, Daughtrey, & Wiede, 2009). Teacher turnover is a concern not only because of its impact on stability of staffing but also because of its impact on student performance (Fantilli & McDougall, 2009; Ingersoll, 2001; Patterson, Roehrig, & Luft, 2003). In Australia, where this study was undertaken, attrition rates are comparable with those in North America with between 40-50% of teachers leaving the profession within five years (Maciejewski, 2007). Berry et al., (2009), in a commentary on teacher effectiveness, cite the quality of leadership, planning time, collaboration, opportunities to be involved in planning and support as key features that "all correlate highly with teachers' plans to remain in teaching" (p. 5). Ingersoll (2001) has compared the situation to a "revolving door" with qualified teachers exiting almost immediately after they begin the new career. He argues that poor organisational systems are a significant factor to consider. Schools are organisations that depend on commitment, cohesion and collaboration and where this is not present there is a lack of satisfaction and teacher motivation. The experiences of the beginning years of teaching are crucial as the teacher refines his or her knowledge of teaching (Schempp, Sparkes, & Teplin, 1998) and builds a professional identity as a teacher. Thus, although teacher knowledge in all its forms play some part in the moulding of a competent teacher, the sense of being a teacher – as sense of identity – establishes a feeling of belonging and acceptance within the profession.

## **Theoretical Framework**

This study draws on and extends identity theory (Hogg, Terry, & White, 1995) by considering the context in which identity is developed, namely, the workplace. Hogg et al. highlight two

theoretical perspectives on identity theory. One construction drawn from the work of Stryker (1968) is that a person's social behaviour emerges through reciprocal relations between self and society. People's reflective interactions with those around them create their sense of identity of who they are. Society is complex and hence an individual's identity is multifaceted and expressed hierarchically in different ways in different contexts. An alternative perspective of identity with its own literature base draws on social identity theory which argues that people have a repertoire of discrete group memberships (e.g. nationality, political affiliation, religion, teacher, parent) that vary in relative overall importance in their self-concept (Hogg, 1993). Where there is a choice of transitioning from one group to another, individuals may choose to dis-identify and gain psychological entry to the more socially acceptable or dominant group. As aspect of identity formation is the notion of self-categorisation in which people see social groups idealised in terms of prototypes. If conditions are right and the category becomes meaningful they "come to see themselves and other category members less as individuals and more as interchangeable exemplars of the group prototype" (Hornsley, 2008 p. 209).

Thus the role identity of being a teacher might emerge through the socialisation and cultural experiences of the school staffroom or classroom. Transitioning from a student teacher, to a practitioner involves the formation of an identity as a teacher – a professional identity – which is moulded by the contextual experiences of the beginning years (Wilson & Deaney, 2010). However, people have identities other than that of being a student teacher. In the context of this study, the participants were engineers, research scientists, laboratory workers, and so on. They entered the role of student teacher with a pre-existing professional role identity. Thus they, in terms of Hogg's social identity theory were confronted with the reorganisation of identities and the transitioning from say an engineering professional role to that of science or mathematics teacher.

A positive and strong sense of professional identity is important to maintain self-esteem or self-efficacy, and a commitment to and a passion for teaching (Day, Kington, Stobart, & Sammons, 2006). What influences most the development of professional identity may depend on specific circumstances. For example, Beijaard (1995) argued that for secondary school teachers, professional identity is derived, in the first instance, from the subjects they teach, the status of those subjects and the relationships with colleagues who teach the same subject. Broader relationships within the school and networks with professional community provide further support especially for beginning teachers who are seeking advice and support (Fox & Wilson, 2009). In the absence of positive relationships beginning teachers will struggle to develop affirming identities. Thus, while they might develop personal identities as teachers, they struggle to build the professional identity that defines them as a member of a community.

Research on effective workplaces has identified six important factors as essential to positively related to job engagement, job satisfaction, and employee retention. These factors include job autonomy, learning opportunities, supervisor support for job success, co-worker team support for job success, and involvement in management decision making and workplace flexibility that acknowledges the relationship between employees' work life and their life outside of work (Jacob, Bond, Galinsky, & Hill, 2008). Similarly, self determination theory asserts that the *need for competence, autonomy and relatedness* are essential goal setting regulators that influence

career engagement (Deci & Ryan, 1991). Social-contextual facilitators can provide the affordances that allow a person's interest and commitment to be enhanced. It is predicted that where there is a high level of welcoming relations, and recognition of their skills and where there are opportunities for engage in challenging tasks job satisfaction will be developed with a professional teaching identity promoted. Hence, an investigation of the contextual factors in which identity is developed is essential, particularly for those beginning teachers who because of their strong subject matter knowledge presumably have an existing strong sense of identity as scientists.

### **Aims**

The aim of this study was to identify conditions that contributed to or hindered the development of a sense of professional identity as a science or mathematics teacher for career-changers with subject matter expertise.

### **Methods**

A qualitative case study approach to data generation was adopted because it allows the researcher to focus on obtaining rich descriptions of cultural and contextual factors that impact experiences and to probe how and why questions (e.g., Leech & Onwuegbuzie, 2007; Yin, 2003). Invitations to participate in the study were distributed through principals of approximately 400 high schools state-wide in the public and private sector, at conferences for beginning teachers and via email lists of graduating teachers at two universities. Invitation specifically targeted potential participants who had previous professional work careers. Initially 28 volunteers were identified. However thirteen participants (5 males, 8 females) (ages ~22-45) were selected for the study based on their academic profile which included at least three years work experience in a science career and convenience of geographical location. These participants had a degree and had undertaken a one-year Graduate Diploma of Education qualification to meet teacher registration requirements. The cohort of participants included two PhD qualified research scientists, an agricultural scientist, two engineers, a former flying instructor, a medical scientist, an ICT technician, a business manager, a nutritionist, an ecologist, a farmer with agricultural science qualifications, and a forest scientist.

**Data sources and evidence** There were three data collection cycles over the three years of the study. In year 1, (A) an initial 10-15 minute telephone interview was undertaken after two months of the teaching year to obtain demographic and relevant personal data; (B) after six months of teaching each participant was interviewed by phone or in person using a semi-structured interview protocol adapted from the literature (Luft & Roehrig, 2007); (C) approximately 5 hours of teaching a single topic in a grade 8 or 9 class were videotaped; and (D) a follow-up day-long interview was conducted approximately two weeks after completion of the topic. All participants were visited at their schools on at least two occasions and field notes recorded of the school environment and resources (Lawrence & Green, 1995). In years 2 and 3, additional data were gathered from a further 5 hours of videorecording of teaching each year and annual daylong debriefing sessions in which the same semi-structured interview protocols as used in year 1. In addition, think-aloud reflections on the teaching were employed following a sharing of excerpts in the classroom videotapes.

The paper focuses primarily on interview data. Information from the telephone interviews was summarised as memos and in tabulated form to provide a profile of the participant. Audio recordings from the extended interviews were transcribed verbatim. Transcripts were then analysed using the method of constant comparative analysis (Glaser & Strauss, 1967). Codes were assigned to individual utterances in an abductive manner. That is, codes emerged iteratively by assigning words or phrases that indicated meaning(s) to the utterance which were then revisited and refined when further utterances with similar meanings were identified. Codes were then grouped into broader themes that expressed theoretical frames. As second approach to analysis of interviews followed a form of content analysis employing Leximancer, a software package, which mines text automatically to identify key themes (Penn-Edwards, 2010).

## **Results**

A brief profile of the participants is provided in Table 1. All participants had expressed some intrinsic interest in teaching and many had undertaken in some teaching role in their former career. However, family pressure, responsibilities to their own children and frustrations with their initial career work demands were given as some of the reasons for changing their career to teaching. Of the 14 teachers who were interviewed at the beginning of the project only seven remained teaching. In reporting these findings the focus will be on two cases – Abi and Katie. Where appropriate we will draw on the experiences of other participants to illustrate issues. The major theme being explored was the nature of the relationships with school and colleagues and the influence of these relationships on their emerging sense of professional identity as a teacher.

Each of the 14 career-change participants were interviewed in depth and provided background information on their own schooling, previous careers and reasons for changing career to take up teaching. All expressed a degree of dissatisfaction with their previous careers but had a strong sense of competence and identity as scientists or equivalent. Most felt that the transition to teaching would enable them to fulfil a long held but latent desire to teach and that there would be less stress in their lives. This expectation was not fulfilled for most. Of the initial 14 career-change participants only seven remained teaching after three years – Alex, Abi, Elisabeth, Katie, Natalie, Pat and Tanya. Space does not allow a detailed revelation of each participant's experiences. Thus, the findings focus on the experiences of Abi and Katie whose experiences were shared by the other five who remained in the teaching profession.

A particular response from Abi highlighted some of her frustrations with her career in science research. She was clearly dedicated to research and had written a paper on education since starting teaching but the competition to get grants and the marginalisation of her research challenged her efficacy and identity as a scientist.

I had always had an interest in teaching. I was getting feedback on my science grants that were saying honestly - I hate saying it because it sounds arrogant, but I got really great feedback on grants – 'this is outstanding, this is ground breaking' but we were getting no money. That was a really hard thing to go through. But then having gone to teaching, I love teaching. I really do derive a great deal of personal satisfaction from it. I've had that conversation with personal people in my life, friends and things. Saying I'm far happier in myself than I was perhaps. (Abi 2011)

...but if I had got a grant in science no I would never have gone teaching. I would have probably continued to have an interest in education at the university level but I probably would not have become a high school teacher. (Abi 2011)

Indeed, Abi commented that because her research was “groundbreaking” but controversial, it was challenging to get it published. Although confident in her abilities she felt marginalised and excluded from the main stream science community both at the local institutional level and broader professional level.

Abi struggles with her identity as a teacher and/or researcher. She commented:

I can't imagine not teaching but I also have other things that I ... have a strong interest (in). I started this year doing some pre-service teacher training for the college in some of those primary science workshops. That was great. I have those academic interests. So I guess the hardest thing for me is it's a natural trait that I actually have, which is where the Myer-Briggs stuff come in, 'cause we laughed. I'm the INTP so I want to build theory, that's just what I do. I think the hardest thing is just trying to find a way to sustain all of that. (Abi 2011)

Abi's introduction to teaching was stressful. She was initially appointed to a school approximately an hour from where she lived and one that had a problematic reputation servicing a low socioeconomic and transient population. In the jurisdiction where this study was conducted the educational authority operates on a state wide basis. Teachers who accept positions in remote areas get preferential treatment in future placements and hence younger beginning teachers without family ties do “country service” for several years before attempting to return to more populated and appealing coastal or metropolitan regions. Abi accepted her first placement in the public system at Beach State High School (pseudonym) and explained her rationale:

I took B High in the first place because my understanding was that I was potentially unlikely to get a job for lots of reasons and the only job I might get might be quite rural. So when B High came up and it was the only thing that I had been offered I accepted it because I thought well at least with Beach High I can still see my husband. It turned out to be very difficult. (Abi 2009)

The difficulties emerged in fulfilling her perceptions of what teaching was all about. Although she claimed to share common socio-economic background with the students at this school she felt that the school environment was stressful and non-supporting. Her negative perception of the school began with negativity projected from the office staff in her preliminary visit to the school before the start of the teaching semester. Abi's initial prediction of the school was confirmed by negative actions of the Science Department Head who did not have a planned program but would not let Abi develop one despite her academic credentials in the area. She was disturbed by the lack of academic professionalism among teachers and the focus of the principal on student discipline.

Abi was able to move at the end of the first semester to a metropolitan high school in a more affluent and professional suburb. In reflecting on her experience at Beach High School in response to a question about whether she ever felt like giving up she stated:

When I came back from Beach High School, I thought yes because it (teaching) felt pointless. It felt like punishment for failing at science. My penance for the rest of my life is going to have to do a thankless job for incredibly rude kids and getting them to actually take a handout. (Abi 2009)

Her next experience at Leiland High School was in stark contrast. This school was in a high socio economic area with students mostly from professional and business families with a high press for education. The Head of Department, in acknowledgment of Abi's qualifications, created a position for her teaching chemistry. However, Abi soon realised that the department was dysfunctional. Younger teachers appeared to have little interest in teaching science and conversations in staff rooms focussed on sport and recreations while older teachers were suspicious of new approaches being introduced by the relatively inexperienced head of department. Abi felt marginalised and unable to build relationships within the staff room and attributed the problems to the inexperience of the Departmental Head "She didn't have the depth and breadth of experience to actually manage people."



Table 1: *Profile of career-change participants*

Pseudonym	Age	Profile		Major teaching responsibilities	Experience
Abi	37	Masters in Literacy; PhD in Science, taught in university courses, assigned to three schools in first year	Frustration with research	Science	Continuing
Alex	30	Degree in forestry, multiple careers, assigned to a remote country high school to teach agricultural science	Job security	Agricultural Science	Continuing
Barry	50	Construction and consulting engineer, assigned on contract to a suburban high school	Seeking less stress	Physics	Left school teaching
Elisabeth	30	Farmer with agricultural science qualification assigned to a provincial high school close to farm	Job Security	Science and Mathematics	Continuing
Jackie	35	Bachelors in Medical Science 10 years in pathology lab, single mother	Family demands	Science and Mathematics	Continuing interstate
Jenny		Science degree and had worked in plant nursery for three years. Assigned to a suburban high school to teach science and a language.	Family pressure	Science Mathematics and Language	Left teaching*
Kath	25	Health Science graduate, worked in fitness centres. Assigned to a regional High School	Interest in teaching	Science	Left teaching*
Katie	35	Degree in science with aeronautics experience. Single mother employed at a private prestigious girls school.	Family demands	Science	Continuing
Natalie	38	Engineering background employed for 10-15 years. Young family assigned on contract to a prestigious government high school.	Family demands	Mathematics	On contract
Pat	32	Applied Science and Human Movement Studies background; worked in technology and outdoor centres.	Job security	Middle years (elementary) Grade 4, 5.	Continuing
Sally	45	Science degree and 15 years in running a business. Employed part-time at Catholic Girls High School	Job security	Science	Left teaching
Roy	38	PhD in biological science working part time in an agricultural research station	Frustration with research	Science	Left teaching
Sandra	26	Recent PhD graduate with experience in nutrition science assigned to a Catholic High School in a lower SES suburban district	Job security	Science	Left teaching
Tanya	40	Animal scientist with long experience in working with large animals. Appointed to a provincial city high school	Family demands	Science	Continuing

\*Moved overseas and possibly teaching

Finally Abi was able to accept a position in a third school at the beginning of the final quarter (term) of her first year of teaching. Bushland Park High School was a smaller school, closer to her home but with a strong academic profile. Among the courses she had to teach was an extension class for gifted or more able students. Her initial comparisons highlighted the community climate and level of support.

[the previous schools were] nowhere near as functional as the hands on day to day support that you get by being in that small professional, quite well-knit community that I find at Bushland Park High School. (Abi 2009)

However, by the end of the following year there were tensions emerging. Abi became more critical of some of her peers who she saw as being rewarded for performance but not really caring about students' learning. Abi's passion continued to be displayed and she remained a very committed person with good practices despite workloads brought on by the introduction of new curricula and the need to undertake mandatory professional development to maintain registration as a teacher.

There comes a point where the PD [professional development] that we're all being sent off to as punishment for the 80 per cent of teachers because we can't be trusted to use our time productively and we have to keep a log of our 30 hours of PD. Whereas the reality of good teachers is they're doing it anyway and they're doing more on top of that. (Abi 2010)

Nevertheless Abi valued the relationships with some of her immediate colleagues:

As a professional colleague, Paul and Kim are amazing. I think we give each other a lot in terms of our teaching. If I want help and advice, then Paul and Kim are my first ports of call. His [Paul's] comment in relation to me is that I'm just this massive nerd, which is true. Like it's always been true. (Abi 2010)

Abi's construction of her professional identity is unresolved. She envisages herself as teacher with a passion for teaching but not necessarily as a high school teacher. After three schools in the first year of teaching her only satisfaction emerged through the opportunity to teach more able students in a small socially homogeneous context. Her conversations throughout the interviews over three years focussed very much on teachers and their performance and in some respects she was often critical of her colleagues. When students were discussed it was generally in terms of how teachers worked with students or managed their selection of subjects.

In her final interview Abi revealed that she had been unsuccessful in applying for university positions in teacher education. Her interest and capabilities focus on self-concept and the teaching and learning of science but the constraints and experiences in schools has dampened her commitment to secondary education, if it ever existed. Abi's discontent with her career in science was repeated with her career in teaching and she seems poised to continue to seek further career change.

Katie presented another perspective on identity transitioning. Early in her first year of teaching she was frustrated and overwhelmed by the expectations of teaching.

So, my teacher identity at the moment—people’s say, you know, ‘Do you like teaching?’ And I find it very hard to do the basics, even though I know it’s what people expect, ‘Oh yes, teaching’s my passion.’ Whereas really at the moment it’s really hard work and I’m a single mum and juggling home life and teaching is hard. It’s big. (Katie, 2009)

She subsequently admitted:

In that first year I had lots of points where I thought can I sustain this? There was so much to do and my family found - my youngest was really quite young. (Katie, 2011)

However, Katie was strongly supported by her head of department and built strong collegial relationships with those in her staff room. Summing up the relationships at the end of the second year of teaching she said:

Everybody knows everybody’s story, because it’s a very friendly - we’ve got our own staff room, so we come in, in the morning and we do the how are your kids going? How was your morning? What’s up? Everybody knows each other reasonably well

Katie’s conversations during debriefing interviews always focussed on student learning and the problems or interests that different student had. She rarely spoke about her previous career as a pilot instructor and when asked whether she would be interested in teaching in an aviation program at a neighbouring school she intimated that she was too content at the current school to make a change.

For most of the participants, school support was minimal. Only one (Katie) of the 14 participants was satisfied with their formal induction program. For most of these teachers, the induction programs did not address issues around teaching and learning but had “more to do with the procedures and policies” (Alex) of the school. Most felt that, despite their experiences in their professional careers and their capacity to manage the micropolitics of organisations, their backgrounds were rarely acknowledged. Some felt that they were “treated like students” (Abi).

Immediate supervisor support was spasmodic except for Katie who was provided with a comprehensive induction program that included her Head of Department modelling practices in her class. In contrast, Abi (PhD graduate) was so frustrated with relationships with colleagues in her school that she sought a transfer at the end of the first term to a smaller school where her knowledge and experience were valued. This satisfaction was short-lived however. As a mature aged (mid-30s) beginning teacher with a PhD, Katie felt resented by older teachers because of her enthusiasm and by younger teachers because of her knowledge. Roy (also a PhD) experienced a similar reaction where he was told that he was “overqualified” and sensed in his environment “the deliberate or inadvertent rejection of teachers with industry experience”. He subsequently resigned after one month of teaching.

Kath’s reflections highlighted a common feature whereby the beginning teachers had to work proactively to develop supportive relationships. Kath initially felt isolated but eventually set about achieving acceptance:

I did get that support. It wasn’t as though I was completely alone as how I felt at the beginning. I think building those collegial relationships really helped foster that support and from there, you know, if I have a student in my class who wasn’t co-operating I could

ask someone, what should I do here. I think that makes sense in any workplace that, you know, at the beginning, not everyone's feeling warm to you.

Katie, Alice and Jenny all acknowledged the exceptional support of colleagues from the beginning although Jenny's came from colleagues in another Department where she taught one subject outside of her specialisation.

A sense of frustration with the behaviour of some colleagues thwarted attempts by Jackie, Alice, Kevin and Tracey who were keen to implement contemporary strategies learnt in preservice courses. They sensed "a lot of teachers on staff have even been here for 20 odd years still don't know how to write a piece of assessment with criteria" (Jackie) or "that type of teaching is not modelled in the school at the moment" (Alice) and hence there was little support for innovation. In one instance, Alex, who was teaching a topic well outside his expertise, could not find support in the school and was forced on his own volition to network with a teacher in another school.

Teachers such as Sally and Barry, both of whom were confident in their own knowledge of science struggled with developing a sense of identity as a teacher for similar reasons. Both were located in difficult schools where student behaviour was challenging. Sally struggled and felt that the "rhythm of the school" was alienating and left at the end of her first year. Barry, a mature ex-engineer who was accustomed to working in difficult industrial worksites was a loner who felt he was under constant surveillance. Although successful with his physics students, he eventually left teaching at the end of his first year citing "because everything you did you had someone looking over your shoulder. Every time you turned around, there was someone looking at you".

## **Discussion**

The aim of this study was to identify conditions that contributed to or hindered the development of a sense of professional identity as a science or mathematics teacher. Self-determination theory (SDT) (Deci & Ryan, 1991) provided a framework for understanding the experiences of these teachers and to identify some of these conditions. While most career-change teachers felt that they achieved a level of autonomy within their classroom, relationships and sense of competence provided interesting contrasts that contributed to a sense of satisfaction or dissatisfaction with consequences for developing a positive professional identity. SDT predicts that job satisfaction is achieved when there is recognition of a person's competence, when some degree of autonomy is provided and when supportive relationships are available. Similarly organisational research highlights similar social environmental features and further suggests that organisations are flexible in reconciling employees' work life and their life outside of work (Jacob, Bond, Galinsky, & Hill, 2008). Where strong relationships existed and support was provided or exemplary teaching was seen, participants were accepted into the culture of teaching and participants found an influential social climate. Under these circumstances in line with Hogg's (1993) notion of social identity or Stryker's (1968) concept of identity, these beginning teachers were able to transition through a change of identity from professional scientist to teacher. Interestingly, the subject matter they taught did not seem important as proposed by Beijgaard (1995) who argued that a strong influence on identity among secondary teachers was their subject area. The promotion of general teacher identity over the specificity of say physics

teacher may reflect their pre-existing identity as a physicist which was seen as less significant given their transition from a professional domain where physics might be demanded.

Of the 13 teachers who were still employed after six months, half had to proactively seek relationships with colleagues, in a few instances from those in departments outside mathematics or science. The general response from colleagues was that they were too busy to take on mentoring a new teacher. No structures or processes seem to exist to facilitate beginning teachers' engagement with the community in a professional way.

Relationships with students were also very important for all the participants. The more mature participants (>30 years of age) emphasised the need for mutual respect and the need to challenge students to achieve their best. They hoped to establish learning environments that enabled students to express ideas, ask questions and feel that they were in a safe and supportive environment. Some of the younger teachers highlighted relationships based on getting to know the students, and their backgrounds and issues. Relationships played a key role in an emerging sense of identity as a teacher. Individuals had developed a personal sense of identity as a teacher but few felt that they could identify with their colleagues or department as members of a community.

However, criticism of other teachers appears to be a theme that runs through the attitudes of beginning teachers. It is interesting to note that a high proportion of beginning teachers leave after 5 years appearing to be disgruntled with the "system". Those who enter teaching having experienced the micropolitics of organisations are likely to have the skills and experiences to manage organisational bureaucracy. Their tolerance for organisational mismanagement and lack of support could quite well be less. Those entering straight from school and university are less experienced and possibly more accepting of the systems in place. Relationships and feelings about school bureaucracy and its impact on their ability (or lack of) to do their jobs and with stands the pressures of working in education is an area worthy of further research.

Thus in summary, some common themes emerged in this study. Induction programs were mostly useless providing little guidance or outreach to encourage new teachers to be part of a community. However, in a number of the schools where participants were located it is doubtful that a community existed. Supervision and support occurs at many levels and administrative staff from principal to head of department need to play a coordinated role in accepting new teachers and especially recognising the qualifications and experiences of mature age beginning teachers who bring substantial new insights drawn on their real world experiences. Subject matter knowledge is important if not for direct teaching at least for enhancing the level of expertise of departments where often teachers have minimal background knowledge or are teaching out of their area.

### **Implications**

This study has focussed on one of three major themes (autonomy, competence, relationships) that contribute to the development of a professional identity among beginning teachers who entered the profession with strong subject matter knowledge. It is through positive and mutually beneficial relationships that a sense of competence and teaching self-efficacy emerge. Sound relationships and confidence also enable beginning teachers who have been exposed to more

contemporary reform oriented ideas about teaching and learning can explore the interface between theory and practice – praxis. Given the increasing interest in persuading highly qualified mid-career professionals to become teachers, this study has given us a better understanding of the dilemmas and tensions that they confront. As the theorists in identity formation argue, individuals need to reconcile a range of personal identities and professional identities. The conditions and support both in their private lives and professional workplaces play a key role in promoting one identity over another or supporting their identities to develop. Most of the participants wanted to be seen as teachers and tried to earn that identity but for most the task was overwhelmed by the challenges of survival without lifelines from colleagues.

## References

- Beijaard, D. (1995). Teachers' prior experiences and actual perceptions of professional identity. *Teachers and Teaching: Theory and Practice*, 1(2), 281-294. doi: 10.1080/1354060950010209
- Berry, B., Daughtrey, A., & Wieder, A. (2009). *Teaching effectiveness and the conditions that matter most in high-needs schools: A policy brief*. Center for Teaching Quality. Chapel Hill, NC. [ERIC Reproduction Service ED508532].
- Day, C., Kington, A., Stobart, G., & Sammons, P. (2006). The personal and professional selves of teachers: stable and unstable identities. *British Educational Research Journal*, 32(4), 601-616. doi: 10.1080/01411920600775316
- Deci, E. L., & Ryan, R.M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska symposium on motivation: Perspectives on motivation*: Vol. 38. pp. 237–288. Lincoln: University of Nebraska Press.
- Fantilli, R. D., & McDougall, D. E. (2009). A study of novice teachers: Challenges and supports in the first years. [Article]. *Teaching and Teacher Education*, 25(6), 814-825. doi: 10.1016/j.tate.2009.02.021
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine.
- Gordon, R., Kane, T. J., & Staiger, D. O. (2006). Identifying effective teachers using performance on the job (pp. 35). Washington, DC: The Brookings Institution.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Oxford: Routledge.
- Hogg, M. A. (1993). Group cohesiveness: A critical review and some new directions. *European Review of Social Psychology*, 4, 85-111.
- Hogg, M. A., Terry, D. J., & White, K. M. (1995). A tale of two theories: A critical comparison of identity theory with social identity theory. *Social Psychology Quarterly*, 58(4), 255-269.
- Hornsey, M. J. (2008). Social identity theory and self-categorization theory: A historical review. *Social and Personality Psychology Compass*, 2(1), 204-222. doi: 10.1111/j.1751-9004.2007.00066.x
- Ingersoll, R. (2001). Teacher turnover and teachers shortages: An organizational analysis. *American Education Research Journal*, 38(3), 499-453. Doi: 10.3102/00028312038003499
- Jacob, J. I., Bond, J. T., Galinsky, E., & Hill, E. J. (2008). Six critical ingredients in creating an effective workplace. *The Psychologist-Manager Journal*, 11(1), 141 - 161.
- Lawrence, C., & Green, K. (2005). Perceiving classroom aggression: The influence of setting, intervention style and group perceptions. *British Journal of Educational Psychology*, 75(4), 587-602. doi: 10.1348/000709905x25058

- Leech, N. L., & Onwuegbuzie, A. J. (2007). An array of qualitative data analysis tools: A call for data analysis triangulation. *School Psychology Quarterly*, 22(4), 557-584. doi: 10.1037/1045-3830.22.4.557
- Leximancer. (2007). *Leximancer: From words to meaning*. Retrieved May 30, 2010, from <http://www.leximancer.com>
- Luft, J. A., & Roehrig, G. H. (2007). Capturing science teachers' epistemological beliefs: The development of the teacher beliefs interview. *Electronic Journal of Science Education*, 11(2), 38-63.
- Maciejewski, J. (2007). Supporting new teachers: are induction programs worth the cost? *District Administration*, 43(9), 48-52.
- Patterson, N. C., Roehrig, G. H., & Luft, J. A. (2003). Running the treadmill: Explorations of beginning high school science teacher turnover in Arizona. *The High School Journal*, 86(4), 14-22.
- Penn-Edwards, S. (2010). Computer aided phenomenography: The role of Leximancer computer software in phenomenographic investigation. *The Qualitative Report*, 15(2), 252-267.
- Rockoff, J. E. (2004). The impact of individual teachers on student achievement: Evidence from panel data. *The American Economic Review*, 94(2), 247-252
- Schempp, P. G., Sparkes, A. C., & Teplin, T. J. (1998). Identity and induction: Establishing the self in the first years of teaching. In R. P. Lipka & T. M. Brinthaupt (Eds.), *The role of self in teacher development* (pp. 142-164). Albany, NY: State University of New York Press.
- Stryker, S. (1968). Identity salience and role performance: The importance of symbolic interaction theory for family research. *Journal of Marriage and the Family*, 30(4), 558-64 doi:10.2307/349494
- Veenman, S. (1984). Perceived problems of beginning teachers. *Review of Educational Research*, 54(2), 143-178.