# Recognising and Identifying the Participant and Researcher in Mathematics Education Research: A Sociopolitical Act

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**Abstract** Researcher positioning is an important consideration in acknowledgement of the power inherent in the act of research. As such, the concept of identity may be deployed to consider such a political act. In this chapter, I examine the use of identity in mathematics education research to both identify the participant and also to consider the identity work of the researcher. I use Butler's (Theatre J 40:519–531, 1988) definition of identity as performative to understand the ways in which the subject is produced in discourse and incorporate the notion of identity recognition to consider the ways in which discourses are drawn from in performing and recognizing. I engage in a reflection of my own identity work as a researcher and suggest we should consider the researcher identity as being multiple, temporal, fearful and desiring, and also complicit in the (re)production and disruption of broader social and political discourses in mathematics education.

**Keywords** Mathematics identity · Performative identity · Researcher positioning Discourse

## 1 Introduction

I take as a starting position that the research act is powerful (Gutiérrez 2013; Pais and Valero 2012; Planas and Valero 2016) and therefore the role of the researcher in this act of power is due considerable attention. Over the past few years there have been a number of arguments emerging from within mathematics education about the importance of positioning the researcher within the research project. Gutiérrez, for example, states:

> To engage with the political, the [mathematics education] field needs to value and encourage researchers to position themselves within their work (e.g., articulating those

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> aspects of their identities and ideologies that inform their choice of research projects, the design of such projects, the kinds of questions asked, and findings produced). (Gutiérrez 2013, p. 62)

Gutiérrez continues this line of argument in a dialogue, published in the same journal issue, in which a number of high-profile writers and editors discuss this very topic (D'Ambrosio et al. 2013). These authors in mathematics education suggested that *all* research is non-neutral, is political and is about issues of identity and power —and for this reason a visible researcher positioning is important. Similarly Valero argued the importance of considering, amongst other factors, "who we are and how we choose to engage in academic inquiry" (Valero 2004, p. 6). However, Walshaw cautions that in the doing of this type of self-reflection of researcher position we must take care not to "romanticise the self" (Walshaw 2010). Writing ourselves into the research does not by itself counter the effects of "power, privilege and perspective in the research encounter" (Walshaw 2010, p. 588). The use of the first person narrative, statements regarding data as co-constructed, and discussion about the asymmetricality of power in the research interview all indicate an attention to researcher power, yet these considerations sometimes appear to imagine researcher identity as being static and singular. In contrast, if we consider the identity work inherent in the research process, we may be able to develop a much more sophisticated consideration regarding the power of the research act.

In this chapter I argue the concept of identity provides a very useful tool in which we may consider the political act of research. This tool may be deployed in two ways: firstly, the recognition of the research participants may be considered as an act of *identification*, and secondly, the researcher engages in her own identity performance in the research process and through positioning within her research. I aim to demonstrate this through a self-reflection on some of my own recent work. I first discuss the concept of identity within mathematics education and consider its usefulness in exploring some possible implications of the political act of research. I present a description of a research participant, and then follow with a critical examination of the way in which I identified her, drawing on my doctoral research and reflections thereafter (Darragh 2014). I conclude with a consideration of my own identity performance as researcher in this process and provide some implications for theory and research practice in mathematics education.

## *1.1 Identity and Recognition*

Identity is a concept that has proven worthwhile to those researching within mathematics education and its use has grown rapidly within the domain over the last two decades (Darragh 2016). The lived experiences and relationships that students and teachers form with mathematics learning and teaching are seen as very relevant to the mathematics education enterprise, particularly in research concerned with social and political issues. Just a few examples are Solomon and colleague's

work on gender (Braathe and Solomon 2015a; Solomon et al. 2011, 2015) and Mendick's (2005) discussion of the masculinity of mathematics. Martin (2000), Stinson (2013) and Nasir (2002) all provide examples of research which consider the intersection of race and mathematics learner identity. Lerman (2009) has used identity to examine social class, Walshaw (2013) takes a psychoanalytic approach and Chronaki's (2011a, b) work is concerned with a range of social and political aspects, using and furthering identity as a lens for research. Recently identity has been directly linked to issues of power (Gutiérrez 2013) within the sociopolitical perspective on mathematics education.

Along with these authors I prefer to see identity within the sociological, initiated in the work of Mead (1913), and I draw on Judith Butler, to define identity as performative. Butler refers to gender identity, however the definition can also apply well to mathematics identity—as something first performed and secondly embodied. This means identity is constituted by a "stylized repetition of acts" (Butler 1988, p. 519). It is similar to a theatrical performance, in that the identity does not exist prior to the act; rather it is constituted in the moment. A true core self does not exist; the self is continually being made in and through performances of the self. Such performances may include style and content of speech, labels applied to the self (such as 'gifted', 'dyslexic' or 'creative') or they may be physical acts. Within the educational setting we may even see performances of the learner self through the way in which a student wears their uniform or how they sit at their desk (Youdell 2006a). In mathematics education we may witness performances such as someone saying: 'I don't have a math brain' or someone choosing to study mathematics at an advanced level.

This notion of identity appears to allow significant agency on the part of the individual, however, the performative act is actually derivative and cites an authoritative discourse. Butler draws on speech act theory to suggest "a performative is that discursive practice that enacts or produces that which it names" (Butler 1993, p. xxi). For example the term 'student' is a designation that appears to describe a pre-existing subject, yet it is the act of designation that constitutes the student (Youdell 2006a). This implies that what it means to be a mathematics student is not predefined, rather it is produced through the naming and via wider discourses (and therefore it may be produced differently). With this definition Butler adopts Foucault's notions of discourse as productive and of subjectivation together with Althusser's notion of subjection and the hailing of the individual (Youdell 2006b). In other words, identity is performed within wider discourses and the identification by someone (or by some*thing*), with authority, constitutes the individual as a subject. Butler's conception of identity has been taken up by some in mathematics education (Chronaki 2011a; Damarin and Erchick 2010; de Freitas 2008; Mendick 2017; Stinson 2008), and should also resonate with those who use Foucauldian notions of subjectivity through which to understand identity (e.g. Hossain et al. 2013; Llewellyn 2008, 2009; Walkerdine 1990, 1998; Walshaw 2001) and more broadly with those who find value in Foucauldian theories of discourse.

To unpack some of these ideas I find it useful to return to Butler's (1988) theatrical metaphor, which allows us a simpler language through which to consider aspects of the wider social and political context and discursive production of identity. I consider the roles of the *stage,* the *theatre,* available *scripts* and the role of the *audience* through which to imagine identity performances and the notions of subjection/subjectivation. The stage may be considered the local context, the theatre the wider political context, scripts are available discourses defining the limits of performance. Finally, the audience provides the crucial aspect of the social context, the necessity for the performance to 'make sense' to others (Youdell 2006a) and also includes the authoritative other or institution which may 'hail' (in Althusser's terms) the subject. In line with this metaphor, I see it as necessary to understand identity performance as simultaneously both the performance and the recognition of the performance by the audience. This means that identity does not exist within the person; rather it exists and is negotiated in the temporal and social space between the performer and another. This view of identity is useful in that it steers us away from a conception of identity as residing within an individual.

A significant limitation in the use of the concept of identity within mathematics education has been a tendency to focus on the individual (Darragh 2016). This may be due in part to the neo-liberal context in which much of this research is produced; neoliberal ideology tends to frame our thinking as primarily concerned with individual success, such as success in education (Apple 2000; Ball 2013; Harvey 2005). Mathematics education is highly implicated in this neoliberal project (Valero 2016). Research which focuses on the individual or group being identified without consideration of *who* recognizes and *how* they recognize identity performances does not provide us with the necessary tools to challenge inequity in education and use identity as a tool to radically rethink education (Youdell 2006a).

Other limitations of identity research have been wagered by some researchers within mathematics education, arguing that a focus on identity will not help to address the pressing issue of income inequality (Jurdak et al. 2016, pp. 23–24). Furthermore, identity research sometimes assumes binary between structure and agency, which "tends to locate the power to change at the level of the individual human subject, and denies this power to larger structured collectives, say institutions" (*ibid.*, p. 15). However, a poststructuralist conception of identity, such as in the work of Butler and Foucault demonstrates how selves are both subjected *by* and *of* discourses, meaning they are both constrained and *agentic* within these discourses (Hossain et al. 2013). Post-structural ideas such as these "come out of a recognition that existing structural understandings of the world, whether these focus on economic, social, ideological, or linguistic concerns, do not offer all the tools we need" (Youdell 2006a, p. 37). The identity project is to interrupt material inequality through an engagement with language and through the formation of disruptive discourses (Youdell 2006b).

Furthermore, power is not only concerned with large scale domination and oppression. Power can exert itself in much more localized ways and impact on a person in such a way that it appears to become absorbed into the very self:

> Power acts on the subject in at least two ways: first, as what makes the subject possible, the condition of its possibility and its formative occasion, and second, as what is taken up and reiterated in the subject's 'own' acting. (Butler 1997, p. 14)

This absorption of discourse by the individual highlights the ways in which the recognition of identity, or the process of identification, enacts power. With this we return to discussion of the key role of the audience in the recognition.

There are a variety of places within mathematics education in which we may see the power of identity recognition. For example, teachers recognize their students as being particular types of learners and initially this recognition may be based on appearance (skin color, clothing, mannerisms, accent or language), or perhaps based on mathematics results in a school placement test. The effects of such recognition are well documented in the research on teacher expectations (Rubie-Davies 2006; Straehler-Pohl et al. 2014; Turner and Rubie-Davies 2015). Schools recognize the students through such assessments and wield power with streaming and labeling practices, identifying and placing students in differing ability groups (see for e.g., Boaler et al. 2000; William et al. 2004; Zevenbergen 2003). Teachers are recognized through their students' test results, and identified correspondingly as effective teachers or otherwise (Robertson 2012; Zeichner 2010). They may be further recognized through playground and parental gossip. The media recognizes the mathematically able as nerds or geniuses (Mendick et al. 2008). The Organization for Economic Cooperation and Development (OECD) recognize entire countries through highly publicized, and under-problematized, testing regimes (Kanes et al. 2014) which all involve mathematics. Finally, our own self recognition is also a powerful act, in which we play audience to our own performances.

As researchers, we are another type of audience and we too wield considerable power during the investigative process. When we do research we identify our research subjects; perhaps as particular types of mathematics learners or as a 'good' teacher, or in terms of another identity group such as race, class, or gender. Irrespective of whether our research is in the area of identity, or even whether it involves actual participants, we all identify mathematics students and teachers in particular ways according to our ideological frames, our background, our contexts, our experiences, and our purposes for research. As researchers it is *our* social and political context that impacts on the way in which we recognize our research subjects (see also Llewellyn 2016; Valero 2004).

## 2 Recognising the Participant

For the purpose of this chapter I draw on my doctoral research (Darragh 2014) into the identity performances of learners of mathematics as they made the transition from primary education to secondary schooling. Twenty-two students were involved in the study; I met them when they were 12–13 years old and followed

their experiences in school mathematics over a period of almost two years. I observed these students in mathematics classes and interviewed each of them on four separate occasions as well as interviewing their teachers and some of their parents. The 'data' I share here is an excerpt based on a reflection about a participant that I made around a year after the completion of my doctorate:

> Emily is a Samoan girl, extremely high achieving in all subjects: English, physical education, science, and mathematics included. She was delightful to interview, possibly in part because her elder sister was doing graduate work in education and she knew the research game and how to perform it. She gave long and thoughtful responses to me in interview. She regaled me with anecdotes of her engagement in mathematics games and puzzles and shared with me a passion for the subject. I found myself especially interested in her future story because the 'data' often says that both girls and Pasifika[1] students, such as those from Samoa, are under-achievers in mathematics. She was obviously an exception. I wondered if as a 'typically marginalized' member of the mathematics learner community she would eventually experience schooling in a more negative way. At one point I even had to ask myself if I was in part hoping for this so that I could write about it in my thesis! On the other hand, I was also hoping for the opposite, that her experiences would provide a counterpoint to typical stereotypes. However, it was a revelation when I realized that actually Emily never, not once in four interviews over a period of more than 18 months, discussed being Samoan or being girl as in any way significant for her experiences of learning mathematics. (Excerpt from research journal, August 2015)

In particular, I marked Emily as 'able', as 'girl' and as 'Samoan'. However, these were not identity markers that she applied to herself during our conversations about mathematics. In order to gain understanding into Emily's identity performances with respect to mathematics learning, I spoke with her a number of times about relevant experiences in the past as well as her plans for the future. Ultimately it was I, the researcher, who analyzed and summarized these conversations and who applied identity labels. I had no relationship with Emily prior to her being a part of my research project, however she was recognizable to me, in the sense that I had taught students of her age for a number of years. I taught in a community demographically similar to hers, and in Emily I recognized some of my past students. The identifications I made of Emily are not innocent nor neutral descriptions simply adding background to the research text; they are identifications produced in wider discourses, contextually based, and they have effect. In order to deconstruct my labeling of Emily I divide the description into two parts. Firstly 'Samoan girl' and secondly 'mathematically able'.

## *2.1 A Samoan Girl*

One way in which I recognized and identified Emily was as a Samoan girl, and when I chose to categorise her in this way I drew upon wider discourses of gender and of ethnicity. In other words, I chose to describe Emily in terms of these

[1] *Pasifika* refers to people from the Pacific Islands, such as Samoa.

particular identity markers. The questions at stake here are *why* I chose such categorizations? Why were these discourses accessible to me in my own particular context?

In New Zealand/*Aotearoa* data is collected and statistics are presented predominantly in relation to gender or ethnicity.[2] Almost any demographical statistic (such as levels of employment or educational attainment) is immediately and always separated into male and female categories, and also classified by ethnicity. Ethnicity is categorised as Māori, Peoples from the Pacific Islands (or Pasifika), Asian, and European (or NZ-European/*Pākehā*).[3] Such educational data tend to demonstrate the underachievement of Māori and Pasifika students and show the Asian and Pākehā students to be achieving at higher levels than the overall average. In most educational statistics girls outperform the boys, but this trend is reversed in mathematics. NZ also widely publicizes results obtained in international tests such as PISA. The New Zealand summaries look again at gender and ethnicity, showing ever widening gender gaps in mathematics (Vale et al. 2016) and a maintained underachievement for those marginalized ethnic groups. In these published summaries, socio-economic status (SES) also features, for example illustrating a rapidly widening gap between wealthy and poor students (Ell, cited in Davison 2013).

My own experiences as a teacher and with knowledge of the differing experiences of different Pasifika peoples, led me to move beyond a general classification of 'Pasifika' and attend instead to 'Samoan'. But I should note that Emily gave a very subtle performance of this identity; it was not overtly stated, rather given through talk about her wider family (including those still living in Samoa) and her involvement with the church. Emily's performance of girl, by contrast was necessarily less subtle. Her wearing of a school uniform may have hidden her SES, yet it identified her gender. Indeed, schools may argue the advantages of uniform in masking SES, however it simultaneously forces students to enact one of a binary gender identity. In non-uniform schools, students may be free to perform other gender identities, but issues of poverty could be made more apparent. However, on Emily's part, her performances of Samoan and girl were not deliberate or conscious in the interview context but they were nevertheless easily recognizable by me when I first met her. My reasons for identifying and classifying her in these ways are due in part to the typical discourses of New Zealand educational academia and government.

Given that my recognition of Emily as a Samoan girl was constructed within wider discourses in the New Zealand education system, how might I have recognized and identified her if I had met her in a different country context? Currently I am living and researching in Chile and it is very apparent that the academic and social context of this country would have led to a different recognition of Emily had

[2]See for example http://www.stats.govt.nz/browse_for_stats/snapshots-of-nz/nz-in-profile-2015.aspx, http://www.education.govt.nz/assets/Documents/Ministry/Publications/MinEdNZEducationProfiles.pdf.

[3]Sometimes an "other" category is included, representing approximately 1% of the population.

I studied her in this context instead. Firstly, I would have defined her in terms of her social class. Social class in Chile may be seen in a surname, an address and, perhaps most immediately, in the school attended. Upper, middle and lower social class correspond with elite and private schools, subsidized schools, or charity and public schools (Valenzuela et al. 2014). Secondly I may have considered Emily's 'vulnerability' status as another form of identification common within Chilean education. Vulnerable is a label given to at-risk students based on a complex calculation including parents' overall income, educational levels, and health-risks (Ávalos-Salamé and Thomas Ponce 2007). Whilst social class may be considered a contextual factor, outside of the individual, the term *vulnerable* is very much of the body. In this way vulnerable is an identity which may be embodied similarly to gender and ethnicity (and mathematics ability).

In Chile class is tightly interwoven with race, as it is in many (if not all) other countries. The children who attend private schools are more likely to identify (and be recognized) as White than those in public schools; and public schools have much larger numbers of immigrants, usually from other parts of South America, or recently from Haiti. But in Chile race and ethnicity receive less attention. In other words the meta-narratives of social issues such as inequality in Chile use the language of social class, whilst it could alternatively, or additionally, use another discourse, or lens, such as race or ethnicity.[4] The narrative of inequality in New Zealand on the other hand is based first on gender and ethnicity whilst other identities are positioned in the background.

The dominant discourses in New Zealand and Chile have some aspects in common. Within both contexts recognition is tied to wider academic discourses; performing as an academic in any educational context requires the drawing from the specific narratives of those contexts. Secondly it is notable that these discourses are statistical; gender and ethnicity or social class and vulnerability are aspects that are counted and as such the identification is more powerful, with the power of numbers to enforce it (see Chassapis 2017 for another example of the power of the number discourse).

Giving a general description of research participants is a common practice in academia. It is difficult to find published work within education which does not identify gender, for example, be it in large quantitative studies or smaller case study reports. Llewellyn's (2008) article 'Maths with Sam and Alex' is exceptional in Llewellyn's refusal to disclose the gender of the two participants about whom she reports. The discomfort felt by the reader in not knowing demonstrates the strength of this discursive practice of classification by gender. Reporting on ethnicity or race can be more contentious. At times this type of classification is not included, and Martin (2009), for example, would argue this makes race a near invisible topic in mathematics education research. At other times race or ethnicity are mentioned

[4]Note, this is not to say there is no research on ethnicity issues in Chile, there *is* (see for e.g., Webb and Radcliffe 2013), rather that issues of class and socio-economic status tend to dominate the research agenda.

together with discourses of failure. Gutiérrez and Dixon-Román (2011) argue against a focus on achievement gaps between white middle-class students and African-American, Latin@, American-Indian working class students, describing how this focus contributes to deficit frameworks for these marginalized groups. Such focus on achievement gaps are, in Martin's (2009) words an "impoverished approach to race, racism, and racialized inequality" (p. 297). Alternatively research could broadcast success instead, as demonstrated in Stinson's work (see for e.g., Stinson 2013). It is clear the seemingly innocent description of the participant is problematic.

By recognizing Emily as Samoan and as girl I am adding weight to the importance of these educational discourses about gender and ethnicity. My recognition of Emily's success despite her membership in typically marginalized groups could be argued as breaking down stereotypical discourses and demonstrating the possibility of enacting identities of able *and* girl, of successful *and* Samoan. However, I suspect that the educational and statistical discourses, of girl and Pasifika, which hail Emily into being a particular type of mathematics learner only allows her to be positioned as a learner in one of two ways; *typical* or *contrasting,* and both of these positions may in fact reinforce the dominant discourse.

By denoting Emily as Samoan and as female I made assumptions of the potential for Emily to experience a negative transition to secondary school without finding out from her (or from other key people in her life) her own interpretations of her racialised and gendered experiences of mathematics education. I never asked her outright what she thought about being Samoan (/Pasifika) or girl in the learning of mathematics. Perhaps I did not want to ask a leading question, perhaps I did not feel I had the right to ask it. Yet whilst these questions did not enter the interview script, they entered the analysis in a subtler (more dangerous?) way.

> [J]ust because a student is participating in ways that we ascribe to 'successful students' does not necessarily mean that student buys into deficit notions of kids who do not participate in the same manner. Nor do students necessarily define themselves based solely on how well their behaviors or grades correlate with discourses on the achievement gap. (Gutiérrez 2013, p. 52)

It is clear to me that Emily did not define herself based on discourses of low achievement for girls or Pasifika students. Rejection of similar narratives have been documented elsewhere, for example 'Hedvig's' resistance of gender narratives during interviews (Braathe and Solomon 2015b). Yet I was thinking about the other members of these groups during the process of analysis nevertheless.

Of course Emily was recognizing and identifying me as well during our interviews. She is likely to have noted me as *Palagi*,[5] female, and possibly also saw me as a teacher. How she saw me would have affected the issues she chose to discuss. As we were both good female mathematics learners perhaps there was not a lot to say about the underachievement of girls. But on the other hand it is our ethnic

[5]Palagi = Samoan term to refer to European person.

differences that may have prevented conversation about this identification and her experiences related to being Samoan. I suspect that my identification drew not from sameness or difference between us; rather I identified those aspects different to the 'normal' mathematics student. That is, to be girl and to be Samoan are two ways of being 'other'. In fact, my classification of Emily as Samoan girl was possibly particularly *pleasing* to me in my role of researcher because of the opposition between this label and that of *mathematically able*. I now turn to this second identification.

## 2.2 An Able Mathematics Learner

My recruitment of Emily into my research project already produces her as a particular type of subject, specifically that of the mathematics learner. Firstly, this prioritises an identity of mathematics learner above any others that may be applied to or performed by the research participant. The mathematics learner is a subject construed by the discourses of mathematics education research. She is reduced down from a fully social child to a subject of analysis within terms often only of mathematics learning (Llewellyn 2016; Valero 2004). Such a view does not give due acknowledgement to the possibility (likelihood?) that mathematics may only take a very background role in Emily's life (see also Gutiérrez 2013).

Secondly, implicit in the production of the mathematics learning subject are all the varied discourses which circulate within the wider mathematics education community. These include the superiority of mathematics and necessity of mathematics within the neoliberal society, and discourses of dis/ability as being paramount to the concerns of mathematics education. Below I will unpack some of these discourses and note also the complicity of both Emily and myself in these performances.

Mathematics has long been a high status subject (see also Pais and Valero 2012). Current neoliberal discourses have served to strengthen this view of mathematics as essential for the development of a well-functioning society (economy) and as a highly desirable attribute. As researchers we enjoy the superiority of mathematics in current society. By positioning our research within this domain we may enjoy various privileges, such as a greater ability to gain funding for example. We have a number of mathematics education specific journals in which to send our articles. When we do so, "where is the mathematics?" is a question we may feel compelled to address at the forefront (for discussion see: Martin et al. 2010). Mathematics is privileged in curricula world-wide, and with this privilege comes a subtler, hidden responsibility; we must continue to promote mathematics as important, as an essential learning area for students, and therefore also an essential research domain. There are those among us who question and critique this superior position held by mathematics (D'Ambrosio et al. 2013; Llewellyn 2016; Lundin 2012; Martin et al. 2010; Pais and Valero 2012, 2014; Swanson and Black 2017). However, these researchers too, publish in mathematics education journals.

Emily was complicit in this production of herself as a mathematics learner, she knew I wanted to research mathematics learners and she performed for me her mathematics learner identity. By talking about the mathematics games and puzzles she did with her brothers in her spare time she performed for me the good student. She was 'good' in the sense of compliance (Walkerdine 1998) and good in the sense of high ability. In this ability performance she drew from another dominant discourse within mathematics education, that of dis/ability.

It was not difficult to identity Emily as an able mathematics student; despite my not asking directly about achievement in this subject (I pretended to myself as a researcher that I was not interested in this aspect). By the end of the first interview with each student, generally even within five minutes, I 'knew' which students would be considered high ability or low. This quick, judgmental recognition may appear arrogant and yet all my assumptions were confirmed later by their teachers in both primary and secondary schools and matched with later placements in streamed classes at high school and even in their end of year examination results a year later. It is not that I was perceptive, nor even correct per se, rather that I am in and of the system. My teaching experience makes me the same kind of audience member that typically wields this power in schools.

This concern with mathematical ability is demonstrative of the preoccupation western mathematics holds with mathematics ability (Boylan and Povey 2014), and the corollary views that this ability is more or less fixed. This view is highly implicated in educational practices such as ability grouping and the subsequent delivery of differing programmes of mathematics dependent on whether the said ability is high or low (Boaler et al. 2000). Such practices doubtless impact on identity performances of students (Boaler et al. 2000), and become embodied in similar ways to other identities (Jurdak et al. 2016). However, it is the preoccupation of ability discourse that frames my interest here. The dominance of this discourse leads us to construct the 'low ability' student as pathological (Walkerdine 1994). This resonates with the 'pursuit of progress' preoccupation argued by Llewellyn (2016) as evident in mathematics education research, policy, and the talk of pre-service teachers. Llewellyn demonstrates how the notion of progress "is part of the governance and (re)production generated through mathematics education research" (p. 304) and this defines and constrains the possibilities of educational research. I suggest the notion of ability likewise functions in this way.

To summarise, my identification of Emily drew from wider educational, academic, and mathematics discourses. These discourses were also somewhat context specific, the statistics discourses of the New Zealand educational system differed from those of Chile, whilst functioning in similar ways. The importance of noting the ways in which we recognise our research participants goes beyond the classification of these participants into categories and the possibly negative effects of stereotyping that might occur through this process. This recognition also serves to reinforce the discourses which helped to produce the subjects in the first place. Therefore, we need to examine closely the discourses we draw from, contribute to, and consider whether it will work against or contribute to inequities in education.

Secondly, we need to consider the ways in which this process of identification is in itself an identity performance on the part of the person doing the recognition. Clearly my own social and political context influenced my recognition of Emily, and, as discussed above, my own identity affects the way in which I may 'see' her during the process of research. But identity is not static, rather it is multiple and the performance is fluid. The writing up of research has an effect of making identity seem static; my recognition in the moment is preserved and made to seem as being forever, but of course it is not. Similarly, my researcher identity performance is also fluid and relates also to desires and ambitions, acted in the moment, as well as the temporal and geographical contexts within which I perform.

## 3 Performing a Researcher Identity

As an early career researcher, I am trying to find my niche within the research domain. The way I conduct research, the presentations I give and the articles I write are all performances that constitute my researcher identity. The way I recognize my research participants (including Emily) is likely to be influenced by: the type of audience I wish to address, the type of conferences I wish to attend, and the journals I wish to publish in. In other words, the type of researcher I want to be. Of course, here I must rely on recognition from my peers and hope they identify me as sufficiently academic for their journal or conference. As I worked on my thesis I was drawn to research communities such as 'Mathematics Education in Society'.[6] I felt that for my research to be 'good' (meaning both 'moral' and 'high quality') it would need to address wider issues, such as equity and access. It was in part my naïve understandings of the ways in which to be social and political in research that led me to zero in on gender and ethnicity when I cast the identifying gaze upon Emily. In doing so I may have been trying to force a story of marginalization where it did not fit. Perhaps I was looking in the wrong place; perhaps I was looking in the wrong way. Need I even have looked? My recognitions of Emily related therefore to my own performance of an academic identity and my imagined audience. The type of researcher I desired to be was enacted through my recognition of Emily.

Walshaw (2010) talks of how our desires are caught up in the research process. She goes further than a discussion of reflexivity and researcher positioning, arguing a researcher's sense of self is not only complex but continually changing in relation to the research participant. Walshaw furthermore questions how desires and fantasies map onto the researcher's sense of self. Walshaw's (2010) reactions to 'Rachel' resonate with mine to Emily, in particular her attempt to "confront, rather than slide over, the delicate issue of emotion in the research process" (p. 592). I certainly experienced emotions in the research process and these relate to future ambitions, but also to desires stemming from my past.

[6]See: http://www.mescommunity.info/.

I came to research the experiences of transition to secondary school from a teaching background within primary school and I cannot deny that a small part of me expected and wished to see some of my research participants beginning to experience failure and develop negative identities regarding their mathematics education. I certainly wanted and expected to see a change. Had Emily turned her back completely on mathematics once she moved to secondary school, having been such an avid mathematics student at primary school, I would have been able to embark on a critical onslaught of her secondary school mathematics experiences. This would have pleased my primary teacher self. Typically research in mathematics education tends to create a 'victory narrative' (Brown et al. 2016); the story I was keen to write would cast primary mathematics education in the role of the unsung hero.

However, regardless of whether my desire was to write positive or negative results, I was driven to provide 'understandings' about mathematics education ultimately in order to 'improve' it:

> References to such discourses seem often to shape the activity of aspirational individual researchers. The superlatives used in the construction of these narratives, however, can sometimes disguise the differences between the multiply directed motivations of mathematics education researchers (e.g., for ethical practices, to understand more deeply, to disrupt or think differently) and the operational motives that guide their actions (e.g., securing funding, getting published, recalibrating practice, working towards a Ph.D., etc.). (Brown et al. 2016, p. 288)

The operational motives of my research were more than obtaining a Ph.D.; I was also aware of the need to publish. In this, Emily was my 'money maker'. I have used data from her interviews on a number of occasions. I referred to her specifically in a journal article where I examined different ways of performing a 'good at mathematics' identity and lack of recognition of oneself in this performance (Darragh 2015b); here Emily[7] featured as a case study in which I positioned her as a mathematician, slowly losing her interest in the subject. She features again in a conference presentation where I noticed her marginalisation in mathematics (Darragh 2015a), and she features in another article I am currently drafting. It is clear I recognised a richness of data in Emily. She was one of the more articulate of the participants involved in the study, but more importantly I was able to interpret her statements in ways that furthered my own agendas (to be published, to attend particular conferences) and desires to position myself as a particular kind of researcher. Here too we can see an effect of neoliberalism on the researcher, that is, the "satisfactions" and "rewards" of performativity (Ball 2013, p. 140).

Finally, I wish to mention that I also recognised Emily on a personal level. I liked her. She had a warm and open personality and was actively engaged in the research process. I could relate to the passion she expressed for mathematics in the first interview and I genuinely wished her success in the future. Yet at the same

[7]In the article referenced here, I call her Estelle. Emily and Estelle are both pseudonyms for the same person. This was not an intentional confusion!

time, in recognising Emily as Samoan girl I drew upon all the educational and statistical discourses which essentialise Samoan or Pasifika and gendered experiences. Furthermore, I recognised Emily primarily as a mathematics learner and I foregrounded this identity through the nature of my research. Ultimately I saw Emily as a research participant and saw her for her use value for me and my work.

## 4 Implications for Theory and Research Practice

In this paper I argue that identity research is a useful concept for social and political research in mathematics education, provided it is defined in a manner which incorporates its production within wider discourses. The performance of researcher is a powerful act and it works power not just over the subject, through identification practices, but also through the reconstitution of dominant (or subordinate) discourses. As Valero (2004) discusses, "we are implicated in constructing part of the practices of mathematics education in educational institutions when we act in those spaces as researchers" (p. 19), or in other words: "researchers are always already involved in what they critique, and hence, they produce knowledge and norms" (Llewellyn 2016, p. 303). This is not necessarily negative—the strengthening of some discourses and the disruption of others may be intentional and result in raising awareness within education of the marginalised experiences of particular groups of people. On the other hand, we run the risk of strengthening stereotypes. Was Emily's gender and ethnicity pertinent to my investigation? And, if so, was her social class, 'vulnerability' status, language abilities, race (as distinct from ethnicity), sexuality, or the fact she was able-bodied equally pertinent? The implication here is that we need to take care to consider the purposes and effects of our identifications, whether they be innocent seeming background descriptions or an intrinsic part of the research argument.

In deconstructing my identification of Emily my intent was not only to illustrate how researcher positioning is important, in concurrence with the literature mentioned earlier, but also to demonstrate that positioning and researcher identities are not static. The researcher is performing a temporal and multiple identity and this too needs to be understood as produced in discourse and generating of discourse. As researcher I am a performatively constituted subject, drawing from, constructing, and disrupting discourses. I do identity work with each spoken and written presentation and these identity performances are in part constructed by the stage, theatre, and audiences located in time and space. Finally, my identity performance in any moment also incorporates emotive aspects. In order to reveal fears/desires, purpose, constitutive discourses and aspects of identity, perhaps a final question to pose of the researcher is: 'What do I *enjoy* in this recognition of the participant in my research?' The responses are likely to be illuminative.

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