

UNDERSTANDING IMMIGRANT STUDENTS' TRANSITIONS AS MATHEMATICAL LEARNERS FROM A DIALOGICAL SELF PERSPECTIVE [1]

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This paper examines the transitions that immigrant students experience as mathematical learners in schools and investigates conceptual and methodological tools that contribute to the understanding of the transition processes that promote or hinder students' success in the host culture schools. From a psychological point of view, the study of the transition processes requires a consideration of the person's subjective experience. To help our discussion we will borrow from Dialogical Self 'I' positions theory to examine interview data. We will examine a case study, that of Felipe, an immigrant student who saw himself as liking mathematics and doing well in the subject in Chile, until the moment he realized that as an immigrant student in Catalonia he failed maths.

Key words: immigrant students, transitions, mathematical learners, dialogical self

INTRODUCTION

This paper examines the transitions that immigrant students experience as mathematical learners in schools. Our aim is to investigate conceptual and methodological tools that contribute to the understanding of the transition processes (Zittoun, 2009) that promote or hinder students' success in the host culture schools. For Zittoun (2009) "Transitions can be defined as processes of catalysed change due to a rupture, and aiming at a new sustainable fit between the person and her current environment" (p. 410). Often, a starting point in the study of processes of transition is external criteria imposed by researchers. From a psychological point of view, however, the study of the transition processes requires a consideration of the person's subjective experience. In Zittoun's words "If an event is studied as a rupture that is likely to bring a person or an organism to engage in changes, then the organism or the person under study must perceive the event as a rupture, in some respect" (p. 412). If rupture is a central feature of the analytic process of studying shifts one must re-cast or re-think what is meant by the rupture by addressing sense making such as markers of identity (me/my), relationships (reference to others), disruptions in time, distance from the experience and hypothetical thinking about alternative trajectories.

We wish to tackle what is meant by a perceived rupture. This is a methodological challenge as most of the time, research has focused on transitions that occurred in the

past and therefore the person under study has to be able to recount past events and experiences and how they made sense of these. In addition, the researcher has to have the methodological tools to examine the processes. To help our discussions about ‘points of shift’ in interview data and transitional ruptures we will borrow from Dialogical Self ‘I’ positions theory (DST) (Hermans, 2003) to look at verbal shifts whereby participants go from non-elaboration, to suspension of the voice to a re-engagement. The reason to borrow from this theory is that it allows us to explore the shifts and dialogues between I positions that are voiced by the individual when recounting how they experienced certain events and trajectories in their lives. Drawing on James’ (1890) concept of the “I” (self-as-subject) and “Me” (self-as-object) and on Bakhtin’s (1973) metaphor of the “multi-voiced” (or polyphonic) novel, the DS Dialogical Self is conceptualized as a multiplicity of “identity positions”, self (internal positions) and positions that speak for significant others (external positions).

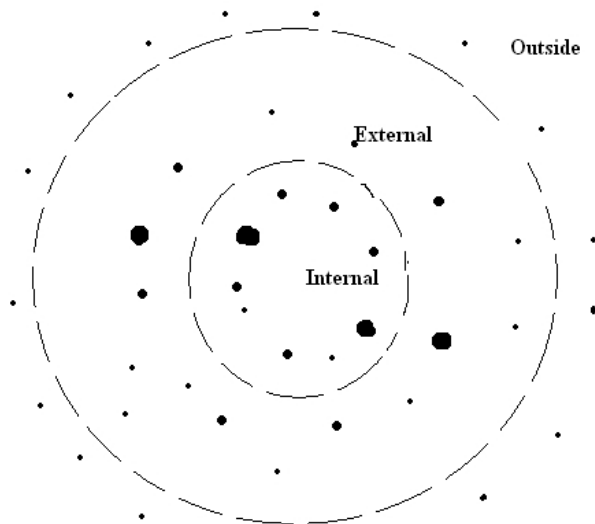


Figure 1: Positions in a multi-voiced self (Hermans, 2001)

The “I” is always positioned in space and time, and these locations result in movement and dialogue between “I” positions. (For more detailed descriptions of the theory see Hermans 2001, 2003, and how it can be applied to immigrant transitions of young people in schools Britain see Abreu, O’Sullivan-Lago & Hale, 2012, Prokopiou, Cline & Abreu, in press). It is precisely the potential to examine the shifts and dialogues in “I” positions, both overtime and across practices (in this case mathematical practices) that makes us believe that examining “I” positions will enable the identification of:

- (i) what is/was experienced by the self as rupture;

- (ii) which strategies were used to protect the self (e.g. suspending, giving up studying mathematics);
- (iii) what was experienced by the self as restoring continuity (e.g. engaging in transitions processes).

THE CASE OF FELIPE

In this paper we will examine the case study of Felipe, an immigrant student who saw himself as liking mathematics and doing well in the subject in Chile, until the moment he realized that as an immigrant student in Catalonia he failed math. The data examined was obtained in an interview carried out in Catalonia by one of the authors of this paper. This is one of the most common methods to elicit memories of one's life trajectories. In our research we have used a specific type of psychological interview that attempts to elicit both narrative and episodic data. Felipe was born in 1993 and spent his early childhood in Chile. In 2008 he moved to Spain (Barcelona) where he continued his education. He arrived in Barcelona during the middle of the academic year and was recommended by the school to go back and repeat the year. He was educated in a private school in Chile but went into a state school in Spain. Felipe provides a useful case study around which to explicate theoretical ideas of rupture and 'I' positions because he has a positive mathematical identity before the transition to a new country, which is disrupted by the move. It is this conflict and tension to the 'I' as a good mathematics student that we explore in more depth here.

ANALYSIS

When Felipe arrived in Barcelona he was surprised to find, like many other immigrant students, that mathematical operations and strategies were not the same as he has experienced in his first country of education (Gorgorio & Abreu, 2009). In this first extract Felipe attempts to reconcile the rupture to his sense of self as a good mathematics student:

Felipe: I couldn't believe it, because I told him it's not that I couldn't, **I failed with sickening grades** and he tells me [his previous maths teacher], but that's not possible, you had good grades and this and that. It's that there was a big jump in level and said that on top of that, it was a big mistake to go to a public school because achievement dropped a lot and I couldn't, **I just couldn't fit in my idea was to study the sciences and because of math I couldn't really do it and now I'm hanging** here in humanities, I don't know.

Felipe attempts to bridge his pre-transition self with his 'new' self by talking to his previous mathematics teacher who is surprised that his student is struggling when he had been successful in Chile. Felipe provides himself with a number of plausible explanations for struggling with mathematics in Spain: a change in level of

mathematical difficulty, the move from private to state school and in another part of the interview, learning a new language in the form of Catalan.

The realization of the “**I failed maths**” is the marker of the disruptive moment for the self, and takes center stage in our analysis, as failing math results in a disruption of what Felipe has planned as his academic career.

Felipe: I wanted to study something related with biology, with cellular biology or with genetic modification or whatever, but related with that and then (???) possibilities it's that now **I see myself without options**, my grades are really low and it seems really hard...

The disruption to the self has far reaching implications beyond the here-and-the-now in the student's life. Felipe's failure to maintain his I position as a good mathematics student forced him to re-think his future career. Theoretically this is prolepsis in action. The notion of prolepsis borrowed from Cole (1995) can be used to explore the way the imagined future, which is framed by past experiences, mediates and constrains the world of the present. Felipe's imagined future is constrained by his past transitional move to a new country and his subsequent failure to succeed in mathematics learning in a new system of education.

What strategies were used to protect the self

Felipe tries retrospectively to make sense of what happened to him and in doing so recounts strategies to protect the self from the disruption. At the early stages of arrival, he saw the self as foregrounding I-positions, such as 'I as closed', 'I as afraid of voicing my problems', as the 'I did not know the other' (the teacher, and the colleagues). Not knowing the new cultural others made Felipe worried that making his problems visible will have the same reaction as in Chile (ridiculing the self), and was a reason for withdrawing. Retrospectively he realizes this would not have been the case, but this knowledge about the new cultural others comes later to be useful for the self at arrival.

Interviewer: You said, I mean, you said, hey, you work differently here. Did you give them some kind of signal, did you let them know?

Felipe: The thing is, **the first few months I think you get here like a little closed because**, well, you're new and **you're nervous, you don't know people**, and on top of that they have a very different lifestyle, at least here in Sant Cugat...

Interviewer: How?

Felipe: Well, people are more, for example, **if a kid in Chile**, for example, if he had said he didn't understand or something, **they'd start to make fun** and other stuff, but here I saw, I don't know, people are like, ok, no problem, you know?

Interviewer: Well, this is good, this is a good thing

Felipe: But that's good, but, well, **I didn't think that way** and **I just kept quiet**.

Interviewer: You were a little...

Felipe: **I kept quiet out of fear of looking bad or I don't know**, because **I was embarrassed**, because **I'd been here for a very short time** and **I didn't know...**

The process of withdrawing offers the self some protection from the new and unknown (as also discussed in Abreu & Hale, 2009). Felipe has assumed that ways of thinking and behaving in Barcelona would be similar to Chile and so feared that people would make fun of him. It took him time to realize the differences in the way people would react to him. He shows retrospective awareness of the importance time plays in the process and returns to the subject when asked his views about the teachers and students in here (Barcelona) and there (Chile).

Interviewer: And what do you think of the teachers here, the relationship between the teachers with the students in, for example, a math class. How do you see them? Does it seem like over there, like a private school in general, or like public?

Felipe: No, I think the relationship between the teacher and students is the same but the thing is this relationship grows in strength as time passes, right? And what you know about the teacher, if you arrived and you met him two days ago, it's difficult to get close to him in a way where he'd help you with something you don't understand or don't know (...) and so one doesn't know he's going to react or anything, he's an unknown person for you and it's hard to take the step to...

Another strategy for protecting the self during transitional rupture was to suspend aspects of the self which were vulnerable.

Interviewer: And you've stopped doing, I mean, you've changed, in the year, the two years you did ESO here, if you change the way you do operations, for example, or did you continue with the way you did them in Chile?

Felipe: The truth is **I got off track right away**, I think **I stopped** and left it behind, that's what I tend to do, the truth is when I don't get something, I leave it aside and I say there'll be time later and I focus on other things, and in the **end I left it aside** and **I just ignored it totally to not cause any trouble**, and I saw it really high, you know, and so I didn't understand and then the time comes when, damn, if you don't understand a second-grade equation, you're stuck there.

As Felipe recounts "I stopped", "I left it aside", "I just ignored it totally", and he makes sense of this suspension in terms of "not to cause any trouble". Suspending is a strategy he describes as part of the way he reacts to this type of situations "that's what I tend to do". It may well be that this is a common strategy for the self to deal with a rupture and gain time to work out transitions. However, later he realizes that

suspending his engagement with the mathematical learning has specific consequences for future learning, as he realizes that “if you don't understand a second-grade equation, you're stuck there”.

What was experienced by the self as restoring continuity (e.g. engaging in transitions processes)

Felipe's final phase of his initial post-transition rupture is to let go of his 'I' as a good mathematics learner self.

Felipe: Exactly, I mean, it was a question of grades because, like I told you, if a teacher is impressed because I have good grades or even if my classmates, because **in the end I told them that I no longer was doing math.**

Interviewer: Illogical.

Felipe: Yes, because **I've always liked it, liked it... from since I was little** and then of course the sciences use all that, right?

Felipe implies here that either the teacher or his classmates could have played a role in restoring his 'I' as a good mathematics student self-identity position. In the end Felipe lets go of the mathematics identity developed in Chile and re-positions his relationship with school mathematics, with the 'I' position he acquired during the period of rupture, “I no longer was doing math”. This resulted in Felipe following a different pathway in his studies, “I took another option”. For his baccalaureate “maths” was replaced by Latin. However, his desire to follow a scientific career remained and contact with older friends already at University started pointing out options of re-engaging with mathematics at University...

Felipe: ... in the end I took another option... and (it was a) disaster... I left maths... and now I do latin... but some friends of mine... older that are already at the uni tell me things... they said to me that they give you some options, that you can do maths as a propedeutical subject... or biology... and if this is true, yes, this is a possibility... is a good alternative... but I'm not well... but if this is so...

When Felipe reflects on his approach to his learning following his transition to Barcelona, he returns to the issue of irreversible time to explain his experiences. He used the example of his younger sister to suggest that his transition could have been more positive and successful if they had been addressed by significant others, such as teachers and parents, at an earlier time.

CONCLUSIONS

Using dialogical self “I positions” as a conceptual and methodological tool in this paper we examined the ruptures an immigrant student experienced in the transition across school mathematical practices from one country to another. We have used a case study approach to explore changes in mathematics identity positions when an

identity position, in this case the “I as a good mathematics student” is under threat. We first examined the student descriptions of “I-positions” that reflected a rupture to the self. Then we examined the “I-positions” involved in coming to grips with a new and unfamiliar sense of self (e.g. being no longer good at maths) and trying to provide the self with explanations for the change. This involved three specific dialogical self strategies: withdrawing of self, suspending of the self, and a letting off the old mathematical self go. This process also meant the student had to engage with a distinct change to their imagined future, as the imagined “I-position” as studying a scientific subject at University became uncertain (not possible). We argue that the transition process involved dialogical self work to restore some continuity in the self. In this case continuity was not afforded by the new mathematical I position (I as failing mathematics), thus the perceived alternative, was to give up school mathematics. This refers to a specific time in the experience of the student, and it is interesting to consider two aspects on Felipe’s reflection. One aspect refers to his reflections on the way “time” impacts on the dialogical self work. As he stresses that in the initial stages the key others (teachers and colleagues) are unknown to the self. Thus, the self dialogues are still drawing on images from the past (schools in the home country). The other aspect refers to Felipe reflection that significant others parents and teachers can play a role on the impact of time by becoming aware and addressing issues at the earlier stage. To briefly think about future research: we know quite a bit about the disruption to the self and learning post immigration transition but there is still little practical guidance for significant others on how to help their children and students in this process.

NOTES

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