Becoming a researcher. Dialogical-self based methods to the identity formation of postgraduate students

Convertirse en investigador. Métodos basados en el Self Dialógico para la formación de la identidad de estudiantes de postgrado

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Abstract

Based on the dialogical-self theory the study aims to determine how a course based on identity development might contribute to changes in the I-positions of the participants. The study explores what changes did occur and also determine which devices contributed the most to the I-position's development of the students as researchers. The investigation was held within the course of the research line in an Official Master in Educational Psychology at a Spanish University. The findings suggest that there have been significant changes in the student's I-positions, specifically strengthening those related to research. The methods that have contributed the most were the role-playing, the after class reports, and the peer interview. Therefore, these findings contribute not only to a better understanding of the process of changing and developing I-positions as a way to become a researcher, but also to provide valuable educational methods to improve junior researchers' formation.

Keywords: **Researchers, Higher Education, Identity Formation, Dialogical Self**

Resumen

Siguiendo la teoría del self dialógico tenemos como objetivo determinar cómo un curso basado en el desarrollo de la identidad podría contribuir a generar cambios en las posiciones identitarias (I-positions) de los participantes. Exploramos los cambios producidos y establecemos qué dispositivos contribuyeron más al desarrollo de la I-position de los estudiantes en tanto investigadores. Realizamos el estudio en un curso de la línea de investigación del Máster Oficial en Psicología de la Educación en una universidad española. Los hallazgos sugieren que se produjeron cambios significativos en las I-positions de los estudiantes, fortaleciendo las relacionadas con la investigación. Los métodos que más contribuyeron fueron el juego de roles, los informes individuales y la entrevista entre pares. Estos hallazgos contribuyen a una mejor comprensión del cambio y desarrollo de las I-position en el proceso de convertirse en investigador y también aporta métodos educativos valiosos para mejorar la formación de los investigadores junior.

*Palabras clave: **Investigadores; Educación Superior; Formación de la Identidad; Self dialógico***

INTRODUCTION

Learning to be a researcher is a central aspect of doctoral training, whether in academia or outside of it (Barnacle & Mewburn, 2010). Some studies point both to the value of high research skills in the non-academic world (Svein & Terje Bruen, 2012) as well as the importance of professional identity in researchers within academia (Hancock & Walsh, 2014) promoting a more flexible under-standing of becoming and being a researcher.

However, doing a PhD requires a high level of cognitive, personal, and emo-tional skills to deal with the challenging situations that lead students through the difficult process of being an active participant in a scientific and discipli-nary Community. Although, little has been studied about the training these students need to receive to handle such demands and to cope with the difficul-ties they may encounter.

As discussed by Margaret Kiley & Gina Wisker (2009) develop as researcher, im-plies not only handling knowledge and skills about research but also experienc-ing moments of transformation that involve emotional thresholds. PhD training transforms the individual becoming through it, in a researcher (Mantai, 2015). Therefore, there is a negotiation of new identities that reconfigure them as professionals, as researchers and as persons. (Hall & Burns, 2009). This process is gradual and permits recognizing micro-moments where students identify and feel themselves as researchers, and others where they do not.

In the same line, previous studies focused on the academic trajectories, de-scribing significant events on the student's development (McAlpine, Amundsen & Turner, 2014; Sala-Bubaré & Castelló, 2017) highlighting several challenges they have to face, affecting how students understand and face their process of becoming researchers.

These studies also point out how significant events experienced affect their confidence and their performance, both in PhD studies as well as their personal lives, which may increase the tendency to drop out of studies (Hyun, Quinn, Madon & Lustig, 2006). Paying attention to the above-mentioned aspects seems to be crucial in preparing students to face their future academic career.

Although research conditions, institutional or personal factors have a great im-pact on this process, previous studies (Skakni & McAlpine, 2017) highlight that the interpretation and meaning that students build on their experiences is even more relevant. These studies refer to the particular interest in understanding the subjects' representations, intent, decision-making process and resilience that they may develop during their PhD careers (McAlpine et al., 2014).

Therefore, putting the focus on identity seems to be crucial. Analyzing how future PhD students give meaning to the events they face and what emotions they attribute to them, contributes to deepening the understanding of the effects those factors have on motivation, commitment, continuity and development of a flexible identity as researchers (Castelló, Pardo, Sala-Bubaré & Suñe-Soler, 2017; McAlpine, 2012).

From the above, we understand that while PhD studies are crucial, becoming a researcher does not begin or end there. Despite being scarce, some previous studies have already drawn attention to the relevance of the stages prior to the PhD in the formation of researcher identity (Berzonsky & Kuk, 2000; Hunter, Laursen & Seymour, 2007; LaPointe, 2010). Is in the context of Master's programs that many of the students define their interest in research.

Notwithstanding, there are just a few experiences of Master programs that have courses focused on researcher's identity development, which consider a line of research that bridges with PhD studies. One of these courses is offered by the Master's degree in Educational Psychology of the Universitat Autònoma de Barcelona, which is characterized as a transition course towards PhD studies.

Consequently, in this paper, we aim to determine how a course based on researcher's identity development (hereafter the course) might contribute to changes in the I-positions of the participants, concretely our objectives are:

1) To describe the changes in students I-positioning as researchers due to the training course.

2) To analyze which of the educational devices, proposed in the course contributed the most to the I-position's development of the students as researchers.

The results of this study contribute to putting in the center of the training courses the researchers' identity as a core issue and introducing new teaching and learning methods to promote the researcher's identity formation.

THEORETICAL BACKGROUND

As argued in the previous section, there is a recognized need to understand better the process of becoming a researcher by paying attention to a contextual, dynamic and flexible notion of identity. Some authors suggest the concept of positioning, while in this study we approach it from the Dialogical Self-Theory, using the notion of I-position to study the micro-changes that permits students to feel identified with different I-positions in different moments.

From the aforementioned perspective, identity is considered as a multidimensional entity, consisting of multiple I-positions (Hermans, 2003) or identity elements (Vignoles, Manzi, Regalia, Jemmolo & Scabini, 2008). It has a dialogical nature and is continuously reorganized because of its internal dynamics and context-dependency (Kashima & Loh, 2006).

Thus, an I-position is a contextually bounded, personal voicedness perspective of action in front of an event or situation. Each I-position has its own set of voices, is a meaning-making entity and is driven by the intentions towards the situation in which the person is involved (Hermans, 2003). For example, a student might have an I-position as a student and at the same time I-positions as researcher, student, professional or teacher, depending on the situations they go through.

The I-positions, through their voices, actively establish dialogues within each other. This internal dialogue is a phenomenon of mutual exchange, of negotiation between I-positions' points of view that results in a transformation of the previous configuration of the self-system. Some possibilities of this modification could result for instance in the emergence of a new I-position (i.e. new IP as a research apprentice), the establishment of coalitions between I-positions (i.e. IP as a research apprentice-teacher) or the higher visibility of some (i.e. IP as a student in PhD students). Also, may cause the silence of others (i.e. IP as research might silence the IP as a non-academic practitioner) which then stay hidden or will play a secondary role, (Batory, Bąk, Oleś & Puchalska-Wasyl, 2010).

Nevertheless, the inner dialogue between I-positions can also lead to the confrontation of personal perspectives, producing confusion, and maybe finishing in a poor decision-making process. Therefore, the self is a negotiated space, and the voices within the self can be diverse or even contradictory (Akkerman & Meijer, 2010). Consequently, when people are talking or thinking, they often integrate, contrast, and move between different I-positions (Hermans, 2003).

As several authors propose, apart from a "global" we have a "partial" sense of identity, which also means partial self-esteem, efficacy, sense of agency, among others (Swann, Chang-Schneider, McClarty, 2007). Hence, the study of the different I-positions development permits to consider specific self-views, and changes in certain situations even in a single context of activity, such as the academic.

I-positions are contextually dependent, according to their sensitivity to external influences. External pressures, sometimes not very evident, modify interrelations and produce an imbalance in the internal dynamics of the existing iden-

tity. Such pressures can come from occurrences, significant events, turning points, critical incidents and others, which increase the possibility of an internal reorganization (Batory et al., 2010). It is, for this reason, we believe that training aimed at future researchers should consider these experiences.

A series of motivational principles such as self-esteem, continuity, distinction, belonging, meaning-making, would guide this sensitivity to the environment and the direction of the identity reorganization. The place occupied by an I-position in the identity system is determined by its capacity to satisfy the motives or interests that the person has invested in a specific situation (Vignoles et al., 2008). Therefore, the place of the I-positions will have to do with the prominence attributed to certain elements of identity, the positive feelings related to them; and the behaviours and efforts addressed to communicate those aspects of their identity to others, in their daily life.

Accordingly, in this paper, we will describe the changes in students' I-positioning aspects such as the notions regarding research, the intention to carry out the PhD Program, the process of research, the finality of research, the motives to do a PhD, the identification as a researcher and the positive and negative interpretations they give to experiences during the course.

Identity and communities of practice

The dialogical self is social in the sense that other people's voices also act as external I-positions in a multi-voiced self (Akkerman & Meijer, 2010). According to Bakhtin (Hermans & Kempen, 1995), individuals often speak the words of the groups or society to which they belong, mediating the voice of traditions, generalized others, institutions, groups, communities, colleagues, relatives and friends through the dialogical participants (Linell & Marková, 1993).

There is an evident influence of social context in the construction of the self, as well as in the identity formation. Therefore, the construction of identities is the result of individuals' participation in communities of practice, and the social interactions within these practices are essential for shaping their own Identity (Mantai, 2015). The broader social and cultural context with its institutional norms, practices, beliefs, and discourses are involved in the interpretation and construction of Identity (Vähäsantanen, Hökkä, Paloniemi, Herranen & Eteläpelto, 2017).

In this context, the academic environment constitutes a specific community of practice (Wenger, 1999). It is a space with a particular objective, rules, distribution of labour, shared meanings, implicit values and practices, traditions, beliefs and common discourses that will excerpt a decisive influence on the identity construction (Vähäsantanen et al., 2017; Ylijoki & Ursin, 2013).

Besides, we recognize that identity implies numerous I-positions that future researchers build through their participation in multiple spheres of activity, such as family, work or others. However, in this study, we focus on I-positions generated in the formative-academic context.

Dialogicity and generative dialogue on educational Settings

While the consideration of dialogic activity on the identity formation and positioning process, has been extensively developed in Psychology; the consideration on the dialogical dimension on educational settings is insufficient, and methods based on generative dialogue have barely received any attention.

The notion of generative dialogue (Hermans, 2018) is based on a particular idea of communication between I-positions in the self, with the potential of contributing to the richness, heterogeneity and organization of the self in such a way that different I-positions and the self as a whole, profit from this communication in optimal ways. The generative dialogue includes four steps: negotiation, debate, persuasion, and command.

In a scenario of generative dialogue, the internal divergences have their place as different I-positions expressed through personal voices within a negotiation, debate, and meaning-making process. Thus, new voices can be more visible, loud and might help to a more in-depth learning process. Therefore, educational dialogical-based methods might facilitate multi-voicedness promoting the emergence of new I-positions of a flexible research identity.

In this line, previous studies that have paid attention to forms of generative dialogue refer to reflective training for professionals in transition, reflective professionals, group development, learning in virtual environments (McCorquodale, 2015; Mikes-Liu, Goldfinch, MacDonald & Ong, 2016); the relationship between identity and learning, (Ligorio, 2010) or learning to teach (Gunnlaugson, 2006; Tobin, 2006).

Although they all agree on the relevance of reflection and generative dialogue as an essential tool for learning, there are only a few mentions of how or what kind of methods or procedures could promote this process concerning identity development.

Some methods based on generative dialogue, connected to identity formation referred to in the literature are: analysis of trajectories and narratives (Turkle, 1994), systematic reflection on experiences, striking moments and solution-focused activities (Lowe, 2005) and role-playing games (mainly studied in computer games (Corneliussen & Rettberg, 2008).

For this study, we have selected some of these identity-focused training methods, which have already been tested in educational contexts and are proven to produce a generative dialogue as well as to reconstruct or promote the creation of new I-positions (Monereo, Badia, Bilbao, Cerrato & Weise, 2009; Monereo, Weise & Alvarez, 2013).

METHODOLOGY

The research is based on the mixed methods approach refers to the integration of data during data collection, analysis, or discussion (Creswell, Plano Clark, Gutmann, & Hanson, 2003). It allows research questions to be answered by complementing data of a quantitative and qualitative nature by providing greater richness and depth.

We consider the statistical analysis in order to explain the results of the intervention and the qualitative data to follow up on the experiences and to examine participant's perspectives during the intervention (Triggs, Victor, Ross & Axford, 2000). For that purpose, an open-ended online questionnaire was applied at the beginning and the end of the course. An after class reports was delivered each week, and an individual journey plot was constructed and analyzed during the course.

Participants

The study was held with 14 voluntary students of a master course titled: Themes and Current Lines on Educational Psychology, during 2016-2017. The course belongs to the research line of the Master in Educational Psychology of the Autonomous University of Barcelona. It is oriented to future PhD students.

The average age of the participants was 26.93 years (SD = 5.837), 71.4% women, and 43% are from abroad. All the students were completing the Master's degree, and 35.7% had a scholarship. Just before starting the Master's degree, 57.1% of the participants were studying, and 42.9% were working in the educational field (i.e. professor, pedagogue, monitor, educational advisor and author of teaching materials). About participants' previous research experience, the majority (85.7) has previously collaborated in some research project.

Course Procedure

In order to develop researcher identity, the course was organized on a sequence of activities based on dialogical methods, which allowed the emergence of generative dialogue. In the course, students were also familiarized with different debates and theories on identity formation, which were always used to reflect on their own process of change.

It was a 4-month course, of 48 hours, which embraced the following main activities: papers' discussion with rotate role-playing, review of the personal trajectory and the junior researchers' presentations by which they explained the process of preparing their final dissertation, significant events analysis and identity exploration, and poster presentations of a research project, previously prepared.

In the table 1, we summarize the different methods used.

Method	Description	Context of use	Focus	Information collected through
Role-playing	The students play the roles of paper author, discussant, and reviewer of a journal.	Three paper discussion, experiencing once each role	I-Positioning	After class reports
After class reports	Reflexive class reports regarding, perceptions, learning, key reflections, doubts, ideas for their project.	7 after class reports	Conceptions, I-positioning, voices	After class reports
Poster	Poster about a personal research project as is presented in a scientific event.	Peer preparation and presentation of a personal research project at the end of the course.	I-Positioning	After class reports
Peer interviews	The students, in pairs, interview each other about themselves as researchers, weaknesses and strengths and the most worrying them in their future development.	Once, in the 6th week while the reflection about their own identity is advanced.	I-Positioning, generative dialogue, voices	After class reports
Journey plot	Through a graphic, the students weekly report CI or SE that occurred, their way of dealing with them and their consequences.	Along the complete course, reporting at least one event occurred in-between classes.	Internal dialogue, voices, feelings and conceptions	After class reports and JP
Junior PhD presentations	PhD Presentation of their thesis, the process, difficulties they have had and how they resolved them.	Five presentations along the course.	I-Positioning	After class reports

Table 1. Methods used in the course

Data collection and analysis

We now shall proceed to describe the instruments used in the research and the analysis process. We used some of the training methods explored with a double aim, using them also as research techniques. We selected the mentioned below because they aimed to reflect on the whole process integrating all the information required.

Initial and final questionnaire: It was applied in two moments: before and after the course. It consisted of 38 items aiming to collect data on socio-demographic characteristics, conditions of completion of the Master's degree, professional trajectory and previous experience in research, significant events related to research and professional positioning and research of the participants and the contribution of each method to their identity formation as researchers.

After-class report: Additionally, 7 reports by every participant (n=84), were delivered during the course length (4 months) to collect information about their experience and their perceptions towards learning, key reflections, doubts, ideas about their final project, feelings related to being a researcher and the different methods applied each class.

Journey plot: Each participant prepared a JP along with the course reporting and analyzing the most significant events they experienced.

All interviews were done in Spanish, audio-recorded and transcribed in their entirety for coding and analysis. The selected quotations were translated to English using the forward-backwards procedure.

ANALYSIS

The analysis was both quantitative and qualitative. The quantitative part of the study was based on the before and after questionnaires, which allowed comparing results and highlighting variations among them. The qualitative information was used to show the process of I-positioning.

To analyze the descriptive relations between variables the SPSS program (v21) was used. Chi-Square, ANOVA, and independent-samples t-tests were performed, applying the bootstrap function to compensate for the reduced sample size.

The MAXQDA program (v8) was used to open code responses, the after class reportss and the journey plot description, based on the principles of Content Analysis (Flick, 2009; Neuendorf, 2017). The segments found both in the open-ended questions and the reports were labelled to define the categories of anal-

ysis. Two of the investigators analyzed the responses of 5 randomly selected participants (33% of the sample) independently, and the degree of agreement ranged was from 77% to 80% in the allocation of all quotes, which confirmed the reliability of the category system.

The analyzed categories to study the I-positions as researchers due to the methods used are indicated in the table 2.

Categories	Sub-categories
Conceptions of research meaning	What means to research (purpose, finality, process) Interest on research
Motives as researchers	Self-identification and positioning as a researcher Intentions to carry out the PhD Motives and conditionings to carry out the PhD
Interpretation of significant events related to research	Negative experiences Positive experiences
Contributions of the methods	

Table 2. Categories and sub-categories

FINDINGS

In this section, we will illustrate some results of the quantitative and qualitative analysis. First, we describe the changes promoted by the different methods used during the course and the voices of the students about their I-positions as researchers. Secondly, we highlight which devices contributed the most to the I-position's development of students as researchers.

Changes in the I-positions as researchers

The notions regarding changes in the I-positions of the students are 1) conceptions of research meaning, that includes the meaning assigned to research and the interest to research; 2) the motives as researchers that include self- identification & positioning as a researcher, intentions to carry out the PhD Program, and personal motives & conditionings to carry out the PhD Program and 3) interpretation of significant experiences as positive and/or negative.

Conceptions of research meaning

Meaning to research

Regarding the conceptions about what it means to investigate, we observe qualitative differences in the statements of the participants. Before starting the course, most of the participants (11 students) highlighted the basic purpose of the research (i.e. to deepen on a topic and/or build new knowledge); there were 6 mentions for: Providing knowledge and dialogue with the scientific community; Social improvement, innovation and/or scientific dissemination; Evidence-Based Practice; and another 6 mentions for: some characteristic of the process although in 3 of the cases a pseudo-scientific process was described.

After completing the course, the participants reported more complex and multidimensional definitions of research: they not only contemplated the purpose of the research (8 students), but also there were increased statements pointing out some of the purposes (12 students) and/or indicating some of the characteristics of the process (11 students, i.e. scientific, flexible, strategic and/or collaborative with the scientific community).

In the table 3, we can observe how these conceptions changed.

	What does investigation mean?	Mentions before Frequency	Mentions after Frequency
Purpose	Deepen on a topic and/or build new knowledge	11	8
Finality	Provide data of interest and dialogue with the scientific community	3	5
	Social improvement, innovation and / or scientific dissemination	1	5
	Improve your own professional practice (Evidence-based practice)	2	2
Process	Pseudo-scientific	3	1
	Scientific	3	7
	Flexible and/or strategic	0	2
	Collaborative within the scientific community	0	1
Total		**23**	**31**

Table 3. What means to research before and after the course

In the after class reports[1], the main quotes of the participants also pointed out changes in the research I-positions. The next quote illustrates an interpretation of these changes.

> It helped me to see the research work as a process of adaptation, adjustment and constant improvement in the process of describing and writing the results and an article (Participant 3, after class reports, june, 2017) (relating to the flexibility of the process).

Another student expresses a new understanding of the research process as a scientific, systematic activity:

> It helped me to take into account many factors that intervene in the conduct of an investigation, from the design to its implementation, the difficulties involved in this process and how to deal with them. (Participant 9, after class reports, June, 2017)

Also, this quote clearly shows how the conceptions he/she had changed due to the participation in the course:

> There has been a change in the conceptions I had about the research subjects since most of the time, they had remained in theoretical aspects (methodology, analysis of scientific articles, etc.). It has also helped me replace the "bad experience" of the last subject I did. However, this class seemed very interesting and profitable, so I hope to continue (…) to build the identity as researcher, in all its roles, which until now has been to discover. (Participant 5, after class reports, June, 2017)

The students also broadened their conceptions about research, considering the relevance of the academic community of practice.

> My perceptions about the development of the doctorate have changed because this presentation has allowed me knowing a finished product in this context, following the requirements for that kind of task. It motivates you more to fight for doing a good job even though there are difficulties along the way to be part of. (Participant 4, after class reports, June, 2017)

Interest to research

The findings show that the students initially had a high interest in researching, but a formative purpose not clearly related to the activity of research.

Before starting the course, 11 of the students had selected the research itinerary of the master course and 2 the mixed one. Although, concerning the pur-

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[1] In order to guarantee the confidentiality of the participants, all personal data have been anonymized following the corresponding ethical rules. For this reason, the names have been replaced by the aliases P1,P2 and successive ones.

pose of the Master's degree, just one considered learning how to investigate. The majority (8 of 14 students) emphasized in wanting to improve their education in educational psychology or to improve their professional skills (4 students).

Among the reasons expressed by those who selected the research line, 6 students had the intention to do the doctorate; followed by 4 students, interested in learning how to research; and, finally, 3 students who considered starting a research career.

After the course, the interest in and orientation towards research increased. All the students said they were satisfied with the choice of the research itinerary. Among the reasons, they highlighted that it had allowed them to develop knowledge and skills related to research (5 students); continue with the doctorate (4 students); modified their conceptions about what it means to investigate (3 students), and that this gave them more work opportunities (2 students).

Motives as researcher

Self-identification and positioning as researchers

Regarding the level of identification of the participants with the different I-positions of their identity repertoire (ie, student, teacher, advisor, and researcher), differences are observed before and after the course. After the course, the level of identification with student's and teacher's I-positions decreases; and the I-positions as an advisor and specially as a researcher increase.

Before completing the course, in response to the question "How do you define yourself as a professional?" The majority of participants (7 students) stated that they defined themselves as professionals in practice (i.e., advisor, teacher, educator, pedagogue and/or psychologist); 6 as a student; and, only, one case, as a researcher.

In table 4 we can observe a process of definition and self-affirmation in both senses, as researcher or as another I-position. Before the course, 6 of the students did not describe themselves as researchers and one of them declared to be "researchers in process". In the end, the number of students who did not identify themselves as researchers decreased to 3 of the cases, and those who described themselves "in process" to become researchers, increased to 5 students. Also, some participants moved from "totally position myself as researcher" to "in process".

Do you see yourself as a researcher?		Before Frequency	After Frequency
No		6	3
Yes	In tension	4	4
	In process	1	5
	Totally	3	2
Total		**14**	**14**

Table 4. Self-identification and I-Positioning as researcher before and after the course.

The next quote shows the complexity of this process and how he/she sees the transition:

> There are two identities that I feel I perform at the same time, that of the student role, and that of researcher. Each identity requires very different actions, and this event allowed me to analyze this duality, how do we have to act in a certain way in different situations and how sometimes, conflicts as students escape from our reflection when acting as researchers and vice versa. (Participant 2, after class reports, June, 2017)

Intentions to carry out the doctorate

Considering the intentions to carry out the PhD Program, we observed a process of distinction and definition of the I-position as researcher. Before completing the course, 11 of students said they wanted to do their PhD, and 3 had doubts. After completing the subject, the number of students who wanted to do the doctorate increased at 13 students, one student indicated not willing to do the doctorate, and there were not students who expressed doubts.

Related to this higher differentiation of the I-position, one participant expressed:

> I think it has been the most practical subject of research and more focused on developing our identity as researchers. I value that very positively since it has allowed me an approach and knowledge about the research that until now, I did not know and has helped me to define my intention to continue with a Ph.D. (Participant 9, after class reports, June, 2017)

Motives and conditionings to carry out the PhD

Another important finding was the changes in the motives to carry out the PhD as we see in Table 5.

Among those who wanted to start doctoral studies, the main reasons were the intention to continue studying and training (three of ten students), but in the end, these reasons disappeared.

Another important reason stated before the course was to consider it a personal challenge (3 of 10 students); want to work as a researcher or at the university (3 of 10 students), and one of them want to develop their researching skills.

Nevertheless, in the end, new reasons appeared, and conditions for the completion of the doctorate came forward: the intention to increase professional experience before starting it (4 of 13); want to do it but don't have resources (2 of the 13), and one of them want to contribute to the improvement of education.

	Before Frequency	After Frequency
Personal challenge; I like, interest	3	2
I want to continue studying / training	3	0
I want to develop my research skills.	1	2
I want to be a researcher or work opportunities.	3	2
I want to contribute to improving education.	0	1
Before to do it, I want to increase my experience on intervention.	0	4
I want to do it, but I don't have resources	0	2
Total	**10**	**13**

Table 5. Motives and conditions regarding the intention to do the PhD

In the qualitative information, students reported several quotes exposing the enrichment and expansion of their motives towards research:

> Although I already had the intention to elaborate on the practices in a research group that would allow me to link it with a possible Ph.D., I was very far from deciding which field to go to. To see a little clearer, what path to follow has been a major change, and perhaps the most significant, in my identity as a researcher. (Participant 9, after class reports, may, 2017)

Significant Events (SE) related to research

The data also showed qualitative differences in the interpretations of the most significant type of research experience, both negative and positive, that participants manifested before and after the course (see Table 6).

Before the course, 8 of the participants recognized the methodological difficulties (data collection or analysis) as the most negative experience; 2 students mentioned the feeling of lack of knowledge or skills; one of them mentioned time management difficulties; and other one, difficulties of participation and relationship with the scientific community. After the course, on the contrary, only 2 students mentioned highlighted the methodological challenges (data collection or analysis) as the most negative; being two new types of experience — doubts about the future career (4 students) and the difficulties associated to scientific communication (3 students).

Types of negative experiences	Before Frequency	After Frequency
Methodological difficulties	8	2
Lack of knowledge	2	1
Time management difficulties	1	2
Relation with the academic community /research team	1	2
Concerns about future career	0	4
Scientific communication difficulties	0	3
Any	2	0
Total	**14**	**14**

Table 6. Negative experiences related to research before and after the course

A significant example of the process of interpreting more realistically the research through a SE is the following quote:

> I have had to constantly raise some personal aspects such as my vision of the future, what would I like to work or what would I like to do? This feeling lasted a couple of days, so I started to investigate more about both personal and professional implications of continuing with a PhD, and it made me analyze more realistically and critically my academic and work situation. (Participant 5, after class reports, may, 2017)

Most positive experiences

Regarding positive experiences, we also observed differences before and after the course. Before starting the course, 5 of the students said that learning and developing new skills was the most positive experience so far; followed by participation in a research project (4 students); support, collaboration or recognition by the scientific community (2 students); and collaboration in a publication (2 students). After the course, two new types of experience appeared as the most important: knowledge of the experiences of novice research (5 students) a reflection on professional identity (3 students); and the support, collaboration or recognition of the scientific community gains importance (3 students) (See Table 7).

Types of negative experiences	Before Frequency	After Frequency
Learn and develop new competencies	5	2
Participate in a research project	4	0
Support, collaboration or recognition of the scientific community	2	3
Participation in a scientific publication	2	1
Knowing new research experiences	0	5
Reflection about professional Identity	0	3
Any	1	
Total	14	14

Table 7. Scope of negative experiences related to research before and after the course

The participants reported their reflections on these experiences, showing modifications on their I-positions consisting on the expansion of their conceptions about research and their feelings attributed to the experience.

> Being able to see the I-positions that reflected me, make me realize about aspects that play an important role in the construction of my identity as a researcher, the conceptions I have about what is to investigate and the problematic relationships that arise working such aspects. (Participant 2, after class reports, may, 2017)

Contribution of the educational methods to Identity development

During the final questionnaire, the participants were asked to assess the contribution of each method to the construction of their identity as researchers.

Most of the participants (12 students) valued the role-playing as the most important method, with the highest contribution to their identity formation (12 students), in second place they locate the after class reportss (11 students); in third place, they posed the poster preparation and presentation (10 students); in fourth place the peer interview and the journey plot (9 and 8 students each). Finally, they emphasized the relevance of junior researchers' presentations in the last place. No method was considered without relevance or contribution to identity formation.

According to participants' perceptions, these devices contributed to their I-position development as researchers, in the following ways.

One of the most valued methods was role-playing. Particularly they valued the possibility to explore I-positions that they did not know before, thus experiencing the challenges, the demands of the task that they were assuming as well as the chance to change their perspective, in rotating the role. After completing the rotation, they pointed out the enrichment of their views and skills as researchers, the possibility to experience different I-positions and to enlarge their comprehension about what being a researcher means.

> This activity has helped me to know and put myself in the place of the different figures that can be found in a conference where research is presented. I think that each role has taught me different things, but above all I have experienced the three I-positions as a whole, to experience first-hand the point of view, functions, and difficulties of each. (Participant 6, after class reports, June, 2017)

The participants considered the after class reportss as a *window to their thoughts* in a generative dialogue; it was mentioned as a powerful reflexive tool, establishing a dialogue between their inner I-positions. The after class reportss allowed them to organize, debate, persuade themselves, reflecting on their own experiences, and making sense of them.

> It was an effort, but now I realize that writing my ideas, and reflecting in an organized way, allowed me to identify and develop my I-positions as a researcher. Now I know in which aspects I have strengths and in which I must improve as a future researcher, as well as regulate my expectations about what I would find in a research group. (Participant 10, after class reports, June, 2017)

Respect to the poster presentation, the students considered they had the opportunity to enhance their understanding of the research process, to foresee some situations that they might face in the future as a researcher and experiencing another I-position.

> The activities (role-playing and poster presentation) helped me to understand the different positions, to act as a researcher and acquire a global vision of the entire process. It was hard sometimes, but I didn't have an idea of how it really works. (Participant 11, after class reports, June, 2017)

The peer interview was also considered relevant because it allowed the emergence of some hidden voices. According to the participants' perception, contrasting with peers, speaking regarding their thoughts and feelings and exchanging different points of view, shaped a positive scenario to deepen the different voices and I-positions they have and to express their inner-dialogues; as it is shown in the next example:

> The peer interview was very reaching, through dialogue with others and yourself, I learned that, as individuals, we perform positions under our different identities. These I-positions are often not consciousness, and others could help to identify "hidden" aspects of these different I-positions. (Participant 14, after class report, may, 2017)

The journey plot, as they mentioned, gave them the time and contextually bounded perspective of their experience, establishing a continuum among the different events they identified. Even though they reported positive and negative experiences, they pointed out the JP was useful to identify possible contingencies that trigger contradictions between I-positions. It was an opportunity to develop strategies to cope with them and to situate the process of becoming, as a long term, dynamic process charged of emotions, ups, and downs. In the participants' words:

> The Journey plot was very useful, it helped me to represent differently, in a very visible graphics, the main contingencies or contradictions that can occur within our own identity. Reflecting on it, gave me a vision of my process during the course. Sometimes I felt bad. It was like, I don't know, like a zigzag of events that now I interpret as continuity, as a part of my own process. (Participant 7, after class report, June, 2017)

Finally, the junior's PhD presentations were valued as a possibility to approach to others' experience and to get closer to the rules, habits, and values of participating in an academic community. Junior's presentations helped to see implicit decisions around the research process, the difficulties, and the strategies that others, more experienced, used to go over and remain engaged until the conclusion of the Ph.D.

The next quote summarizes the perceptions explained by the students:

> It helped me to assume the role of researcher, visualizing the decisive points of the future career. There were some things, ideas that they commented about the problems they faced, their experience that remained

> dancing on my head along the course. It was like a company, and in some moments I said to myself: wait, remember, what is happening to you is part of the statistics, is part of the process, so do not discourage yourself. (Participant 10, after class report, may, 2017)

DISCUSSION AND CONCLUSIONS

In this study, we aimed to explore the changes in the I-position of master students by describing their characteristics. From the findings, we concluded that the course had a significant impact on the student's identity and on the development of different I-positions as researchers that start from an initial interest in improving learning moving towards more specific aspects of being a researcher and starting the academic career.

At the same time, participants changed the meaning of research that they previously had. The process of reflection and meaning negotiation between the I-position of students or practitioners, and the emerging I-position as a researcher shaped a more realistic, rich, complex, and multidimensional view of research meaning. It integrated new notions such as flexibility, collaboration and strategic decision-making.

As we have reviewed in the literature, this process is sensitive to the context in which the experience is rooted. The possibility of trying out different roles, of listening to information from young researchers and of reflecting on their own negative and positive experiences allowed them for new exchanges between the I-positions. This changed the self-system, making the I-position as a researcher salient (Batory, 2015). This process, as we revised in the literature, is susceptible to the context in which their experience is rooted.

A stronger identification with the I-positions as a researcher is also indicative of this change. The participants clarified their initial doubts, either by putting themselves in the new position of a researcher or by consciously choosing another one (a practitioner, a student, an advisor). This process can be characterized as a growing recognition of a new or stronger I-position, which can dialogue with previous ones without dismissing them (Hermans & Hermans-Konopka, 2010).

Remarkably, students changed their conceptions about research, but they were also more enthusiastic about continuing the PhD program, even though they were aware of the challenges and difficulties it would entail. These results exemplify well the process of differentiation from the I-position by gaining cognitive centrality (Vignoles et al., 2008).

The results are broadly in line with previous studies (Batory, 2015) that highlight the relevance of the I positioning capacity to satisfy the motives and interests of the person in a specific situation. Likely, the variations in the interest appeared as a promoter of new I-positioning. The methodological issues initially strongly concerned the participants, but gradually the more negative experiences focused on the professional future and scientific communication were highlighted; which is consistent with higher awareness of researching. These concerns are closer to the challenges that a researcher will have to face. Their voices, notions, feelings, and perceptions of the actions required to be a researcher were modified, gaining richness, realism, and adjustment to the characteristics of the community of practice.

However, according to Hubert Herman's (2003) ideas, it can be concluded that there is a transition process, a change in which the different I-positions negotiate spaces in the self-structure. At the same time, a process of reaffirmation occurs, contributing to the distinction of the researcher I-position and favouring the sense of belonging that allows the continuity between his previous I-positions and the new ones. As we explained, the sense of continuity-discontinuity is built in the dialogue and contradiction (Parker, 2009) with other I-positions (student, professional in practice), sometimes giving them more space, or finally silencing some of them, assuming for example that being a researcher is not desirable at that moment.

However, as we have observed, the process of reconfiguration of the self-system to be a researcher is not automatic. It requires intentional actions that offer authentic formative experiences to promote the emergence of those I-positions.

Besides, self-restructuring is possible because a generative dialogical process takes place that makes this exchange possible, thanks to the use of different methods, whose contribution was consistently pointed out by the participants.

While all methods were considered significant, role-playing was the most valued. It effectively allowed not only generative dialogue but also an authentic positioning, mobilizing conceptions, feelings and strategies, as well as developing future skills. It coincides with what has been verified in previous studies (Monereo et al., 2013) which indicate that experiential methods (dramatizations, analysis of critical incidents, JP) contribute significantly to promoting identity changes.

Although the consistency of our results regarding the contribution of the methods used, to change the I-positions, a limitation of our study is the lack of information on the specific contribution of each method to the different aspects

of the I-positioning process. Some methods were considered richer for stronger motivation, engagement, identification with the researcher I-positions; however, further studies are needed to delve into these aspects.

Another limitation of our study is the lack of consideration of the context of use of the different methods on the I-positions emergence.

Moreover, probably the generation of new I-positions has been especially favoured by a combination of several methods rather than from a specific one. New studies should go further by establishing the connections between them and exploring different formats of use.

However, the study contributes to a better understanding of the micro-processes of changing and developing I-positions to become a researcher and to provide different valuable educational devices to improve junior researchers' formation.

REFERENCES

Akkerman, Sanne & Meijer, Paulien. (2010). A dialogical approach to conceptualizing teacher identity. *Teaching and Teacher Education*, *30*(2), 308-319. https://doi.org/10.1016/j.tate.2010.08.013

Batory, Anna; Bąk, Waclaw; Oleś, Piotr K. & Puchalska-Wasyl, Malgorzata. (2010). The Dialogical Self: Research and Applications. *Psychology of Language and Communication*, *14*(1), 45-59. https://doi.org/10.2478/v10057-010-0003-8

Batory, Ana María. (2015). What Self-Aspects Appear Significant When Identity Is in Danger? Motives Crucial Under Identity Threat. *Journal of Constructivist Psychology*, *28*(2), 166-180. https://doi.org/10.1080/10720537.2014.923353

Barnacle, Robyn & Mewburn, Inger. (2010). Learning Networks and the Journey of 'Becoming Doctor'. *Studies in Higher Education, 35*(4), 433-44.

Berzonsky, Michael & Kuk, Linda. (2000). Identity status, identity processing style, and the transition to university. *Journal of Adolescent Research*, *15*(1), 81-98. https://doi.org/10.1177/0743558400151005

Castelló, Monserrat; Pardo, Marta; Sala-Bubaré, Anna & Suñe-Soler, Nuria. (2017). Why do students consider dropping out of doctoral degrees? Institutional and personal factors. *Higher Education, 74,* 1053-1068. https://doi.org/10.1007/s10734-016-0106-9

Corneliussen, Hilde G., & Walker Rettberg, Jill. (2008). *Digital Culture, Play, and Identity: A World of Warcraft® Reader*. *Identity*. Cambridge, Massachusetts, London, Inglaterra: MIT Press

Creswell, John; Plano Clark, Vickie; Gutmann, Michelle & Hanson, William (2003). Advanced Mixed Methods research designs. En Abbas Tashakkori & Charles Teddlie (Eds.), *Handbook of Mixed Methods in social and behavioral research* (pp. 209-240). Thousand Oaks, CA: Sage.

Flick, Uwe. (2009). *An Introduction To Qualitative Research*. London UK: Sage Publications. https://doi.org/978-1-84787-323-1

Gunnlaugson, Olen. (2006). Generative Dialogue as a Transformative Learning Practice in Adult and Higher Education Settings. *Journal of Adult and Continuing Education*, *12*(1), 2-19. https://doi.org/10.7227/jace.12.1.2

Hall, Leigh A. & Burns, Leslie. (2009). Identity Development and Mentoring in Doctoral Education. *Harvard Educational Review, 79*(1), 49-70.

Hancock, Sally & Walsh, Elaine. (2014). Beyond knowledge and skills: rethinking the development of professional identity during the STEM doctorate. *Studies in Higher Education*, *41*(1), 37-50. https://doi.org/10.1080/03075079.2014.915301

Hermans, Hubert. (2003). *The Construction and Reconstruction of a Dialogical Self*. *Journal of Constructivist Psychology* ,*16*(2), 89-130. https://doi.org/10.1080/10720530390117902

Hermans, Hubert. (2018). *Society in the self: A theory of identity in democracy. Society in the Self: A Theory of Identity in Democracy*. London UK: Oxford University Press. https://doi.org/10.1093/oso/9780190687793.001.0001

Hermans, Hubert & Hermans-Konopka, Agnieszka. (2010). *Dialogical self theory: Positioning and counter-positioning in a globalizing society. Dialogical Self Theory: Positioning and Counter-Positioning in a Globalizing Society*. Cambridge UK: Cambridge University Press. https://doi.org/10.1017/CBO9780511712142

Hermans, Hubert & Kempen, Harry. (1995). Body, Mind and Culture: The Dialogical Nature of Mediated Action. *Culture & Psychology*, *1*(1), 103-114. https://doi.org/10.1177/1354067X9511007

Hunter, Anne-Barrie; Laursen, Sandra, & Seymour, Elaine. (2007). Becoming a scientist: The role of undergraduate research in students' cognitive, personal, and professional development. *Science Education*, *91*(1),36-74. https://doi.org/10.1002/sce.20173

Hyun, Jenny; Quinn, Brian; Madon, Temina & Lustig, Steve. (2006). Graduate Student Mental Health: Needs Assessment and Utilization of Counseling Services. *Journal of College Student Development*, *47*(3), 247-266. https://doi.org/10.1353/csd.2006.0030

Kashima, Emiko & Loh, Evelyn. (2006). International students' acculturation: Effects of international, conational, and local ties and need for closure. *International Journal of Intercultural Relations, 30*(4), 471-485. https://doi.org/10.1016/j.ijintrel.2005.12.003

Kiley, Margaret & Wisker, Gina. (2009). Threshold concepts in research education and evidence of threshold crossing. *Higher Education Research & Development, 28*(4), 431-441. https://doi.org/10.1080/07294360903067930

LaPointe, Kirsi (2010). Narrating career, positioning identity: Career identity as a narrative practice. *Journal of Vocational Behavior*, *77*(1), 1-9. https://doi.org/10.1016/j.jvb.2010.04.003

Ligorio, Beatrice. (2010). Dialogical relationship between identity and learning. *Culture and Psychology*, *16*(1), 93-107. https://doi.org/10.1177/1354067X09353206

Linell, Per & Markovä, Ivana. (1993). Acts in Discourse: From Monological Speech Acts to Dialogical Inter-Acts. *Journal for the Theory of Social Behaviour*, *23*(2), 173-195. https://doi.org/10.1111/j.1468-5914.1993.tb00236.x

Lowe, Roger. (2005). Structured methods and striking moments: Using question sequences in "living" ways. *Family Process*, *44*(1), 65-75. https://doi.org/10.1111/j.1545-5300.2005.00042.x

Mantai, Lilia (2015): Feeling like a researcher: experiences of early doctoral students in Australia. *Studies in Higher Education, 42*(4), 636-650 http://dx.doi.org/10.1080/03075079.2015.1067603

McAlpine, Lynn. (2012). Identity-Trajectories: Doctoral Journeys from Past to Present to Future. *Australian Universities' Review, 54*(1), 38-46. https://files.eric.ed.gov/fulltext/EJ968518.pdf

McAlpine, Lynn; Amundsen, Cheryl & Turner, Gill. (2014). Identity-trajectory: Reframing early career academic experience. *British Educational Research Journal*, *40*(6), 952-969. https://doi.org/10.1002/berj.3123

McCorquodale, Lisa Lynn. (2015). Mindfulness and professional practice: a generative dialogue. *Reflective Practice, 16*(2), 230-241. https://doi.org/10.1080/14623943.2015.1005587

Mikes-Liu, Kristof; Goldfinch, Margaret; MacDonald, Chloe & Ong, Ben. (2016). Reflective Practice: An Exercise in Exploring Inner Dialogue and Vertical Polyphony. *Australian and New Zealand Journal of Family Therapy*, *37*(3), 256-272. https://doi.org/10.1002/anzf.1166

Monereo, Carles; Badia, Antoni; Bilbao, Gilda; Cerrato, María & Weise, Crista. (2009). Ser un docente estratégico. Cuando cambiar la estrategia no basta. *Cultura & Educación*, *21*(3), 237-256. https://doi.org/10.1174/113564009789052343

Monereo, Carles; Weise, Crista & Alvarez, Ibis. (2013). Cambiar la identidad docente en la universidad. Formación basada en incidents dramatizados. *Infancia y Aprendizaje*, *36*(3), 323-340. https://doi.org/10.1174/021037013807533043

Neuendorf, Kimberly (2017). *The Content Analysis Guidebook*. Los Ángeles: Sage Publications. http://lccn.loc.gov/2015044657

Parker, Rachel. (2009). A learning community approach to doctoral education in the social sciences. *Teaching in Higher Education*, *14*(1), 43-54. https://doi.org/10.1080/13562510802602533

Sala-Bubaré, Anna & Castelló, Monserratt. (2017). Exploring the relationship between doctoral students' experiences and research community positioning. *Studies in Continuing Education*, *39*(1), 16-34. https://doi.org/10.1080/0158037X.2016.1216832

Skakni, Isabelle & McAlpine, Lynn. (2017). Post-PhD researchers' experiences: an emotionally rocky road. *Studies in Graduate and Postdoctoral Education*, *8*(2), 205-219. https://doi.org/10.1108/sgpe-d-17-00026

Svein, Kyvik & Terje Bruen, Olsen (2012) The relevance of doctoral training in different labour markets, *Journal of Education and Work*, *25*(2), 205-224. https://doi.org/10.1080/13639080.2010.538376

Swann, William; Chang-Schneider, Christine & Larsen McClarty, Katie. (2007). Do people's self-views matter? Self-concept and self-esteem in everyday life. *American Psychologist*, *62*(2), 84-94. https://doi.org/10.1037/0003-066x.62.2.84

Tobin, Kenneth. (2006). Learning to teach through coteaching and cogenerative dialogue. *Teaching Education*, *17*(2), 133-142. https://doi.org/10.1080/10476210600680358

Triggs, Eric; Victor, Christian; Ross, Fiona & Axford, John (2000). Primary care-based evaluation of patient education for osteoarthritis of the knee. *Methods of Information in Medicine*, *39*(3), 241-5.

Turkle, Sherry. (1994). Constructions and Reconstructions of Self in Virtual Reality: Playing in the MUDs. *Mind, Culture, and Activity*, *1*(3), 158-167. https://doi.org/10.1080/10749039409524667

Vähäsantanen, Katja; Hökkä, Päivi; Paloniemi, Susanna; Herranen, Sanna & Eteläpelto, Anneli. (2017). Professional learning and agency in an identity coaching programme. *Professional Development in Education*, *43*(4), 514-536 https://doi.org/10.1080/19415257.2016.1231131

Vignoles, Vivian; Manzi, Claudia; Regalia, Camillo; Jemmolo, Simone & Scabini, Eugenia. (2008). Identity motives underlying desired and feared possible future selves. *Journal of Personality*, *76*(5), 1165-1200. https://doi.org/10.1111/j.1467-6494.2008.00518.x

Wenger, Etienne. (1999). *Communities of practice: Learning, meaning, and Identity. Learning in doing*. UK: Cambridge University Press. https://doi.org/10.2277/0521663636

Ylijoki, Oili-Helena & Ursin, Jani. (2013). The construction of academic identity in the changes of Finnish higher education. *Studies in Higher Education*, *38*(8),1135-1149. https://doi.org/10.1080/03075079.2013.833036

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