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Research Paper

Role of Action Research in ESP Teachers' Professional Identity Development

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Abstract

Although the last decade has seen a growing interest in language teacher identity, the investigation of ESP teachers' professional identity has remained practically unexplored. The present study examined the role of action research in ESP teachers' professional identity development. We collected interactionally oriented narratives produced by 3 ESP teachers and used the 3A-LTIF framework (i.e., affiliation, attachment, and autonomy) of language teacher identity (Werbińska 2016) to analyze the narratives. Findings showed that action research has a constructive role in ESP teachers' professional identity development. The ESP teachers affiliated themselves more as ESP teacher-researchers, developed their attachment to do more action research, and seemed to be more self-reliant on conducting their future research projects. Also, the findings revealed that ESP teachers' action research programs need to consider the specificity of the ESP context. Thus, it can be concluded that action research may potentially serve as a venue to change the ESP teachers' selves and, consequently, develop their professional identities.

Keywords: Action Research; ESP Teachers; Narrative Inquiry; Professional Identity

1. Introduction

Language teacher identity development has recently become a popular topic in teacher professional development research (Bell, 2002; Chang, 2017; Hamilton & Clandinin, 2011; Nguyen, 2017; Rashidi & Meihami, 2017). The reason behind the interests in doing teacher identity research is the belief that “to understand language teaching and learning, we need to understand teachers: the professional, cultural, political, and individual identities which they claim or which are assigned to them” (Varghese, Morgan, Johnston, & Johnson, 2005, p. 22). The professional identity of language teachers is part of their overall identity, and through a better understanding of their identity, teachers can be better supported to develop their professional identity (Chang, 2017).

English for specific purposes (ESP) teachers' professional identity has witnessed educational changes resulting from different reasons, one of which is the emergence of English as a scientific lingua franca (Moattarian & Tahririan, 2014). As Tsou and Chen (2014) point out, ESP teachers may encounter identity development struggles due to, for example, their topical knowledge inadequacy (Tao & Gao, 2017). They need to acquire new knowledge (Tao & Gao, 2018), and developing ESP professional identity may be of utmost importance to enable ESP teachers to solve problems that happen in the ESP classroom.

One way to develop ESP teachers' professional identity is to involve them in action research (McNiff, 2013; Yuan & Burns, 2016), which is thought to provide a venue for developing teachers' research skills and professional learning. Action research has been viewed as an essential part of teachers' educational programs (Burns, 2009; Yuan & Burns, 2016). Goodnough (2010) claims that it could enhance teachers' potentiality to promote their professional learning. Yuan and Burns (2016, p. 2) state that teachers “can position themselves strategically within the complex webs of interpersonal and professional relationships, change and improve different aspects of their day-to-day practices, and construct their professional identities as agentive and reflective professionals.” Davies (2013) argues that teachers' professional identity development may develop their ability to cultivate new and effective ways to enhance their students'



learning. Yet, true as these opinions are, the role of doing action research in the development of ESP teachers' professional identity has been hardly investigated.

In this study, the ESP teachers' professional identity development through action research was approached by addressing the teachers' professional development constructs, which are the components of a 3A Language Teacher Identity Framework (3A-LTIF), proposed by Werbińska (2016, 2017a, 2017b), in which the three 'As' stand, respectively, for affiliation, attachment, and autonomy. In the framework, affiliation refers to an individual's willingness to become a language teacher and join the language teaching community, attachment is related to a language teacher's ideology about language teaching and teaching community, whereas autonomy, apart from embracing teachers' agentic, reflective, and resilient powers, refers to teachers' self-dependency and capacity to accept responsibility for educational choices. As the primary purpose of the current study is to investigate the role of doing action research in ESP teachers' professional identity development, the three constituents of 3A-LTIF have found new functions. Accordingly, affiliation refers to ESP teachers' willingness to do action research in the ESP context; attachment is linked with ESP teachers' ideology and beliefs about action research, whereas autonomy is related to ESP teachers' capacity to do action research and their responsibility to select educational decisions based on the teachers' reflection.

University students who are studying in different fields in Iran should pass ESP courses. The main aim of such courses is to help students to develop reading skills to use English resources. Focusing on reading, most ESP teachers resort to translating English texts into Persian. Previous studies (e.g., Afshar & Movassagh, 2016; Atai & Nazari, 2011; Esfandiari, 2015; Shahini & Riazi, 2001) indicate that the language needs of ESP students have not been successfully addressed in the ESP courses. This frequently results in ESP students' inability to use English in specific contexts and discourses, such as writing and publishing papers, presenting in conferences, reading domain-specific materials, or listening to lectures (Sarani, Khoshsima, & Izadi, 2017). In accordance with this rationale, our present project focused on developing ESP teachers' professional identity by doing action research in order to combat these problems. Hence, the primary purpose of this qualitative study was to examine the role of doing action research in ESP teachers' professional identity development.

2. Literature Review

2.1. Teachers' Professional Identity and Action Research

Over the past decade, addressing teachers' professional identity has been subject to considerable research investigations. Psychological, sociological, and linguistic dimensions of identity, and the fundamental distinctions within it, as well as several investigative framework tools, clearly show that identity is multidimensional, all the time in the process of being unraveled and, despite efforts, there is no one-agreed-definition of what it means exactly (Trent, 2015, p. 45). Professional identity escapes straightforward and unambiguous definitions, as the profession of teaching is not unidirectional (Richardson & Watt, 2018). Flores and Day (2006) state that professional identity development is an ongoing process that helps teachers develop through their experiences. In a similar vein, Oslen and Buchanan (2017) view professional identity as "an active process of phenomenological self-construction within the flow of daily activities, past and present" (p. 14). The critical point is that teachers' professional identity is "influenced by contextual factors outside of the teachers themselves and their preservice education" (Miller, 2009, p. 175). This is perhaps why there exist challenges between the teacher-self and the conditions of the teaching profession. As Britzman (2003) points out, one of the teachers' struggles in professional identity development is the struggle for a social interaction voice. Hence, one assumption can be that teachers' reflections on their environment while doing action research may impact their professional identity development.

Action research is a type of research conducted by teachers "to reflect on their own practice and the situation in which they are practicing ... [and] to understand and improve their practice and the situation in which they are practicing" (Ax, Ponte, & Brouwer, 2008, p. 56), may contribute to teachers' "independent professionalism" (Leung, 2009, p. 50). By doing action research, teachers will develop their teaching practices reflexively and systematically (Goodnough, 2010; Yuan & Burns, 2016). Nevertheless, teachers, especially novice teachers, abstain from doing action research and tend to express their objections such as "insufficient time and resources, lack of research knowledge and skills, and the rigid school structure and curriculum" (Yuan & Burns, 2016, p. 2). These challenges may have detrimental effects on teachers' self-dependence. Therefore, testing the assumption that doing action research generates teachers' reflection which, in

turn, may affect their professional identity development, appears to be crucial, especially when considering the low number of action research projects conducted by ESP teachers.

Examining ESP teachers' professional identity development is important due to the differences between teaching ESP and English for general purposes (EGP). According to Hutchinson and Waters (1987, p. 19), "ESP is an approach to language teaching in which all decisions as to content and method are based on the learner's reason for learning." Moreover, as Chang (2017, p. 72) asserts, when a program's purpose is ESP instruction, the following three factors are critical: "the learners, the language chosen, and the learning context." Because of ESP instruction's specific nature, ESP teachers need to take these factors into account. They should be reflexive enough to address absolute and variable characteristics (Dudley-Evans & St. John, 1998) of ESP instruction. In a word, they need to systematically reflect on their teaching profession to face new situations and challenges. This is how they may develop their professional identity, and their action research projects may enhance their competencies to address ESP instruction's challenges.

2.2. 3A-LTIF Framework: Affiliation, Attachment, and Autonomy

Werbińska's (2016; 2017a, 2017b) 3A-LTIF framework of identity has served as a point of reference in this project. Although it is not easy to provide one concise definition of teacher identity, there is sufficient agreement about the core of identity for continued research to take place. This once encouraged Werbińska (2016) to look for overlaps among the different terms in the models available at the time of its creation and use them to build a comprehensive enough investigative tool for exploring language teacher identity issues (see Figure 1):

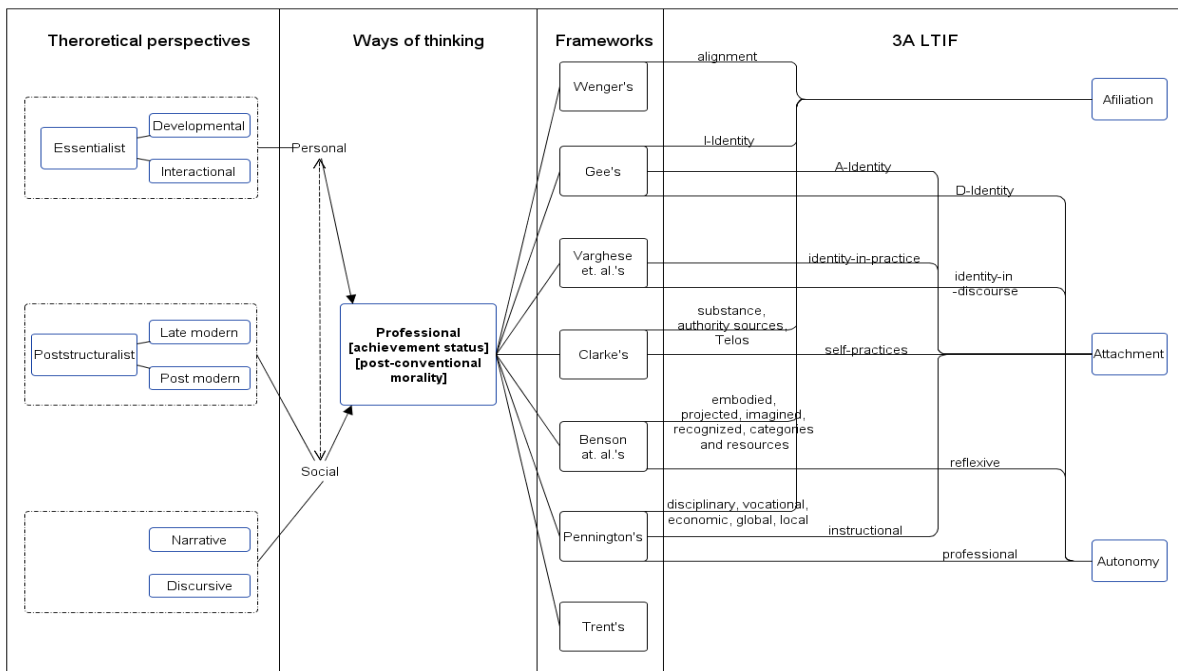


Figure 1. Creation of 3A-LTIF (Werbińska, 2017a, p. 41)

The model originates with Erikson's (Witkowski, 2004) developmental construct and Mead's (1934) interactional construct, both of which are placed in Figure 1 within the personal concept of identity as it has maturational underpinnings and a stable nature that characterizes all individuals alike. By contrast, poststructuralist, narrative and discursive approaches (theoretical perspectives) are assigned to the social identity concept because they primarily depend on the context. Unlike essentialist identity approaches, poststructuralist, narrative, and discursive approaches are multifarious, hybrid, changeable, and so heavily context-bound that they produce unique and unpredictable outcomes. Yet, neither personal nor social identity are ever pure constructs. These two kinds of identities feed on each other, which is illustrated by the broken line between them. They both pass along professional identity which embraces identity achievement, one of four Marcia's (2002) identity statuses, and postconventional development, one of three Kohlberg's (Kwaśnica, 2003) moral development stages (ways of thinking). Only these two find their place in Figure 1, as both (identity achievement and postconventional development) constitute the highest status or stage of professional

development, and possessing them might prove the attainment of the highest development of professional identity. Although reaching this point (achievement status, postconventional morality) would be a desirable goal for all those who would like to reach the highest rungs on the professional career ladder, it is not easy to state what this point exactly means. Therefore, scrutinizing identity through seven different theoretical instruments (frameworks) might be successfully used in examining professional identity and consequently result in obtaining a set of useful language teacher identity tools.

The model basically draws on seven models of identity and makes use of the categories offered by Wenger's (1998) communities of practice (engagement, imagination, alignment), Gee's (2001) identities (N-identities, I-identities, D-identities, A-identities), Varghese, Morgan, Johnston, and Johnson's (2005) views on identity (identity-in-practice, identity-in-discourse), Clarke's (2009) diagram for identity work (the substance of ethics, the authoritative sources of ethics, the self-practices), Benson, Barkhuizen, Bodycott, and Brown's (2013) facets of identity (embodied, reflexive, projected, recognized, imagined, identity categories, and resources), Pennington's (2015) frames of teacher identity (instructional, disciplinary, professional, vocational, economic and global, local, sociocultural), and, partially, Trent's (2015) framework (identity-in-practice, identity-in-discourse, intrapersonal, interpersonal, institutional).

On closer analysis, many constituent parts of the seven identity models are fairly similar in meaning. Although it is debatable which larger concept they best resemble, most can be successfully reduced to three categories that are helpful for investigating teacher professional identity. Hence, as Figure 1 depicts, alignment, I-identity, substance of teacher identity, authority sources, telos, embodied, projected, imagined, recognized, identity categories and resources disciplinary, vocational, economic, global, local can refer, more than other constituents of the frameworks, to the willingness to become a teacher, to associations with the language teacher profession, to identifications with socially assumed roles and to obligations of the teacher. This category is called the affiliation category. The second group, which contains A-identity, identity-in-practice, self-practices, and instructional, somewhat refers to displaying ways of doing, thinking and talking about things, and preferences for teaching certain aspects rather than others more comfortably, important, or for different reasons attractive for a teacher. In the model, this category is called attachment. D-identity, identity-in-discourse, reflexive, professional, in turn, provide space for doing things on one's initiative (D-identity), the employment of critical reflexivity (identity-in-discourse and reflexive), and teacher interpretations (professional). As they make it possible to exercise the teachers' agentic skills concerning their profession, these elements have been concentrated into the category of autonomy.

Therefore, these three qualities (i.e., affiliation, attachment, and autonomy) can be seen as three key constituents to the teacher professional identity core. Bearing the first component and ESP teachers in mind, it is essential for them to be affiliated as domain-specific teachers who have the basic knowledge of that domain. It will also be of importance for ESP teachers to affiliate themselves as ESP teacher-researchers. Overall, all the practices helping ESP teachers develop their professional identity as ESP teachers will be categorized under the affiliation category.

The second constituent, attachment, is how language teachers attach themselves to ideologies and opinions about approaches, methods, techniques, and personal teaching preferences. Yet, as ESP teachers' identity is sought over doing action research, in the current study, other meanings will be attached to the attachment category, such as the change of the ESP teachers' beliefs during and after conducting action research, or how they attach themselves to being language researchers.

Finally, the autonomy component of the 3A-LTIF stands for teachers' purposeful involvement in what takes place in the educational reality around them. In other words, it is believed that reflection, agency and resilience enable teachers to manage the intellectual and emotional demands of the job. In the present study, autonomy can be understood as how ESP teachers use reflection to address their classroom problems in their action research projects, or how they use their action research results in their classrooms when considering their professional identity development. It is claimed that by developing "their agentic, reflexive and resilient skills" (Werbińska, 2017b, p. 106), ESP teachers' professional identity will simultaneously develop.

2.3. ESP Teachers in Iranian Universities

ESP teachers at Iranian universities can be dichotomized into two groups: The first group of ESP teachers are M.A. and Ph.D. graduate students who teach EFL. These teachers have learned how to teach EFL and passed several introductory courses in ESP, after which they understand what ESP is and what ESP teaching is based upon. They are not

prepared to teach ESP to students of a specific domain like accounting, although they teach ESP to students of different fields, such as psychology, history, civil engineering, and the like. To put it simply, these teachers do not have the content knowledge of specific domains.

The second group of the ESP teachers at Iranian universities are domain-specific teachers whose English proficiency is acceptable. These teachers, whose primary teaching responsibility is to teach the content knowledge of a specific field to the students of that field, also teach ESP to the field students. This is thanks to their acceptable English proficiency that was gained during a long period of studying content knowledge in English. Yet, unlike the first group of ESP teachers, the teachers in the second group do not know the methodology of teaching a foreign language. Most of them neither know what ESP is, nor how to address ESP students' language needs.

3. Methodology

3.1. Participants

The ESP participants in this study belonged to the first group of ESP teachers in Iran. They were chosen because teachers from the first group are primarily responsible for teaching ESP at Iranian universities. There were two female participants (Fateme and Sana) and one male (Amir). The pseudonyms were used to protect the participants' anonymity. All the participants held M.A. in TEFL, and two were Ph.D. candidates. Fateme had taught ESP for 2 years, Sana for 4, and Amir for 3 years (see Table 1). It can be noted that all of them had less than 5 years of teaching experience, so they could be considered inexperienced ESP teachers (Gatbonton, 2008). Throughout one calendar year (from March 2019 to March 2020), the teachers participated in action research workshops and conducted their action research projects. The first author was the workshop instructor and their research consultant in the study.

3.2. Action Research Program

The three ESP teachers participated in an action research program designed to develop their professional identities as English teachers. The action research program based on linking theory and practice, practicing and developing action research, and making sense of data and findings was informed by the principles proposed by McNiff (2013). The program's purpose was to help the ESP teachers conduct their action research to track their teaching practices and monitor students' learning. They were all instructed on how to use the results of their action research to change their teaching practice. The ESP teachers started to problematize their ESP teaching and practically did action plans from the time they had entered the program until the end of it, which was about 1 year later. It should be noted that the program managers helped the teachers with their research problems. The program included three main parts: action research workshops, negotiation sessions, and individual assistance, which are explained now.

3.2.1. Action Research Workshops

During the 12 months, 8 action research workshops were held for the ESP teachers so as to develop the teachers' research knowledge on how to bridge theory and practice in doing action research in the ESP classroom. To that end, the workshops helped the teachers learn about research approaches (qualitative, quantitative, mixed-methods) in SLA, collecting and analyzing data (Ary et al., 2014), and, above all, reflecting, planning, acting, and observing.

3.2.2. Negotiation Sessions

Once a month, from the start of the program until its end, there was a negotiation session between the ESP teachers and the study's lead researcher. In the negotiation sessions, the ESP teachers mainly talked about their problems related to conducting action research in their classes. They also spoke about their experiences of using their study results in the hope of improving their teaching practice. Other discussions in these sessions concerned publishing their action research results, participating in conferences, and holding workshops for other teachers. The negotiation session was necessary because the lead researcher could follow the teachers' professional development and compare what they said in the negotiation sessions with what they wrote in their narratives.

3.2.3. Individual Assistance

In addition to the negotiation session held once a month, the lead researcher was available for the ESP teachers to ask and consult their research problems while doing action research should such a need arise. Whenever the participants had a research problem with whatever step of action research, they could consult it with the lead researcher.

3.3. Data Sources

The primary data sources in the current study were ESP teachers' narratives and ESP teachers' journals. The ESP teachers' action research reports were used as an additional source of data.

Depending on how narrators see the stories and interactions, there are two types of narrative or data source approaches: biographically and interactionally oriented approaches (De Fina, 2015). While the biographically oriented approach analyzes the narratives at a specific point in time, the interactionally oriented approach does it in a process. In the present study, the ESP teachers wrote their narratives interactionally at the beginning, in the middle, and at the end of the program. Analogously, the ESP teachers' experiences were expressed throughout the whole action research process: at the beginning, middle, and end of the program. It should be noted that the participants' narratives were written or produced orally in English. This included the participants' sending their oral narratives via social media, such as WhatsApp. To help the participants produce appropriate narratives, Riessman's (2008) narrative model was introduced. Accordingly, the participants knew that their narratives should encompass an abstract, introduction, evaluation, resolution, and coda. As a whole, due to the ethical nature of narrative inquiry in producing knowledge in research (Mirzaee & Aliakbari, 2017), we believed that collecting and analyzing interactionally oriented narratives would help us to track down the development of the ESP teachers' professional identity during their engagement with action research.

Furthermore, the ESP teachers who participated in the current study were asked to keep a journal to register what they had accomplished while conducting their action research, for example, the books they were reading, the academic journals they had used, or the conferences they had followed, and so on. The teaching journals helped the lead researcher adopt a more comprehensive view of the narratives authored by the teachers. Nevertheless, the primary source of the study data was the ESP teachers' narratives, while their teaching journals and action research reports were supplementary sources of data to help the researcher analyze the narratives. It is also important to note that the ESP teachers were asked to produce their narratives in English.

At the beginning of the program, the lead researcher tried to obtain the participating ESP teachers' research commitments. This was done with a view to comparing their current research commitments with what they might have at the end of the program once they have conducted their action research. The ESP teachers' responses to these questions, referring, in a way, to how they considered doing action research in their ESP context, and whether or not they accepted their responsibility as ESP teachers as well as ESP teacher-researchers are provided in the last column of Table 1.

Table 1. *ESP Teachers' Research Commitments at the Start of the Program*

Participant's Pseudonym	Gender	Academic Degree	Research Commitment
Fateme	Female	M.A. in TEFL	To some limited extents, willing to become an ESP teacher-researcher
Sana	Female	Ph.D. in TEFL	Willing to become an ESP teacher-researcher
Amir	Male	Ph.D. in TEFL	Not willing to be an ESP teacher-researcher

3.4. Data Analysis

The narratives authored by the three ESP teachers were analyzed based on the 3A-LTIF framework. The lead researcher started to read the narratives multiple times, comment on them, reiterate the analysis, and reread the narratives after reading the teachers' research journals and action research reports. When this process was completed, the lead researcher tried to categorize the experiences and the ESP teachers' stories into three categories: affiliation, attachment, and autonomy. The lead researcher tried to make meanings out of the categorized parts in the next stage to understand how the ESP teachers' professional identity altered during the program. Then, the new themes under each category (affiliation, attachment, and autonomy) were produced to clarify the interrelationship between doing action research and ESP teachers' professional identity development.

It should be stated that the rigor of the study was also taken into account. Credibility (corresponding to internal validity in quantitative research) was enhanced by structural corroboration, which uses multiple data (Eisner, 1998). In the current study, various sources of the data were used: narratives, journals, reports. Through doing member checking, the researcher consulted those parts of the data which were confusing. Moreover, to enhance the study's dependability (corresponding to reliability in quantitative research), the researcher asked another coder to go through the data analysis. The agreement between the two coders showed a high dependability index, as an agreement of 80% was obtained between the two coders.

4. Findings and Discussion

The findings are presented following the three constituents of the 3A-LTIF: affiliation, attachment, and autonomy. Illustrative extracts from the participants' narratives are used to support each constituent. Each constituent of the 3A-LTIF is discussed on the basis of the findings from the narratives.

4.1. Affiliation

The analysis of the narratives revealed that the ESP teachers who participated in the action research program and conducted their action research tried to affiliate themselves as ESP teacher-researchers, but with care. This may have come from their not accepting themselves as teacher-researchers in the ESP area in the first place. Such an assumption can be inferred from the participants' aim to present the results of their action research as ESP teacher-researchers. Extracts 1-3 present the voices of Fateme, Sana, and Amir in their original versions:

- Extract 1 (Fateme)

. . . needless to say that there are many problems with doing action research in the ESP classes. The point is that the main function of doing action research is a reflection on teaching that can be used in the ESP context with more advantages compared to other contexts such as EGP . . . ESP teaching needs disciplinary knowledge, and this is why action research helps a lot . . . I am preparing my action research results to be presented in the forthcoming conferences . . .

- Extract 2 (Sana)

I like to participate in the teacher conference [talking about a local conference held by the student-teachers] to talk about my experiences as an ESP teacher-researcher . . . I think we can do action research and be action researchers in the ESP classes. Still, we should know that we do not know enough content knowledge about the field, which will be detrimental . . .

- Extract 3 (Amir)

. . . I have done action research in EGP classes previously . . . I had a problem with the reflection on my teaching although I followed all the points raised in the action research program . . . Something was different in the ESP classes that hinders me from doing my action research, but I do not know what it is . . . however, I think action research is helpful in ESP context, and I like to do it in the future . . .

Two points can be extracted from this part: First, doing action research in the ESP contexts helped the ESP teachers think more about the disciplinary nature of ESP. This can be illustrated by Fateme's words in Extract 1 who claims, "ESP teaching needs disciplinary knowledge," and Sana's words in Extract 2 when she says, "we do not know enough content knowledge." This indicates that although the two ESP teachers affiliate themselves as ESP teacher-researchers, they are worried about the field's disciplinary nature, of which they have little knowledge. This issue is not new, as Spack (1988) stated that language teachers, especially EGP teachers, do not have the necessary confidence and expertise to teach subject matter. It seems that language teacher educators, in general, and ESP teacher educators, in particular, need to focus on the specificity of the ESP. According to Hyland (2002, p. 385), specificity implies that "ESP must involve teaching the literacy skills which are appropriate to the purposes and understandings of particular academic and professional communities." Neither in the action research program in this study nor the entire TEFL curriculum covered at Iranian universities are the student-teachers aware of the fact that ESP context involves specificity in terms of texts, discourse, and literacy. Given that, ESP teachers, without any background in subject matter, start teaching ESP and often become frustrated. It can be stressed that it is not due to lack of content knowledge or their ability to do action

research in ESP classes that the ESP teachers in the current study spared doubt. It is rather the specificity of disciplinary texts, discourse, and literacy which is ignored.

The second point is the importance of helping interdisciplinary action research in the ESP context. This is because the ESP profession, as stated earlier, has its specificity, which asks for interdisciplinary action research. Bloor and Bloor (1986) argue that ESP encompasses skills and forms that are transferable across different contexts, calling this the common core hypothesis. By rethinking specificity in ESP contexts, the common core hypothesis can be found at the level where there is a commonality between ESP and EGP. Therefore, a common specific literacy core for doing action research in the ESP context developed for the ESP teachers may be needed. In other words, ESP teachers need to revisit the specificity of doing interdisciplinary action research in the ESP context, which could be applied in language teacher education programs.

In brief, the results of narrative analyses and teachers' research journals show that participating in the action research program and conducting action research during their ESP classes have altered the research commitments of the ESP teachers. Therefore, it can be said that they affiliate themselves as ESP teacher-researchers.

4.2. Attachment

The ESP teachers' narratives were also analyzed in terms of attachment so as to gain access to their beliefs about doing action research. The findings show that ESP teachers hold positive views and opinions about doing action research after participating in the action research program. Extracts 4-6 are addressing this component of the 3A-LTIF.

- Extract 4 (Fateme)

. . . from the reflections which I did on my teaching practices, I learned a lot . . . in the future, I will try to reflect on my practices and practice my reflections . . .

- Extract 5 (Sana)

. . . I find out that in the ESP classes, the teachers need more doing of action research compared to the general English classes . . . doing action research put me in a way to practice my everyday experiences . . . I leave some room for reflection in my lesson plan . . .

- Extract 6 (Amir)

. . . the process that I went through while doing action research in my ESP classes helped me bridge the gap between theories I know about teaching ESP and the real teaching practice . . .

The ESP teachers' engagement in doing action research in their classes helped them become involved in negotiation (Goodnough, 2010) and problematize issues in their classes. The negotiation process was possible when the teachers' attempted to reflect upon their problems in the courses mediated through action research. This could help them change their teaching, adopt more of a risk-taker's role and design their teaching methodology (Goodnough, 2010). It can also be stated that through involving the ESP teachers in the cycles of conducting action research—planning, acting, observing, and reflecting—they obtained “knowledge of practice” (Cochran-Smith & Lytle, 1999, p. 273), based on taking a critical perspective on the teaching profession. Because the whole process was mediated by doing action research, it can be inferred that the attachment of the ESP teachers to do action research has developed.

Developing the ESP teachers' beliefs on doing action research may also be discussed in the context of an ecological perspective, understood as an “individual-environment interaction” process (Barab & Roth, 2006, p. 3). Hence, when the ESP teachers engage in doing action research, their current professional identity may be influenced by the relationships which may embrace the ESP context, the action research program, the conferences, and the like. Consequently, teachers could coconstruct and (re)narrate their professional identities (Goodnough, 2010). The coconstruction of professional identities is made by (re)negotiating knowledge about the ESP environment, which may happen between an ESP teacher and a book, a paper, or another teacher. The whole process seemed to help the ESP teachers participating in the study to reconsider their ideology about researching and teaching in the ESP context. In a nutshell, the ESP teachers have changed their ideology about conducting action research in the ESP context after participating in the program and doing their action research.

4.3. Autonomy

The results indicate that the ESP teachers' self-dependency was enhanced because they participated in the program and conducted their action research studies. In particular, the analysis of the ESP teachers' narratives shows that, like in the case of the first two 3A-LTIF's components, their autonomy was sufficiently developed to make their action research projects possible in the future. Extracts 7-9 are illustrative of this point:

- Extract 7 (Fateme)

. . . although the action research program did not teach us to do action research in the ESP context, I think I have figured out the action research process, including observation, reflection, and practice, to do action research in the future to make my classes even better . . .

- Extract 8 (Sana)

. . . I think that doing action research and involving in it pushes me to do more of it . . . it is an effective process not just for my classes but also for giving me the competence to do it . . .

- Extract 9 (Amir)

. . . my experiences while doing action research are valuable for me, so I try to continue to have such experiences in my classes . . .

The development of ESP teachers' autonomy can be discussed in terms of the interrelationship between teacher autonomy and action research. According to Benson (2001), teacher autonomy is a concept, which includes professional freedom and self-directed professional development. Given the importance of professional freedom in doing action research, it can be stated that by doing it, the ESP teachers exercised professional freedom, as they were free on what to reflect upon. Moreover, as Smyth (1989) declares, teacher autonomy concentrates on critical reflection. That said, it can be argued that conducting action research, especially the process the ESP teachers followed, made the ESP teachers critically reflecting upon their teaching profession in the ESP context. In such a way, their autonomy development is the result.

Doing action research provides an active role for the teachers to produce knowledge (Mello, Dutra, & Jorge, 2008). Because the teachers are involved in active research-based practices, such as identifying a problem, reflecting, planning, and acting, they are engaged in building new knowledge and implementing it in their classes. The whole process might help them develop their autonomy in doing further classroom research in the future. What is more, all these practices are directly associated with teachers' development of professional identity.

5. Conclusion and Implications

This study investigated the role of action research in the ESP teachers' professional identity development. The findings show that conducting action research has a constructive role in developing ESP teachers' professional identity. Thus, it can be concluded that action research may potentially serve as a venue to change the self (Goodnough, 2010). This idea may be approached through the concept of transformation, which implies that action research adds other roles to language teachers, making them teachers, consultants, syllabus designers (Cochran-Smith & Lytle, 1999). Acting upon such new roles transforms the teachers into becoming teacher-researchers, which could, further, develop the ESP teachers' professional identity in this study.

It is also of significance that through doing action research, the teachers become "independent professionals," (Leung, 2009, p. 50) who are involved in creating new knowledge, rather than the mere transmitting of what they already know (Leung, 2009). This is possible when teachers create communities of practice (Wenger, 1998) bent on conducting their action research and thus developing their professional identities. The ESP teachers who participated in the current study had already created such a community of practice by joining the action research program. Therefore, it can also be concluded that, in a way, belonging to the community of practice has developed the ESP teachers' professional identity.

The findings reveal that action research programs aimed at enhancing the professional identity of ESP teachers should consider the specific nature of an ESP context (Hyland, 2002). It was found out that although the ESP teachers need to understand the core of research concepts, they should be deliberately instructed on the specific research concepts

they might need in the ESP context. Care should be taken while interpreting particular concepts of the ESP context, as by stating specific concepts, the specific knowledge of the ESP contexts may not be meant. This could imply the consideration of the students' purpose of learning English, the skills that ESP learners need, or their ESP materials. If such aspects are added to action research programs, as the current study results transpire, the ESP teachers may become less confused by the differences in the ESP and EGP contexts.

As a pedagogical implication based on the findings of the current study, it can be stated that the language teacher educators who are responsible for designing ESP teacher education programs may benefit from action research as a tool to develop ESP teachers toward the "transformative intellectual" (Johnson, 2006, p. 235). Action research for the ESP teachers may be a "transformative intellectual" tool that helps them "make experience educative or as resources for teaching" (Tao & Gao, 2018, p. 11). In line with what has already been stated, the ESP teachers' action research may help them reflect on how to deliver the content knowledge of a specific domain in the most appropriate way.

Apart from addressing the issue of ESP teachers' professional identity *vis a vis* action research, there are several other strengths of the study that should be emphasized here: (1) a longitudinal nature of the study which lasted for one calendar year; (2) multiple data collection tools which were employed, thus providing triangulation, or structural corroboration of the data; (3) the collection of data during a university's scheduled program, which enhances the ecological validity of the project. Having said that, the study is not free of some weaknesses, two of which should be addressed. First, the study investigated only the participants from the first group of ESP teachers in Iran that is those who are formally prepared for teaching EFL rather than ESP. A fuller picture of ESP teachers in Iran would have been obtained if an analogous number of ESP teachers from the second group had been investigated as well, that is those teachers who teach ESP, but are not university graduates in English Studies. Then, the effect of action research on their (re)formation of professional identity may have been better grasped. Second, all the data were collected by one of the researchers, who at the same time was an instructor of the investigated ESP teachers' action research program. Although it may not have been the case, this fact may have impacted the participants' candidness in their responses to some extent and, in turn, negatively influenced the truthfulness of the data.

As studies on ESP teachers' professional identity, if compared to language teacher professional identity research, in general, are still in its infancy, it is clearly premature to offer concrete pedagogical guidelines, and the results of this study should be treated with circumspection. Nevertheless, it is possible to suggest that ESP teacher education programs take into account the activities that help ESP teachers experience their affiliation, attachment, and autonomy across different disciplinary contexts. In other words, the ESP teachers' professional development can be addressed through these three 3A-LTIF's components of teachers' professional identity (re)shaping. If ESP teacher education programs prepare the contexts for ESP teachers, they can simultaneously develop their professional identities. That is to say, holding ESP conferences, publishing ESP-related journals, and running in-service action research programs for ESP teachers can address their affiliation, attachment, autonomy, and transform their professional identity.

Conflict of Interest

The authors declare that there is no conflict of interest.

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