The Ecological Impact of Action Research on Language Teacher Development: A Review of the Literature

Action Research is now frequently practiced and promoted as a form of continuing professional development for language teachers, with recent studies reporting many benefits for those who engage in Action Research. Less frequently reported, but equally as important for sustainability, are the wider impacts of Action Research engagement on teachers' colleagues, schools and educational sectors. However, to date there has been no cohesive or holistic review of research on the various forms of development that language teacher Action Research can initiate. This conceptual paper adopts an ecological perspective following van Lier (2004, 2008, 2011) as a holistic framework for analysing the dimensions of impact of Action Research. An ecological approach studies humans in terms of their relations with their environment, and analyses the affordances and constraints that interact with human development. Accordingly, this paper reviews recent literature on the impact of Action Research in terms of three levels of ecology: micro (individual), meso (school) and macro (wider educational sector) levels. The paper then advances current understandings about why and how Action Research initiates development by analysing the experiences reported, within the studies reviewed, that are unique to teacher Action Research.

Introduction

Within the field of language teaching, Action Research (AR) is now frequently practiced and promoted as a form of continuing professional development, with recent studies reporting many benefits for those who engage in AR. Although AR has a long history in education, it is

only since the 1980s that it has become popular in language teaching (Burns 2005), and only in the last 15 years that researchers have been exploring the possible benefits of language teacher AR engagement, as this paper will illuminate. To date, there has been no cohesive or holistic review of research on the various forms of development that language teacher AR can initiate; therefore, this paper contributes to the field of second language teacher education, in particular the areas of language teacher AR and teacher research more generally, by conducting such a review. The focus of this article is language teaching, and specifically English language teaching (ELT), although I also draw on literature from related areas such as foreign language teaching and general education where necessary to provide further support for certain emerging themes. The review is conducted from an ecological lens, following the work of van Lier (2004, 2008, 2011) in particular, as a holistic framework for analysing the dimensions of impact of AR. An ecological perspective acknowledges that while AR is likely to have many impacts on the individual teachers who engage in the activity, it is important to explore the experiences of AR more holistically, incorporating an analysis of the wider context, in order to identify broader impacts but also broader challenges and opportunities for further development.

This conceptual paper starts by outlining the ecological perspective used as the framework for analysing the dimensions of AR impact on language teachers. Next, I describe the method used to review the relevant literature, and then present the findings in terms of the impact of language teacher AR at three key ecological levels: micro, meso and macro. Following this analysis of the literature, I then unpack some of the reasons why AR, as a particular form of teacher research, initiates the impacts described in the studies reviewed. The article aims to provide both a summary of the current state of an emerging sub-field within second language

teacher education, that of the impact of language teacher AR, and suggestions for further work that can contribute to its expansion.

An ecological perspective

An ecological approach studies humans in terms of their relations with their environment, and is grounded in ecological systems theory, especially the work in the social sciences of Bateson (1973), Gibson (1979) and Bronfenbrenner (1979). Van Lier's (2004, 2008, 2011) more recent work, along with the work of Kramsch (2002; Kramsch and Steffensen, 2008) has established ecological theory as a useful framework within the fields of second language education and applied linguistics, which now both acknowledge the need to locate and study language learning and teaching within social, cultural, political and institutional contexts. Indeed, over the last few years, ecological frameworks have been espoused in the fields of second language acquisition generally (The Douglas Fir Group 2016), as well as in areas of language teacher development such as identity (De Costa and Norton 2017), and agency (Miller and Gkonou 2018). Van Lier (2004) defines ecological theory as "a way of thinking and acting" that "assumes that humans are part of a greater natural order, or even a great living system" (3). Human development is viewed as the result of a complex set of interactions with the world, and the world under study can be perceived as a set of systems or levels, my adapted version of which is shown in Figure 1. The circles are shown as layers of context, all of which are equally as important in mediating teacher development, and the arrows show interaction between the different layers.

[Please insert Figure 1 here]

My definition of 'impact' in this paper is various forms of cognitive and identity-related development, which may occur within the microsystem of the individual teacher and their classroom, but also potentially within the mesosystem and macrosystem. From an ecological perspective, a teacher's development encompasses cognitive development – the internalisation of new knowledge, perceptions and/or beliefs – as well as the (re)negotiation of their individual sense of self or identity, and group identities and relations (Edwards 2019b; Van Lier 2004). A teacher's development occurs through negotiation within their environment (social, cultural, institutional and political) through interaction between perceptions, actions, and the environment. The various levels of a teacher's environment, as shown in Figure 1, may present 'affordances' – opportunities for mediation and further development – as well as 'constraints' – potential barriers to development. From a teacher's perspective, the intended (positive) impact of their AR project might be very small-scale and localised, such as to improve learning and teaching within their own context. However, this type of AR could be criticised by Car and Kemmis (2005) as overly-technical, or by Noffke (1997) as overly-personal in its scope. Professionally or politically-oriented and critical types of AR, as advocated by these scholars, do aim to have wider emancipatory outcomes. The question of how far the impact of a teacher's AR project might extend is an interesting one. Might the impact be continued beyond that particular project, beyond their individual professional development to their school context, and even beyond their school context? Researchers investigating the impact of teacher AR have started addressing these questions, and they will be explored further through this review. On a final note about 'impact', this term is generally presumed to have positive connotations in the context of the impact of teacher research, but should remain open for analysis. Indeed, as Kubanyiova and Feryok (2015, 436) point out, "the question of what constitutes a meaningful and worthwhile impact

of teacher education is far from resolved". I return to this question towards the end of the paper.

Method

Drawing on an ecological perspective as a framework for the literature review, this paper examines empirical studies published as journal articles over the last 15 years, since the emergence of the specific sub-field of the impact of language teacher AR in 2006. It addresses the following two questions:

1. What is the holistic, or ecological, impact of AR on language teacher development, according to studies published in journal articles between 2006 and 2019?

2. What are some of the reasons given in these studies to explain why AR initiates such development?

As this paper focuses on experiences that are unique to AR, other forms of practitioner research such as Exploratory Practice (Hanks 2019) and Reflective Practice (Mann and Walsh 2017) were not included in the search, neither were studies that did not specify the particular form of teacher research that was conducted. Different forms of AR *were* included, such as collaborative action research (CAR) and participatory action research (PAR). The focus of the review is the impact of AR on *language* teachers, in line with the focus of this Special Issue, with most of the settings being English Language Teaching (ELT), including English as a Foreign Language (EFL), English as a Second Language (ESL), and education programs for teaching English to speakers of other languages (TESOL). Studies of teaching other languages apart from English were also included, and the review covered all educational contexts from pre-school and primary to secondary and higher education, as well as language teacher education contexts.

I started the review with key word searches in databases such as EBSCO and ProQuest, using terms such as 'action research' + 'language teacher' + 'impact'/ 'development'. I also searched further within certain journals that typically publish studies on teacher AR (*Educational Action Research*), teacher education and professional development (*Teacher Education, Teaching & Teacher Education*), and language teaching (*ELT Journal, Innovation in Language Learning & Teaching, Language Teacher Research, Modern Language Journal, TESL-EJ* and *TESOL Quarterly*). It should be noted that I excluded the numerous journal articles that focus solely on describing AR projects themselves (the AR intervention and findings). These articles tend to explore the impact of AR on the *students*, but very rarely reflect on the development the teacher(s) also experienced, since that is not their focus. Instead, I only included articles that explicitly set out to explore *teacher* development that was initiated by AR project engagement, in line with the topic of this Special Issue.

The analysis of the empirical studies initially involved noting the context, methodology and types of impact on teacher development described in each article. I also noted any reasons given in the articles for why AR seemed to initiate these particular forms of impact. In the next stage of analysis, I categorised the types of impact according to microsystem, mesosystem or macrosystem – as shown in Figure 1. The criteria used for each system were as follows. I classified an impact as part of the microsystem if it related to the individual teacher's cognitive development – such as beliefs, perceptions, awareness, knowledge, new skills – or their identity-related development – including their understanding of self, engagement with new roles or identities and engagement with other people). Any mention of impact within the domain of the teacher's institutional environment was classified as part of the mesosystem, for example: initiating their colleagues' professional development and engagement with AR, or the development of new school practices, systems and values within

this community. Any impact that seemed to extend to the broader educational, social and political systems and values, such as across institutions and the relevant educational sector, was classified as part of the macrosystem. Finally, I coded and then grouped similar types of impact within each system to create 'impact themes'.

The impact of language teacher action research: An emergent sub-field

The literature review resulted in 21 articles published since 2006 that reported on the impact of language teacher AR across nine countries and various educational contexts, and these studies are listed in Table 1. This relatively small number signifies an emergent sub-field of study within second language teacher education in which there is still significant scope for further work. To date, work in the sub-field seems to be concentrated in Turkey (six out of 21 articles) and Australia (five out of 21 articles), so future research needs to encompass a wider range of countries and contexts. In terms of methodologies employed in this body of research, either a 'case study' or 'qualitative study' approach was used in the majority of cases, with a few studies using AR (e.g. Sato and Chen 2019) or CAR (e.g. Banegas, Pavese, Velázquez and Vélez 2013). The studies typically utilised qualitative methods such as interviews, written journals, observations, field notes, research reports, and notes from meetings or discussions, with some also employing surveys. It is important to note that very few of the studies had a longitudinal research design of more than the length of a semester or term. Table 1 also includes the journal in which each study was published. Studies within this emergent sub-field have been published in quite a wide range of journals, including international and high-ranking language and linguistics journals (*Language Teaching Research, TESOL Quarterly, The Modern Language Journal*), as well as more local journals (*English Australia Journal, Prospect: An Australian Journal of TESOL*). Notably, there appears to be a concentration of articles in *ELT Journal* (five out of 21 articles), with a few

also published in *Educational Action Research* (three articles) and two in *Language Teaching Research*.

While all 21 studies reported on the impact of AR within the microsystem, only eight of those studies explicitly reported on the impact within the mesosystem, with another three studies making passing reference to this level. Only three of the 21 studies (Edwards 2019b; Edwards and Burns 2016a; Yuan and Burns 2017) explicitly reported on the macrosystem impacts of language teacher AR, with another study (Yuan and Lee 2015) making passing reference. As a result of this finding, I then decided to include studies of the impact of AR on non-language teachers (teachers of any other subject), focusing on the journals *Educational Action Research, Teacher Education*, and *Teaching & Teacher Education*, as they had previously been included in the initial search and cover teachers of all subjects. While I found plenty of studies, as in the language teacher search, that reported primarily on impacts within the microsystem (e.g. Goodnough 2011; Li 2008; Seider and Lemma 2004), there were also several studies from the last decade that explore the AR impact within the meso- and macrosystems, which I deemed useful to include in the current review. These studies are listed in Table 2, and the main place of publication was *Educational Action Research* (three out of four articles).

The following sections present and analyse the specific types of impact that were identified within this body of literature, divided into the micro-, meso- and macrosystems. The analysis of AR impact within each system involved the coding of impact types to develop specific 'impact themes'.

[Please insert Table 1 here]

[Please insert Table 2 here]

Action research impact within the microsystem

The first level of analysis is the microsystem, and as identified by Table 1 in the section above, all of the 21 language teacher studies found that AR had benefited the individual teachers involved in various ways. Table 3 presents the different types of impact at the micro level as 13 inter-connected impact 'themes'. The 13 themes are divided into three main categories according to the domain of impact: general professional development, teaching-related development, and research-related development. By creating different categories for 'teaching' and 'research'-related development, I do not intend to present them as disparate, as they are intrinsically linked in both the process of conducting AR, and in the development that is initiated by AR. Rather, I would like to emphasise the strong themes that have emerged from several studies about *newly developed* research beliefs, skills and engagement.

[Please insert Table 3 here]

The first category included in Table 3, general professional development, comprises six themes that relate to a teacher's cognitive development (increased awareness or reflectivity; improved self-efficacy beliefs), professional identity development (negotiated (new) teacher(-researcher) identities), emotional development (renewed enthusiasm or motivation for teaching career), as well as increased autonomy and their appreciation of the value of collaboration with colleagues. Almost half (nine) of the studies identified increased awareness and reflectivity as a key benefit of language teachers engaging in AR, demonstrating the importance of this impact. These cognitive changes manifested in the

studies as a heightened awareness of a certain aspect of their teaching (Atay 2006, 2008; Banegas et al. 2013; Sowa 2009; Wigglesworth and Murray 2007) or an increased level of reflectivity about their teaching (Banegas et al. 2013; Cabaroglu 2014; Kayaoglu 2015; McDonough 2006; Moreira 2009; Sato and Chen 2019; Sowa 2009). For instance, in Sato and Chen's (2019) study, the novice teacher of Japanese was guided in self-evaluating her teaching through keeping a teaching log, and this process of reflection – on her students' oral performance, or how she kept track of their progress – allowed her to adjust her teaching approach. In addition, the studies (especially Atay 2008 and Sowa 2009) suggest that increased reflectivity after conducting AR can in turn encourage teachers to trial and evaluate, and thereby potentially make improvements to, their teaching. This body of work implies that AR can indeed lead to the development and (possibly) maintenance of a reflective *research perspective*, which Allwright (1997) argued was "much more important than the production of one-off research projects" (370). However, most of the studies mentioned above were conducted over the relatively short time period of one term or semester; in order to explore whether increased awareness and reflectivity can be sustained and research perspectives maintained, more longitudinal studies are needed that follow the same group of teachers over several years.

The second most-noted AR impact theme in this body of work was that language teachers negotiated new professional identities through engaging in AR. Some of the studies explicitly framed their research as focusing on teacher identity development (Edwards and Burns 2016b; Dikilitaş and Yayli 2018; Trent 2010; Yuan and Burns 2017), while others more briefly mentioned shifts in teachers' identities as one of several other benefits (Banegas et al. 2013; Yuan and Lee 2015). The two most recent studies focusing on language teacher identity negotiation through AR have usefully identified the most common types of identities

enacted by teachers as a result of their AR participation. Yuan and Burns (2017) describe how two Chinese high school EFL teachers developed identities as *coaches* (guiding students' development of learning strategies rather than transmitting knowledge), *teacher researchers*, *collaborators* and *change agents*, who were able to adjust their own teaching practices, but also encourage their colleagues to try their ideas. Dikilitaş and Yayli (2018) noted some similar identities that emerged among 15 in-service English teachers in Turkey: *sensitive teacher* (more learner-focused), *active seeker of informed practices*, *self-reflector*, and *empathy builder and collaborator*.

The studies described above indicate an important trend that AR can have benefits in terms of teachers' (re)negotiation of their professional identities, and particularly in forming research and collaboration-focused identities. The studies also contribute to the more established field of language teacher identity (see De Costa and Norton 2017). Going forward, research exploring the AR impact could make more explicit connections to the field of language teacher identity, and especially the areas of agency and emotions (see Miller and Gkonou 2018), which are important aspects of the AR experience and teacher development.

In terms of the other AR impact themes within the category of general professional development, connections are evident between AR and autonomy, motivation, self-efficacy beliefs and valuing collaboration, which all relate to professional empowerment. Empowerment and agency through AR position teachers at the heart of locally-appropriate educational and social reform to serve the 'greater good' (Rainey 2011). Empowerment can also greatly assist teachers at an individual or classroom level, however, by enabling them to make informed and valuable changes to their classroom practice. For instance, the teachers in

both Banegas et al.'s (2013) and Wyatt's (2011) studies were empowered to create more relevant teaching materials, and to use them more creatively in the classroom.

The second category of microsystem AR impact themes, teaching-related development, includes four themes: improved understanding of learners, development of knowledge for teaching, enhanced confidence about teaching, and the development of teaching practice. There are close ties between these themes and those already described above: for instance, developing awareness and reflectivity assists with a better understanding of learners' needs, and increased confidence about teaching would inform identity development. Many of the teachers involved in these studies extended their individual theories about teaching and learning, then applied their improved theoretical knowledge to their teaching practice (Banegas et al. 2013; McDonough 2006; Sowa 2009).

Although these changes to teaching practice are indeed encouraging as a result of AR engagement, a key area that AR perhaps differs from some other forms of teacher research such as Reflective Practice and Exploratory Practice, is the research-related development that can be initiated. This third category of microsystem themes encompasses changed perceptions or beliefs about research, the development of research skills, as well as sustained engagement in research. For instance, Yuan and Lee (2015) reported a perhaps commonly held belief about research among teachers as being a *myth* that is challenging and *remote* from their everyday practice. In their study, the teachers gradually took ownership of the research process, realizing its applicability to their teaching. However, while some studies found that conducting AR helps teachers broaden their perceptions of research, from a focus on research being 'scientific' and 'quantitative' to placing a greater value on qualitative research (e.g. Atay 2006), others found that such perceptions about research are somewhat

impervious. McDonough (2006) hypothesises that teachers' lingering doubts about the validity of AR might be due to the lack of teacher AR reports published in top journals, and included on Masters course reading lists.

A key concern about language teacher AR, voiced by some, is that it may place such a burden on teachers (in terms of time and resources) that the teachers are unlikely to sustain their engagement in AR after the formal completion of a project or course (Allwright 2005). However, as the final microsystem AR impact theme identified, McDonough (2016) and Edwards and Burns (2016a) both reported that some of the teachers involved in the initial AR (on a graduate teaching program and a national AR program, respectively) sustained their AR engagement in various ways, such as: continuing with the same AR project, developing it into a Master's or Doctoral research project, starting a new research project, reading more literature related to the AR project, publishing and presenting their AR findings, and having a "thirst" to do more classroom-based research (Edwards and Burns 2016a, 11). While these studies are promising, there is still a lot of work to be done within this emergent sub-field to investigate a broader conceptualisation of AR engagement – beyond one individual AR project – and ways such engagement can be sustained. Future research could involve ethnographic methods or narrative inquiry, for example, to follow teachers who have taken part in an AR initiative and track their career trajectories and various ways in which they re-use or adapt the skills and knowledge gained from their initial AR experience.

Action research impact within the mesosystem

The second level of analysis is the mesosystem. While nine of the 21 language teacher articles reviewed focused explicitly on the AR impact within the mesosystem, and another three made passing reference to such benefits, it is clearly a less studied system within the

field of language teaching. Therefore, non-language teacher studies reporting on mesosystem impacts are also included in this analysis in order to provide support. Table 4 shows the different types of mesosystem impact as six impact 'themes', which, as with the microsystem themes, are also inter-connected. For example, the development of a more collaborative or democratic institutional culture may well be accompanied by or act as a catalyst for the creation of a particular community of practice within the institution, and in turn, these two impacts would likely assist with colleagues becoming (more) interested in AR. However, for this thematic analysis, impacts are reported as they were observed and explicitly noted by the researchers in the included studies.

[Please insert Table 4 here]

The first mesosystem theme relates to how teachers were able to make changes to teaching and learning materials beyond their own classrooms through their AR projects. These changes manifested in various ways, including the integration of specific activities into the institution's curricula (Banegas et al. 2013; Edwards and Burns 2016a), or the adoption of a more student-centred approach to the curriculum in general (Goodnough 2010). The most successful case was perhaps Banegas et al.'s (2013) study, in which high school Argentinian EFL teachers worked collaboratively to co-construct knowledge for their school about the teaching of grammar and more authentic listening and speaking, which then affected course-wide improvements and the integration of new materials. Working as a team of four teachers with significant autonomy in their school seemed to allow them to improve their curriculum relatively easily. Likewise, the science teachers in Goodnough's (2010) study were mostly involved in collaborative AR in school-based teams and were conscious of aligning their AR projects with curriculum goals to facilitate integration of their AR materials, although they

did report that this alignment was sometimes challenging. As McDonough (2006) notes in passing reference to this meso level theme, although some of the teachers in her study "recognised the potential for their action research projects to initiate larger-scale reform" (42) of their curricula, whether or not such reforms could take effect and be sustained would rest with the teachers' managers and supervisors. Indeed, writing about the constraints of AR materials integration, Edwards (2018) argues that inflexible curricula, as well as the increasing dominance of casual positions in language teaching contexts, mean that the benefits of AR are not always fully embraced at the institutional level.

As the second mesosystem theme, four of the recent language teacher studies reported that hearing about AR projects conducted in their institution had stimulated colleagues' interest in AR, which in turn led to them trying out new ideas (Edwards 2019b; Edwards and Burns 2016a; Yuan and Burns 2017; Yuan and Lee 2015). For instance, one of the ESL teachers in Edwards and Burns' (2016a) study reported becoming a 'go-to' person for advice about research within her institution, taking on a research leadership role. In addition, the university research mentors in Yuan and Lee's (2015) study organised opportunities for the EFL teachers' AR to be shared in various formats, including as demonstration lessons for colleagues, some of whom were then inspired to use similar research methods and teaching approaches. However, most of these studies (except Edwards 2019b) relied on self-report data from interviews with the teachers who conducted the AR; future studies need to also interview those colleagues who have reportedly been inspired, as well as observe both their teaching and the dialogue that unfolds during research sharing events.

The third and fourth mesosystem themes indicate the possibility for AR to encourage a shift in institutional culture to one that is more collaborative and democratic, which may manifest

as the development of a particular community of practice. This impact is especially important, as institutional cultures are notoriously difficult to change because of the cultural "norming process" (Marshall, Pritchard and Gunderson 2004, 85) that may prevent teachers from embracing individuals' AR success or innovations, and also because research-focused cultures are not often observed in ELT institutional contexts (Borg 2013). Interestingly, the non-language teacher studies included in this review all noticed improvements in institutional cultures as a result of AR engagement, such as more democratic decision-making through the formation of new committees (Sales, Traver and Garcia 2011), or the development of closer relationships between teachers (McLaughlin and Ayubayeva 2015). In the EFL context, Dikilitaş and Yayli (2018) also observed empathy building as an impact of AR reflection that developed through collaborating with others. In addition, Wang and Zhang (2014) note that after the teachers' AR involvement, they initiated more collegial discussions, shared their research stories, and overall AR "changed the commonly isolated teaching culture" (231). However, these findings were not explored in any depth, and there is considerable scope for further work to study the impact of language teacher AR on school culture development. In particular, it would be useful for researchers to more thoroughly investigate the potential of AR in generating teacher-researcher cultures within (and beyond) institutions.

The final two mesosystem themes, institutional recognition of achievements and empowerment of the AR mentor, were each only identified as an impact once or twice (Edwards 2019b; Edwards and Burns 2016a; Sato and Chen 2018), therefore more research is needed to determine how relevant these themes may be in other language teaching contexts. These themes and studies offer interesting lines of enquiry: how teachers' AR projects and findings can by recognised institutionally in an egalitarian way so that the AR is shared and celebrated but also so that uncomfortable findings are embraced and explored (discussed

further by Edwards 2018 and Mockler and Groundwater-Smith 2015); and how mentors' professional development unfolds from their participation in AR projects.

Action research impact within the macrosystem

At the broadest level, the macrosystem of AR impact, very few language teaching studies have yet focused on or identified forms of impact that relate to the educational sector or cross-institutional benefits of AR, not least because of the difficulty of researching such impacts. Table 5 shows that so far, only two impact themes within the macrosystem have been discussed both in the language teacher and non-language teacher literature on AR impact. Yuan and Burns (2017) and Fernandez-Diaz, Calvo and Rodriguez-Hoyos (2014) found that collaboration initiated by AR was inter-institutional, helping communities of practice to develop that involved teachers, research assistants and researchers from various schools and universities. These partnerships can be difficult to navigate, as Yuan and Burns point out, and the roles and responsibilities within such collaborations need to evolve sensitively and democratically. However, in both studies, teachers and university researchers successfully became 'agents of change', who contributed to the construction of new knowledge and practices that benefited each other.

[Please insert Table 5 here]

The second macrosystem impact theme, recognition and increased professionalism at the sector level, is less pronounced, noted primarily by the Australia-based work of Edwards (2019b) and Edwards and Burns (2016a) but shows that there is indeed potential for broader recognition to lead to other forms of development. Edwards and Burns (2016a) discuss how teachers' AR projects were able to receive recognition at the Australian ELT sector level

through the dissemination of their work via conference presentations and published reports. One of those teachers, Andy, noted how teachers at another school she visited had read her published report in order to inform their own AR projects. Likewise, Goodnough (2010) mentions that the school principal promoted the teachers' AR in a local newspaper, but the study does not explore whether this had a ripple effect on other development. Edwards (2019b) investigates the impact of teacher AR from a slightly different angle – that of institutional leaders' perspectives. This study identified that a national program in Australia involving ESL teachers in AR since 2010 has gradually been contributing to the professionalism of the specific ELT sector in which the teachers and leaders are working. The leaders mentioned the important impact of teachers and ELT institutions gaining more respect through doing AR and being involved in subsequent research projects, in a context where they previously felt under-valued in comparison to other educational sectors (government schools, technical colleges and universities). Further research could usefully continue to explore institutional and sector leaders' perceptions of the broader impacts of AR, since they may be more likely to observe these wider benefits than teachers.

Why does action research initiate language teacher development?

I now shift focus to some of the reasons why AR seems to initiate language teacher development, in a holistic sense to include institutional and sector development. As part of the literature review analysis, I recorded and categorised reasons for why the teachers and their institutions had developed in the ways observed. In this section, interspersed with an analysis of these categories, I also expand on possible reasons using an ecological theoretical perspective.

The most prominent reason discussed in the literature is scaffolding in various forms, most notably through collaboration and partnership with others, and characterised in particular by CAR and PAR. Forms of scaffolding can be built into the AR program or process itself, but can also be present within teachers' institutions. Within the actual AR initiatives, a number of studies discuss the importance of collaboration with and mentoring from university researchers through a democratic rather than top-down partnership (Fernandez-Diaz et al. 2014; Sato and Chen 2019; Yuan and Burns 2017; Yuan and Lee 2015; Wyatt and Dikilitaş 2016). As an illustration, Yuan and Burns (2017) suggest that teachers' development is promoted through their "boundary-crossing experiences" (746) across different communities of practice with various stakeholders, including university researchers. Three of the other studies emphasise the importance of close collaboration with colleagues (Banegas et al. 2013; Wang and Zhang 2014) and teachers from other institutions (Dikilitaş and Yayli 2018). From a sociocultural ecological perspective, these types of collaboration and interaction form a "collective scaffold" (Eun 2008, 143) which facilitates both cognitive development – the internalisation of new ideas, skills and knowledge from each other (co-construction of knowledge) – and identity development in the relationships and new perceptions of the professional self that are formed.

Interestingly, the non-language teacher studies included in this review report on collaborative AR projects that often involved a greater proportion of the teachers within an institution compared to the language teacher studies. Indeed, Sales et al. (2011) emphasise that the whole school community should be involved in both recognising the need for AR as a form of professional development, and in creating the initiative itself. They also conclude that space and time for collective reflection need to be incorporated into the school's routines, and that basing the AR process in the whole community "fosters shared or distributed leadership,

which is a key element in guaranteeing the sustainability of the change" (918). In involving the community, it is crucial that the whole ecology is considered: that AR initiatives are bottom-up and therefore capture teachers' motivation and need for the process at the micro level (Edwards and Burns 2016a; Goodnough 2010), but that those teachers are involved in managing the process (Sales et al. 2011) and that support is provided within the meso- (institutional) and macro- (sector) systems.

Despite the scaffolding provided by AR initiatives and institutions, engaging in AR can certainly be characterised by a struggle or the uncovering and navigating of tensions, as identified by several studies within this sub-field, and these struggles can contribute to development. For instance, Atay (2006) describes the teachers undergoing a collaborative struggle to become active learners, Trent (2010) notes that the pre-service teachers in his study experienced considerable uncertainty as they began to see the schooling process as complex and problematic, and Moreira (2009) observes that those supervising the AR process were engaged in a continuous struggle to manage the constraints. Since AR involves teachers critically reflecting on their own practice but also on the constraints present in the ecologies within which they work, it is perhaps inevitable that tensions present themselves. The process of confronting and navigating these tensions can then force teachers to develop new ways of thinking, new approaches and a sense of agency, in some cases. However, returning to the question of whether 'impact' is always positive, as introduced earlier, it may be that teachers in some contexts are not adequately supported to navigate such tensions (as described by Edwards 2018). An important way forward for this sub-field will be to examine cases in which teachers do experience overwhelming challenges that prevent or reduce their opportunities for development, and then potential means of overcoming these challenges.

Further forms of scaffolding include opportunities for teachers to disseminate their AR project work, which can be built-in to the specific AR initiative (Wyatt and Dikilitaş 2016), as well as encouraged by people and resources (such as funding for conferences) within teachers' institutions. From an ecological perspective, this review shows that there is much scope for further analysis and promotion of affordances within the mesosystem. These include institutional affordances that support teacher AR, such as space and time, funding, opportunities to edit the curriculum and to lead other teachers, for example through mentoring others in doing AR, or setting up a school journal or newsletter to share AR findings (Edwards 2018). AR programs that are external to an institution also need to offer such affordances, such as the opportunity to publish and present. Within the macrosystem, ideally the educational sector will also offer affordances, although there is little evidence currently within the body of studies reviewed. For instance, local or national sector organisations could create initiatives for collaboration across institutions on research projects, funding to travel to conferences, and further avenues for publishing and presenting, such as an inter-institutional AR-themed professional development day (Edwards 2018). Edwards also suggests creating AR initiatives for school leaders themselves to research their own practice with other leaders.

The final key theme identified in the studies is the idea of AR as a 'tool' that provides a systematic framework for reflection on practice (McDonough 2006), helps teachers to connect theory and practice (Atay 2006; Sowa 2009; Wyatt 2011), and very importantly, gives teachers a sense of agency or control over their practice and their own development (Cabaroglu 2014; Wang and Zhang 2014). From a sociocultural ecological perspective, tools that are part of and created by the process of AR offer significant opportunities for mediation of teachers' development, especially if teachers are then able to 'transform' those tools in line

with their professional goals (Edwards 2019a). For instance, if a teacher's goal is to become a more theoretically-informed teacher, then internalising the tool of the AR framework and continuously re-using it for informal classroom reflection could align with their goal and promote their agency. More in-depth research on the reasons why AR can initiate development may be particularly useful in contributing to the study of language teacher agency (see Miller and Gkonou 2018).

Conclusion

This conceptual paper has identified and analysed the emergence of a new sub-field of research within second language teacher education – the impact of AR on language teachers – with teacher development viewed holistically, from an ecological perspective. The studies conducted to date show that AR has considerable benefits for teachers in terms of both cognitive and identity-related development, as well as teaching and research-related development, with the main focus of the sub-field so far being at this micro level of impact. Some studies have also identified that the impact of language teacher AR extends more broadly to the mesosystem (teachers' institutions) and the macrosystem (educational sectors), indicating that AR has the potential to influence the professional development not only of the individual teachers, but also of colleagues, and even to promote new or revised cultures and systems. Some of the key reasons that may explain why AR initiates such development are the various forms of scaffolding that AR provides – such as collaboration, partnerships between teachers and researchers, mentoring, and opportunities for sharing AR findings – and the way that AR offers teachers a tool for systematic reflection on practice.

The use of an ecological framework in this paper has identified several avenues for future research in this sub-field. Firstly while 'impact' is most commonly explored within the

microsystem of the individual teacher, there is considerable scope for further exploration of the impact of language teacher AR more broadly, within the meso- and macro-systems that form a teacher's professional environment. Secondly, work within this sub-field presumes impact to be positive, so studying examples of success as well as failure at various ecological levels would further develop the sub-field's understanding of how language teachers and institutions can overcome any constraints and benefit more broadly from teacher AR. The use of more diverse research methodologies would assist in this endeavour, particularly longitudinal ethnographic approaches that explore the views and experiences of various stakeholders. For instance, interviews with managers and sector leaders, analysis of meeting minutes and events, as well as focus groups with teaching colleagues, could all help to shed light on the meso and macro levels of development. AR itself as a methodology will continue to be particularly pertinent in examining the impact of language teacher AR, since it simultaneously allows for continued reflection on the process of development and the trialling of initiatives to enhance that development.

In terms of implications for practice, the most obvious conclusion from this review is that AR can greatly benefit individual teachers and support their own professional development in diverse ways, so AR should be an option that for all language teachers either within their institutions or their educational sectors. For language teacher AR to have a true ecological impact, it will be critical to provide sufficient and timely support for teachers both at the meso (institutional) and macro (sector) levels, through the creation of affordances such as resources and funding, and forms of scaffolding such as mentoring, AR study groups and partnerships, AR events for sharing of research and discussion. On a final note, it will be important for both researchers and practitioners to more closely examine the question of the meaningfulness of various forms of AR impact (Kubanyiova and Feryok 2015) so that AR

mentors and educators can be purposeful in the development they are hoping to initiate, and

the ways they facilitate that development.

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