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**Developing Inclusive Pre-service and In-service Teacher Education:
Insights from Zanzibar Primary School Teachers**

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Abstract

Developing inclusive teacher education to improve learning and schooling for all children is attracting increasing interest worldwide. This study examined teachers' insights into the development of inclusive teacher education by drawing on collaborative action research conducted by 20 primary school teachers in Zanzibar, Tanzania. The data were collected through semi-structured interviews and self-reflective journals kept by the teachers and the first author. The qualitative thematic content analysis revealed: (1) the need to embed inclusive education and action research into pre-service and in-service teacher education curricula and (2) both school-based organisational learning and school–community and school–university collaborations may foster collaborative school cultures and inclusive in-service teacher education. The study discusses the role of teachers' voices in informing teacher education development for educational equity and inclusion.

Key words: primary school teachers; inclusive teacher education; organisational learning; professional development; collaborative action research; sub-Saharan Africa.

Introduction

Inclusive education (IE) has gained popularity as an effective approach for educating all children by increasing their presence in schools, participation and (academic and social) achievement (Ainscow, Booth & Dyson, 2006; Forlin, 2013). Its use has recently been reaffirmed through the adoption of a new vision of inclusive and equitable quality education and lifelong learning for all in the UN's Sustainable Development Goal 4 and the Incheon Declaration for Education 2030. Forlin, Loreman and Sharma (2014) note that several governments worldwide have enacted IE policies, standards and guidelines. Yet, in many countries, pre-service and in-service teacher education reforms to support these new developments are lacking (Armstrong, Armstrong & Spandagou, 2011; Vavrus, 2009).

The situation is particularly poor in sub-Saharan Africa (SSA) (Forlin, 2010; UNESCO, 2014), where teachers lack not only sufficient training and resources, but also professional identities and autonomy. Buckler (2011) has observed that many countries in this region fall short with respect to teacher education policies. Lauwerier and Akkari (2015) and Hardman, Abd-Kadir and Tibuhinda (2012) have also noted that pre-service teacher training in SSA typically involves candidates with low levels of school education and weak entry qualifications, while in-service teacher training tends to be rather sporadic. Likewise, Akyeampong, Lussier, Pryor and Westbrook (2013) have stated that pre-service teacher education in this region is based on curricula that place little emphasis on learning quality or the diversity of pedagogical approaches. Harber (2012) further maintains that teacher education in SSA is authoritarian and lacks reflective practices. Despite their paramount importance, teacher education reforms to improve learning for all students have received little attention in the region (cf. Griffin, 2012; Harber, 2012; Moon & Wolfenden, 2012).

Examining teaching and teacher education issues in Tanzania from an ethnographic view, Vavrus (2009) finds that, despite the reforms in national education policy and syllabi, teacher education reforms related to preparing pre-service and in-service teachers to use learner-centred pedagogy and to understand the theories underpinning such approaches are lacking. Teaching and teacher education reforms in Tanzania and similar contexts should carefully consider local socio-cultural, political and economic factors. Otherwise, learner-centred pedagogical reforms are unlikely to be successful (Vavrus, 2009).

Teacher education reform is crucial for improving teaching and learning, and listening to in-service teachers is important for creating realistic and contextually relevant teacher education reform (Chaudary & Imran, 2012; Erten, 2015). Forlin (2012) asserts that “teacher education requires consideration at both pre- and in-service levels and good quality and appropriate training are imperative if inclusion is to be effective” (p. 6). Whilst some studies related to pre-service and in-service teacher education in Zanzibar have been conducted (e.g. Mosha, 2015), there is little scientific understanding of teachers’ insights into how to promote inclusive teacher education.

Teachers are key partners in the successful implementation of IE. Since they are the ones who experience the challenges of inclusion, their voices on ways to improve pre-service and in-service teacher education are essential. Moreover, quality teaching with IE practices requires appropriate and well-designed teacher education programmes (Forlin, Kawai & Higuchi, 2014; Sharma, Forlin, Deppeler, & Yang, 2013). The need to improve the quality of teacher education is emphasised by the oft-cited quotation, “the quality of an education system cannot exceed the quality of its teachers and principals” (OECD, 2011, p. 235).

In-service teacher education and professional development through collaborative action research (CAR) have produced promising results related to developing capacity for implementing inclusion worldwide (Avalos, 2011; Carrington & Robinson, 2004; Makoelle, 2014b; Waitoller & Artiles, 2016). The interest in the significance of teachers’ capacity

development through reflective inquiries can be traced to Dewey (1933), who emphasised reflective action among teachers (Etscheidt, Curan & Sawyer, 2012). Thus, in this study, we pay attention to the voices of in-service teachers who have implemented inclusive practices in their schools. In particular, the teachers in the present study attempted to develop inclusive collaborative inquiry practices and cultures through CAR projects. After describing the study context, we present and discuss the findings and explore the available relevant literature on what is contextually relevant in developing inclusive pre-service and in-service teacher education in Zanzibar.

Education system and teacher education in Zanzibar

In Zanzibar, formal education comprises two years of pre-primary education for 4- to 5-year-olds, six years of primary education (Standards I–VI) for 6- to 11-year-olds, four years of secondary education ordinary level (Forms I–IV) for 12- to 15-year-olds, two years of secondary education advanced level (Forms V–VI) for 16- to 18-year-olds and a minimum of three years of higher education (Ministry of Education and Vocational Training [MoEVT], 2006). Under this structure, basic and compulsory education (i.e. pre-primary education, primary education and secondary education ordinary level) takes 12 years.

Throughout this study, the term teacher education refers to both pre-service teacher preparation/training and in-service teacher support/professional development. Pre-service teacher education has traditionally been provided by teacher training colleges and universities. However, the 2006 education policy reforms place pre-service teacher education for government institutions within the remit of the State University of Zanzibar (SUZA), Zanzibar's sole public university. As a result, all public teacher training colleges are being gradually merged with SUZA (MoEVT, 2006).

The minimum duration of pre-service teacher education is two years, leading to a diploma qualification. The teaching practicum at this level comprises eight weeks of supervised teaching practice at the end of the first year. In higher education, training takes three years, leading to a bachelor's degree qualification with 16 weeks of supervised teaching practice (8 weeks at the end of each of the first two years). In-service teacher professional development falls under the remit of the Department of Teacher Education of the MoEVT. This department typically provides in-service professional development in the form of workshops and distance learning through teacher resource centres (Mosha, 2015).

In Zanzibar, teacher education institutions do not yet offer IE programmes at the bachelor's or master's levels. Since 2006, the Zanzibar Muslim Academy, a teacher training college, has provided a one-year in-service training course on IE. In 2014, SUZA introduced a two-year programme on inclusive and special needs education, which is offered to both pre- and in-service teachers at a diploma level (below the bachelor's level) and provides credentials to teach at the secondary education ordinary level (Forms I–IV). One of SUZA's two-year programmes—Diploma in Educational Leadership and Management—includes a course called Social Inclusion and Diversity in Schools. Studying in these programmes is voluntary, and IE is not compulsory at any level of teacher education.

In a further attempt to integrate IE theory into practice, the MoEVT in 2014 selected two primary schools to pilot an action research programme as a professional development model for developing teachers' confidence and problem-solving capacity to implement IE (Juma, Lehtomäki & Naukkarinen, 2017). Research has shown that action research develops teachers' capacity to improve their pedagogical practices and pupils' learning (Elliott, 2015; Juma, Lehtomäki & Naukkarinen, 2017).

Preparing and supporting teachers in inclusive teacher education

Research into appropriate ways of preparing and professionally supporting teachers to promote IE has become popular (Forlin, Kawai & Higuchi, 2015). There is a pressing need for teacher education to focus attention on “reconceptualising the roles, attitudes and competences of student teachers to prepare them to diversify their teaching methods, to redefine the relationship between teachers and students and to empower teachers as co-developers of curriculum” (UNESCO, 2013 p. 6). To realise a quality education system that benefits all students, Fullan (2013) suggests that education systems should: (1) foster greater intrinsic motivation among teachers and students, (2) engage them in continuous instruction and learning improvement, (3) inspire collective or team work and (4) affect all teachers and students.

Focusing on preparing pre-service teachers for inclusion is crucial for addressing negative attitudes and promoting teachers’ inclusive practices (Sharma, Forlin & Loreman, 2008). However, teachers need to be systematically supported in promoting inclusion through the use of both traditional (but still relevant) and new approaches. Ad hoc and sporadic approaches, such as providing in-service training workshops or short courses in a piecemeal fashion, should not dominate in-service teacher education. Other relevant and cost-efficient opportunities for supporting on-going teacher professional development through mobile phones, social media or adaptations of the abundantly available open and free educational resources (Buckler, 2011) are now possible and can be effectively used in Zanzibar and other resource-constrained countries.

In this study, we draw on primary school teachers’ CAR experiences for improving pre-service and in-service teacher education in Zanzibar, a semi-autonomous archipelago in Tanzania. We situate the teachers’ recommendations in the context of the existing body of literature to reflect on and suggest how teacher education can promote inclusive teacher education and hence enable teachers to improve learning for all children. In particular, based on the teachers’ CAR experiences, the study addresses the following two questions:

1. What do primary school teachers recommend for the development of inclusive pre-service teacher education?
2. What do primary school teachers recommend for the development of inclusive in-service teacher education?

The findings contribute to a growing body of literature on inclusive teacher education development. They also support a discussion on the role of teachers’ voices on teacher education development towards realising inclusive and equitable lifelong learning for all. The study aims to participate in the discussion on future directions for inclusive teacher education development towards creating educational equity and excellence.

Method

Research paradigm and design

In this study we employed interpretive/constructivist paradigm (Creswell 2003; Mackenzie & Knipe 2006) by attempting to achieve an in-depth understanding of the teachers’ views on the development of inclusive teacher education. We adopted action research design whereby the first author acted as a facilitator and a critical friend of the participating teachers during their CAR cycles. The use of action research for promoting

inclusion in Zanzibar was recommended in a 2013 evaluation of IE. The Inclusive Education and Life Skills Unit nominated two government primary schools (hereinafter referred to as Primary School A and Primary School B) to pilot action research for this purpose. Both schools are located in urban settings, which, in this study, refer to areas within or close to the major towns in Zanzibar.

Each nominated school selected 10 teachers based on their enthusiasm and readiness to form action research teams. Of these teachers, four (two from each school) worked as special education teachers in the special units. The remaining 16 teachers worked as regular education teachers for Standards I to IV. Most of the teachers (17) had undergone formal teacher training in a recognised teacher training college or university. Of the four teachers working in the special units, only one had undergone two-year specialised training as a special education teacher; the rest had only attended short courses (between two weeks and three months) on special education. After being selected, all 20 teachers participated in three 4-day capacity-building workshops to learn how to undertake action research and engage in it as a form of in-service professional development in promoting IE (see Juma, Lehtomäki & Naukkarinen, 2017). Based on the teachers' practical experiences and evidence generated through their CAR projects, we were interested in their insights and the way forward into the development of inclusive teacher education.

Prior to the data collection, approval for this research study was obtained from the Zanzibar Research Committee and the MoEVT. Permission was also sought from the administration of each school. Before collecting data, the first author informed the teachers about the intention of using the interview data for research and publication purposes. Following a verbal description of the informed consent, all the teachers willingly read and signed the informed consent forms. All teachers also gave verbal consent for audio recording of the interviews.

Respondent validation (Saldaña, 2016) was implemented by contacting some of the interviewees via email or phone to confirm a selection of points they made during the interviews. To ensure the anonymity of the participants, we have attempted to mask most of their direct and indirect identifiers. For this purpose, we have used the pseudonyms Primary school A and Primary school B to refer to the two schools and have assigned codes to each teacher to mask their actual names. For example, the code T1A refers to teacher number one of Primary school A and the code T2B refers to teacher number two of Primary school B.

Instruments of data collection

Data were collected mostly from one-to-one semi-structured interviews. Data triangulation was applied using the teachers' and the first author's self-reflective journals and the teachers' reports. The interview questions consisted of 14 guiding questions divided into three parts. The first part was about teachers' background information, formation of the action research teams, and aim of their action research projects. The second part focussed on the teachers' experiences and insights gained through their CAR projects. The third part addressed the teachers' views and suggestions on the development of inclusive teacher education.

Data collection and analysis

Data collection took place during and after the teachers' CAR projects. All of the interviews were audio-taped by the first author and transcribed verbatim in Kiswahili and English. The English transcription was important for the third author, who, unlike the first and second authors, was not conversant in the original language of the data. The translation

of the interview data from Kiswahili into English may have resulted in a loss of meaning, despite our best efforts to minimise such loss. The first author listened to the audio tapes of the interviews several times in order to increase familiarity with the data (Braun & Clarke, 2006; Saldaña, 2016) before the transcription. While listening to the recorded interviews, the first author also wrote down important data points. We thoroughly discussed and reviewed the transcriptions for accuracy by constantly comparing them with the original data from the audio recordings and the fieldwork notes. Engaging all three authors in the data analysis process helped in verifying the internal consistency of our interpretations.

The data were analysed using a qualitative thematic analysis reflecting guidelines proposed by Braun and Clarke (2006), who outline six steps of qualitative thematic content analysis: (1) familiarising oneself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing the themes, (5) defining and naming the themes and (6) producing the report. Our data analysis was also informed by guidelines from Saldaña (2016) and Bogdan and Biklen (2007). To extract insight from the interviewees, we used process coding (e.g. using *-ing* participle clauses or gerunds) and *in vivo* coding (i.e. drawing codes from the participants' exact words) (Saldaña, 2016). Using Microsoft Word processing tools (Hahn, 2008), we also applied techniques like italicising, highlighting, bolding and colouring to mark striking chunks of data or intriguing quotations used in the description of the analysis. Constant comparisons (Bogdan & Biklen, 2007) of the *a priori* codes and those directly driven by the data were also applied.

The first author did the initial coding that was checked in collaboration with the second and third authors, who are long-serving senior researchers and teacher educators. Since coding is an interpretive act prone to subjectivity (Saldaña, 2016), the coding process involved several cycles. At times, there were discrepancies in the authors' wordings and phrasings of the codes. Through several revisions informed by intensive discussions and deep reflection on the codes and the data as a whole, consensus was reached on each point. Once the data were coded and the codes were refined, we developed categories and sub-categories that emerged from the patterns of the data. From these categories, we generated themes that were constantly reviewed and revised. The resulting key assertions are postulated in the discussion section.

Research Findings

In relation to the research questions concerning pre-service and in-service teacher education for inclusion, the qualitative thematic interview data analysis, the first author's field notes and the teachers' CAR reports yielded five broad themes. We have broken these themes into two categories: (1) insights into the development of inclusive pre-service teacher education (embedding CAR into pre-service teacher education and embedding IE into pre-service teacher education) and (2) insights into the development of inclusive in-service teacher education (adopting CAR as a professional development model for developing inclusive in-service teacher education, using a whole-school approach to support teacher professional development and using teacher resource centres to support inclusive teacher education development).

Teachers' insights into the development of inclusive pre-service teacher education

Apart from expanding CAR to serve teachers in all schools, teachers in this study clearly expressed their recommendation for embedding CAR into pre-service teacher curricula. This theme emerged recurrently during both the interviews and informal discussions between the participating teachers and the researcher.

Yes, each teacher trainee should get this action research course. It should be offered there [at teacher training colleges] as a course so that when they [novice teachers] report to schools for duty and face inclusion problems, they are capable of easily addressing them. (T5A)

According to the participants, introducing action research as a course in pre-service teacher training curricula will help newly recruited teachers readily engage in action research as an in-service strategy to improve their careers by promoting inclusion through evidence-based practices.

It [action research] should be offered in the colleges to the teacher trainees so that they are aware that when they work in schools, their primary role is to teach, but also to conduct action research to improve their practices. (T8B)

The Ministry should have made action research a course in the teacher training curriculum just like Psychology, [which deals with] the child development, so that it becomes easier for the novice teachers from the colleges to conduct action research in order to identify and solve pupils' problems when they report for duty. (T6A)

With regard to embedding IE into pre-service teacher training curricula, teachers from both schools thought that introducing IE into teacher training curricula would help teachers at the beginning of their careers build confidence in identifying and addressing the diverse needs of their pupils.

For the Ministry of Education, I recommend that inclusive education [be] included in the teacher training curriculum. This will [making teaching] easier for those [novice] teachers when they come to work in the schools. They will not face problems on how to teach inclusively, as they will have learnt [the methods in their colleges]. (T9A)

When student teachers are taught inclusive education, they will no longer be afraid of those [pupils] with visual impairment, because there are some teachers who are scared of some children with visual impairment. If inclusive education is offered practically through action research [training], it will be much better for these new teachers. (T2B)

When further asked about how the integration of IE into the pre-service teacher training curriculum would help improve teachers' practices, the teachers contended that:

It will be of much help because when one graduates from the [teacher training] college, she will be aware of what she is supposed to do in order to improve her teaching practices and help pupils. (T2A)

They [the novice teachers] will not be reluctant or unwilling [to implement inclusion] because they know the goal and what problems we want to solve at the school. And, you know, the problems are always there. When one is solved, another one appears. So they [teacher training colleges] ought to make inclusive education and action research [compulsory] courses, like they do for Psychology. (T6A)

Teachers' insights into the development of inclusive in-service teacher education

Notwithstanding time limitations, teachers from both schools recommended the use of CAR to support the professional development of in-service teachers and promote inclusion in all schools in Zanzibar. For example, inspired by their action research projects to enhance inclusion, this teacher expressed her aspiration to build a system that would allow teachers to go beyond classroom teaching and engage in collective professional development through action research.

[...] all [serving] teachers should be provided this training on inclusive education by using action research. Teachers should not just teach, but should also get time to practice other things [such as action research] that are within their professional duties. (T7B)

From the teachers' perspectives, one advantage of conducting CAR is the ability to increase their repertoire of knowledge by sharing knowledge and skills during the course of the action research. They related the AR process to improving and enhancing their personal knowledge and skills. To support her argument, one of the teacher interviewees metaphorically contrasted knowledge with wealth:

[...] because the more you use your knowledge, the more you increase it. It's unlike wealth, [for which] the more you use it, the more it decreases. But as you start to put your knowledge into practice, it increases day by day. (T3B)

Central to the teachers' suggestions was the expansion of CAR training from the two pilot schools to the rest of the schools in Zanzibar. The teachers hoped that, through CAR training, their colleagues could also learn by doing how to incorporate inclusion in their schools.

It [the Ministry of Education] should extend action research to other schools in order for all teachers in their schools to learn how to do inclusion. (T6B)

Inspired by the insights into inclusion gained from their action research project, another teacher interviewee expressed the need to develop all teachers' capacity to support all learners in their classrooms through action research.

I think [that teachers need] further training. If we get further training on action research, we will be skilled in how to support all children: those with disabilities and others who just need additional support. You need training on how to support them all [in their learning process], how to teach them and various other ways of supporting them. This is because still we are not well prepared [for helping children learn better]. Through action research, teachers can improve [their practice]. So, the Ministry should plan to provide this training to all teachers in the schools. (T2A)

Through their CAR projects, teachers felt that their job became smoother and that teaching inclusively was possible. This kind of professional support encouraged the teachers

to support all children, including those with additional support needs. As one teacher suggested:

My only suggestion is about providing frequent professional support such as this one [CAR] to the teachers whenever possible in order [to ensure] that we don't feel that our duties are difficult, which may lead us to segregate the pupils who need additional support. We need to make them participate actively in the lessons. (T2A)

While appreciating the role of CAR in their professional development for inclusion, the teachers were dubious about training only a segment of the staff. Rather than implementing one-off cascade model workshops to train only a few teachers (as was the case in this study, in which only 10 teachers—about 20% of the teacher population—were selected from each school), the teachers recommended using a whole-school approach to train all teachers at the school. When only a few teachers are selected for training on IE:

[...] it leads to other teachers [who are not participating in the project] feel[ing] that they are not responsible to implement it. [...] It's better for all teachers in the school [to attend the training workshop], lest they should see that this task is only for those who attended [the workshop], whilst every teacher has a responsibility [to implement IE]. (T1B)

The teachers also acknowledged the importance of involving school leadership in supporting teacher professional development in schools. The teachers suggested that school leadership must appreciate the importance of continuous, school-based professional staff development. For action research to be effectively introduced in schools, head teachers should be involved and convinced to allocate school time to maximise teachers' attendance and participation in AR projects.

As for the issue of time, I think it's better if our head [teacher] is aware of it. Perhaps it's better to get some time within the working hours in order to offer training for whatever topic we shall be dealing with. It should not be [during] the weekend only because [during the weekend] everyone will have an excuse. (T2A)

The teachers believed that they could best develop reflective practice through action research if school management was also trained in the importance of continuous professional development. Only when head teachers have internalised the need for teachers to be up to date with recent development and research in the teaching profession will they have sufficient interest and enthusiasm to support other school staff in further training.

According to the interviewees, when the teacher resource centres are effectively used, they contribute to the increase of teachers' capacity development and confidence for implementing inclusion.

It would be better if the Ministry used the [teacher resource centre] co-ordinators and advisers to offer action research training so that when we come to our schools and come across a challenge we are able to confidently address it. (T5A)

It's also very important to reinforce the training [for] those who are in the schools now so all teachers get this training because it will help them to do their work better in many ways. (T7A)

Generally, the teachers in this study indicated a willingness to accept and support IE as an approach that can help improve the quality of teaching and learning for all children. They were eager to advance their practices to support all children in learning better, actively participating in the learning process and achieving their full potential. The teachers felt that IE is becoming more accepted among teachers, despite the challenges they face in its implementation. Hence, they believed that it was important for IE training and professional support to be extended to all pre-service and in-service teachers as an approach to improve teaching and learning. However, many teachers were also concerned about collaboration and mutual support between regular education teachers and special education teachers. For example, one special education teacher wanted the government to:

...recruit more special education teachers who can support other teachers to implement inclusive education, because our number[s are] limited.
(T4A)

Discussion

In this study, we have attempted to develop an understanding of teachers' experiences with the development of inclusive teacher education based on the insights they gained from their CAR projects. The teachers highlighted the need to reform pre-service and in-service teacher education. When teachers are motivated and supported to work together, they build a strong base for professional growth (Robinson & Carrington, 2002). Eventually, they can achieve professional collaborative autonomy, improve their identities and improve their career status. Reforms in teacher education, as highlighted by the teachers in this study and supported by the literature, are of critical importance in Zanzibar and elsewhere in SSA. Previous research (e.g. Akyeampong et al., 2013; Buckler, 2011; UNESCO, 2014) has indicated that teaching and teacher education practices in SSA are challenged by limited resources, a lack of mentoring, low work-related morale, teacher absenteeism, teachers' inability to identify and support pupils with learning difficulties, and an overemphasis on theory at the expense of practice. In the rest of this section, we discuss the teachers' recommendations in the context of previous research.

Embedding CAR in pre-service teacher education programmes

Inspired by their action research projects, the teachers in our study strongly recommended the adoption of pre-service teacher education reform to prepare teachers to be reflective practitioners who can competently reflect on their practice, identify and address barriers to learning and support all children. Infusing CAR in pre-service teacher education programmes enables teacher trainees to learn by reflecting on their own experiences and prepares them to be pedagogically (Larrivee, 2000) and critically reflective practitioners (Hagevik, Aydeniz and Rowell, 2012; Westbrook & Croft, 2015).

The teachers in our study recommended incorporating CAR in teacher education curricula. To implement this recommendation, teacher education programmes must be reformed to include more practical and reflective modes of assessing student teachers. One potential area in which CAR could be integrated into pre-service teacher training curricula is that of the coursework and teaching practicum. Student teachers could be engaged in practising CAR with local schools that implement IE as part of their coursework. Teaching practicums also represent an appropriate area for enhancing student teachers' reflective skills development (Körkkö, Kyrö-Ämmälä, & Turunen, 2016). During their practicums, student

teachers develop the capacity to integrate theory into practice, thus learning a skill essential to their lifelong professional development (Robinson, 2017).

The idea of embedding CAR in pre-service teacher education complements Cochran-Smith and Lytle's (1999) concepts of knowledge-in-practice and knowledge-of-practice, which involve teachers identifying and addressing barriers to learning through research in their classrooms and schools. Furthermore, Shulman (1987) emphasises the use of reflective opportunities to connect theory with practice among prospective teachers in teacher education programmes. However, we posit that embedding CAR in pre-service teacher education curricula in Zanzibar or any other context needs to be done in light of the country's curricula. Special consideration is critical for improving the assessment system, the human and material resources, the content and the quality of the curricula (Vavrus, 2009). The reforms may be most effective if they are implemented through a collaboration between private and government teacher training institutions to ensure uniformity in implementation, especially with respect to changing teachers' expected career roles.

Embedding inclusive education in pre-service teacher education

Another noteworthy teachers' recommendation identified in this study is that of embedding IE in pre-service teacher education. Literature on inclusive teacher education supports this recommendation by revealing that teacher education for inclusion has thus far focused on in-service teacher training, rather than initial teacher training (Kaplan & Lewis, 2013). We argue that, while it is appropriate (and, historically, more convenient) to focus on in-service training, it is now time to advocate and lobby for all teacher education institutions to make IE part of pre-service teacher training (Westbrook and Croft, 2015). In a similar vein, Stubbs (2011, p. 9) has argued that: "the principles and practices of inclusive education cannot be taught effectively through separate courses. There needs to be a constant message running through all pre-service and in-service courses, distance learning programmes, informal exchange opportunities, mentoring systems and cluster school programmes". Previous research has also established that when IE is integrated into pre-service teacher education, it saves time and resources needed to address negative attitudes later (Kaplan & Lewis, 2013). Infusing IE into pre-service teacher education supports inclusion in more schools and classrooms (Tiwari, Das, & Sharma, 2015) and helps to stop teachers from perceiving IE as an educational add-on (Sharma, Moore, & Sonawane, 2009).

Making IE pervasive in pre-service teacher education programmes is mandatory in South Africa, where policy demands that all pre-service teacher education graduates be well informed about IE and skilful at identifying and addressing barriers to learning for all children (Republic of South Africa, 2015; Walton & Rusznyak, 2016). However, such teacher education reforms are not always easy to adopt, particularly when teacher education institutions' capacities for IE are limited.

One important consideration for successfully embedding IE in pre-service teacher education programmes, however, is reforming teacher education institutions. Changes among pre-service teachers can be effective if teacher educators/trainers themselves practise what they preach. Student teachers can better implement inclusive practices if they observe these practices among their educators. Thus, as Bashan and Holsblat (2012) note, training through modelling is important for developing self-efficacy among pre-service teachers. In addition, to affect such changes, it is important to consider how changes in pre-service teachers' teaching practicums are organised. Specially, teaching practicums could be reorganised to incorporate inclusive practices, such as co-teaching, consultation with colleagues, team planning and consultations with other professionals (Forlin, 2012; Pugach & Blanton, 2009).

A stand-alone course, as suggested by the teachers in our study, can be used as a stepping stone towards integrating IE into all pre-service teacher education curricula. Thus, we argue, reforms requiring all pre-service teachers to take a core course in IE are essential as the nascent stage of incorporating IE into the teacher education curricula. Of critical importance is making this course compulsory at all levels of pre-service teacher education. If the module is elective, this may reinforce the idea that the responsibility for teaching children who need additional support lies only with those who take the elective course. Furthermore, it is crucial to focus IE on pre-service teacher training because this helps student teachers develop positive attitudes towards classroom diversity and feel confident and willing to support a diverse range of learners when they commence their careers (Sharma et al., 2013). If IE is included in all pre-service education curricula, novice teachers will feel that the responsibility of promoting inclusion is simply part of their jobs, rather than an additional burden. As emphasised by Booth, Nes and Strømstad (2003), however, this strategy requires teacher educators in teacher training colleges and universities to further develop and improve their competences and practices in IE.

Adopting CAR in inclusive in-service teacher education development

The teachers' recommendation to use CAR for professional learning and development echoes Avalos' (2011) and Wilderman's (2011) observations that, despite traditional professional development through workshops, conferences and courses, a shift towards engaging teachers in inquiry-based methods, such as CAR, is essential for effective teacher professional development. Professional development that is meaningful for teachers is one that is not detached from the realities of classroom practice (Robinson & Carrington, 2002).

With regard to the applicability of action research in resource-constrained contexts, studies in Namibia (O'Sullivan, 2002) and South Africa (Makoelle, 2014a) have shown that action research has great potential to improve teachers' professional growth. In particular, as O'Sullivan (2002) concludes following an action research study in Namibia:

If we are serious about the professional development of unqualified and under qualified primary teachers in developing countries, it is critical that we use whichever approaches and methods will best bring this about. Action research has immense, as yet relatively untapped, potential here. The time has come to begin exploiting this. (p. 538)

Research has indicated the potentiality of institutionalising CAR in Zanzibar schools to promote inclusion (Juma, Lehtomäki & Naukkarinen, 2017). However, for these CAR undertakings to be successful, teachers must be adequately motivated and supported through school-based professional development. One potential way to support teachers in CAR engagement is through school–university (e.g. faculties of education) collaboration. Such collaboration is likely to promote inclusive teacher education practices (Robinson, 2017) and help both teachers and university educators co-construct knowledge as they bridge the gap between theory and practice (West, 2011). In addition, such collaboration may help university educators maintain contact with the school classroom reality, especially with respect to the challenges of teaching inclusively. Experiencing this reality is crucial, since some of the university educators who lecture on IE practices have no practical experience of real-life teaching in an inclusive classroom.

Using a whole-school approach for professional development

A whole-school training approach, as suggested by the teachers in our study, is useful in eliminating the view that implementation of IE practices is the remit of only those few teachers who have been trained and showing that, instead, such practices are the responsibility of all staff. Thus, this approach helps to create a sense of shared responsibility and collaboration among staff members, which is important for successful inclusion (Loreman, 2007).

Realising success in bringing about changes like inclusion in schools is a formidable task when teachers lack a common vision or attitude concerning the aspired change (Nishimura, 2014). Thus, fostering a common vision among all school staff through collaborative inquiries and teamwork is critical for achieving effective on-going professional development (Vangrieken, Meredith, Packer, & Kyndt, 2017). Successful and sustainable in-service professional development for promoting IE will only flourish when all school staff and community stakeholders share the same vision and work collaboratively (Collinson, Cook & Conley, 2006; McMaster, 2013). Suggesting future directions for inclusive teacher education, Forlin (2012, pp. 177–179) outlines the essential aspects of inclusion training using a metaphor of an “inclusive wheel” with five levels:

- (1) Leaders/advisors: principals, consultants
- (2) Institutions/schools: teacher educators, university lecturers, teacher training institutions, or agencies
- (3) Initial Teacher Education (ITE): teachers in training, pre-service undergraduate or postgraduate students
- (4) Professional learning: teachers-in-practice, in-service teachers
- (5) Peripatetic/parents: other school staff, education assistants, visiting teachers, administrators, parents

Concomitantly with the above training schema, Forlin (2012) proposes a multi-agency approach for public and community awareness of promoting inclusion. Research has established that teacher collaboration with parents, colleagues and other professionals is key to inclusion success (Malinen & Savolainen, 2012) and school well-being (Kantavong, 2012). Thus, it is important for such collaboration skills to be nurtured beginning with initial teacher education.

The teachers in the current study also highlighted the need for collaboration between regular and special education teachers through school-based professional development activities. Similarly, Pugach and Blanton (2009) and Naukkarinen (2010) have emphasised the importance of collaboration between special education and general education teachers in fostering IE in teacher education. Such collaboration may help teachers: (i) develop strong synergy; (ii) reduce professional isolation, which may lead to a feeling of burnout; and (iii) discover new ways of addressing learning barriers for all pupils (Mitchell, 2014). Also, in addition to inquiring about practice, motivated teachers can work together in the classroom through collaborative teaching, which is an effective evidence-based strategy for promoting IE in schools (Mitchell, 2014). Thus within the IE framework, the teachers in the special units in some Zanzibar schools, as highlighted in the introduction section in this article, and the teachers in the mainstream classrooms could work collaboratively through co-planning and co-teaching. For such a collaborative work culture to be realistic, professional support from the Inclusive Education and Life Skills Unit and the Department of Teacher Education is necessary. This support is necessary for teachers to learn and work together to support the best interests of all children.

In this regard, the lack of an organisational culture that values and supports engagement in and utilisation of research knowledge may hamper the use of CAR to develop

teachers' professional knowledge or apply such knowledge in their classroom practices. For CAR to be adopted and used to promote inclusive practices among teachers, therefore, it is necessary to consider the development of schools' organisational culture (Schein, 2010) as a means for supporting collaboration among school staff carrying out inclusive practices. Of special significance are practice-oriented applications of organisational learning (Argyris & Schön, 1996; Collinson et al., 2006), communities of practice (Wenger, 1998) and professional learning communities (DuFour et al., 2010; Stoll et al., 2006) focused on sustainable collaboration and continuous development through whole-school thinking.

The crucial element in these applications would be—in a fashion tailored for SSA and other contexts with limited resources—the restructuring of channels of information flows and processing (i.e. the communication structure) in the school environment. Such a restructuring could enable staff to allot sufficient time for collaborative planning, reflection and assessment, as well as for getting to know and learning from one another's work. This kind of communication structure is cost effective and could also facilitate in-service training from colleagues from the same school.

Using teacher resource centres to support inclusive in-service teacher education

The role of teacher resource centres in promoting teacher professional development in Zanzibar has been largely positive (Mosha, 2015). The teachers in this study exhibited a positive view of the role of the teacher resource centres. This could be why the teachers recommended the use of these centres in promoting inclusive in-service teacher education. Mosha (2015) suggests that the teacher resource centres in Zanzibar play a pivotal role in promoting teacher quality through professional development and support. Therefore, Zanzibar's recent initiative to recruit inclusive education and life skills advisers to teacher resource centres may further support the development of inclusive teacher education.

Shortages of educational resources for the development of teacher education are not uncommon in the region (Buckler, 2011). However, if teacher education institutions take advantage of the wealth of open and free educational resources, such as those provided by Teacher Education in Sub-Saharan Africa (TESSA), Enabling Education Network (EENET) and UNICEF, the gap in educational resources for inclusive teacher education, at least in terms of electronic textual materials, can be somewhat minimised. TESSA, a network of teachers and teacher educators working in tandem with The Open University in the UK, aims to improve both the quality of classroom practice and access to teacher education resources in SSA. Both TESSA and EENET offer open educational resources in various languages, including Kiswahili (the national language of Tanzania) to support school-based teacher education. However, as UNESCO (2014) cautions, such distance learning initiatives work better when supplemented by face-to-face meetings with tutors or mentors (see also Haßler, Hennessy, Cross, Chileshe, & Machiko, 2015; Hennessy, Haßler & Hofmann, 2015).

Providing the support necessary to sustain such an important initiative for fostering inclusive practices in schools is crucial for both the central government and other educational stakeholders, such as non-governmental organisations, parents, teacher unions and teacher educators. As our findings have indicated, teachers may accept IE as an equitable human rights-based philosophy of education in theory, but may reject it in practice if they are not sufficiently supported through continuous professional development. Teachers need this support to keep abreast of best practices from various parts of the world. It should be noted that IE is not a quick fix; rather, it is an on-going process of changing educational systems to welcome and support all learners. This process requires stakeholders to commit to teacher support and professional development through the fostering of collaborative work cultures over the long term (Robinson & Carrington, 2002).

Our findings confirm other research findings with regard to the relevance of CAR in supporting teacher professional development. UNESCO (2009) recommends that governments improve teachers' status and working conditions, design sustainable mechanisms for recruiting appropriate pre-service teacher candidates and retain qualified teachers willing to be responsive to the learning needs of learners from diverse backgrounds. These recommendations are particularly important for the present discussion because they reflect the real-life situation of Zanzibar and other contexts with limited resources. Therefore, taking into account teachers' insights, as presented and discussed in this study, is crucial for improving teacher education practices towards inclusion. Teachers' voices, Buckler (2011) suggests, should be given due consideration in efforts to improve teacher education policies and practices.

Conclusions

Based on the teachers' insights into the development of inclusive teacher education, our study findings suggest that CAR can play a pivotal role in improving both pre-service teacher education and in-service professional development and lifelong learning among in-service teachers. Given the importance of collaborative skills in promoting learning for all learners, we argue that it is essential to incorporate such skills in both pre-service and in-service teacher education programmes to enable all teachers to teach inclusively. Such an initiative will require instituting organisational learning practices that value collaboration and teamwork. However, it is critical that these reforms consider the need to simultaneously improve teachers' status, motivation and working conditions. Of equal significance is the need for reforms in teacher preparation to ensure that future teachers are better prepared to respond to the diverse learning needs of their pupils. If not well prepared, teachers can become caught in what Razer and Friedaman (2017, p. 1) call the "cycle of exclusion", in which teachers are not professionally capable of appropriately responding to the diverse needs of their students.

The findings, which could be transferred in the broader contexts beyond the context of the study, have direct practical implications for the process of improving the quality of learning and schooling for all children through development of inclusive teacher education. Future research could investigate how teacher education institutions, such as universities and colleges, respond to educational reforms. It would also be beneficial to further investigate how the teacher resource centres can be more effectively supported in making use of open educational resources to develop effective and cost-efficient in-service teacher education.

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