

Views of agricultural science teachers on in-service training needs in the Zambezi region, Namibia

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Abstract

In-service teacher training programs offer opportunities for teachers in both public and private schools to enhance their professional skills, particularly in the areas of required teaching skills, supplementary subject content knowledge, and teaching pedagogy. The lack of availability of in-service teacher training programs for teachers within the education system has undesirable consequences, particularly regarding the delivery of quality education to learners in public and private schools in the Zambezi region, Namibia. This paper discusses the perspectives of Agricultural science teachers on the need for in-service teacher training. To achieve the objectives of this paper, crucial data were collected from Agricultural science teachers in the Zambezi region through face-to-face interviews. Twelve Agricultural science teachers (comprising six from urban schools and six from semi-urban schools) were interviewed using face-to-face interview guides. The study revealed that the in-service teacher training programs attended by Agricultural science teachers were relevant to their teaching roles. Furthermore, the study emphasized that to maintain the relevance of in-service teacher training programs, components such as practical activities, projects, investigations, and subject content knowledge should be the focus, in order to continually enhance the capacities of Agricultural science teachers. The study recommends that the regional education directorate in the Zambezi region establish a policy for continuous in-service teacher training programs, including them in their annual financial plan, to improve teacher performance in the region. Lastly, to ensure the success of in-service teacher training programs, they should be conducted on an ongoing basis.

Keywords: Agricultural science, education, in-service teacher, need, training

Introduction

The main aim of this study is to survey the views of Agricultural science teachers on in-service training needs in the Zambezi region of Namibia. Following the implementation of the newly revised Basic Education Curriculum (BEC), the Agricultural science teachers' skills needed to effectively implement the curriculum seem not to be adequately catered for during the formal teacher training program. These skill gaps can however, be addressed through relevant in-service training or Continuous Professional Development (CPD).

In-service teacher training programs serve as a means through which teachers acquire the skills, knowledge, and attitude necessary to fulfill their teaching responsibilities to the required standard. In-service teacher training plays a crucial role in helping teachers improve the quality of teaching in their classrooms (Che Mohd Zulkifli Che Omar, 2014). Teachers are the primary implementers of a school curriculum, and the successful implementation of the curriculum is closely tied to their effectiveness. In-service teacher training is a key factor in bringing about the necessary changes in the teaching and learning process (Che Mohd Zulkifli Che Omar, 2014). It is essential to note that teachers' knowledge, skills, and attitude need to be advanced efficiently. Therefore, one of the most important strategies to enhance the quality of teaching among teachers is the implementation of effective in-service teacher training programs (Asiyai, 2016).

Currently there is no documented study that provide data of the Agricultural science teachers in-service training needs in the Zambezi region, Namibia. This makes it difficult for identifying and planning CPD programs to enhance the capacity of the Agricultural science teachers in the region for effective implementation of the

revised BEC. According to Osamwonyi (2016), to meet the increasing demands of any education system, it is critical to provide comprehensive in-service teacher training for teachers to update their skills, knowledge and experience, and this is particularly crucial for Agricultural science teachers in an environment such as the Zambezi region of Namibia due to the transformation of education curriculum. Thus, this study addressed the following research objectives:

1. To survey the views of Agricultural science teachers on their in-service training needs to effectively implement the revised BEC in the Zambezi region, Namibia.
2. To recommend appropriate interventions that could be provided to the Agricultural science teachers in the Zambezi region and hence, equip them to effectively implement the revised BEC.

The research findings will provide evidence-based data of the Agricultural science teachers' in-service training needs in the Zambezi region, Namibia. Such data is needed for identifying and developing targeted interventions aimed at addressing the skill needs of Agricultural science teachers in the implementation of the newly revised BEC.

Significant statement

Following the full implementation of the newly revised BEC in 2017 in Namibia, the Agricultural science teachers seem not to have all the skills needed for effective implementation of the BEC. These skill gaps can be filled by developing effective in-service training programs. However, the indicators of such skills deficiency can be obtained by surveying the views of the Agricultural science teachers who are directly implementing the curriculum in the study area, hence the need for this study. According to Bluestone et al. (2013), Continuous Professional Development (CPD) as integral part of teachers' in-service training can effectively influence the sought after teaching and learning outcome, if good approaches are used. This study, therefore, contributes the Namibian perspectives of Agricultural science teachers' in-service training needs to the body of literature in the research field.

The concept of in-service teacher training program

According to Osamwonyi (2016), in-service teacher training

can simply be defined as the relevant courses and activities in which a serving teacher may participate to upgrade his professional knowledge, skill, and competence in the teaching profession. Therefore, it encompasses all form of education and training given to a teacher who is already on the job of teaching and learning. (p.83)

Learning is a perpetual process of improvement of knowledge as well as skills to effectively and efficiently foster quality teaching, which in the education system, and is often measured by learners' good academic performances (Osamwonyi, 2016). It is important to understand that the success of a school is largely depended on the characteristics and the overall effectiveness of the teachers. It is worth noting that the characteristics and the overall effectiveness of teachers are not only dependent on the pre-service training received but also on the in-service training of teachers. Irrespective of the teaching experience and pre-service academic qualifications obtained, Agricultural science teachers have a lifelong desire and need for in-service teacher training to enhance their professional knowledge and skills, and to be up-to-date with the contemporary issues in their discipline (Roberts & Dyer, 2004).

According to Ramirez (2020), pre-service teacher training is a program organized for prospective teachers to acquaint them with the necessary skills, attitudes, and knowledge to effectively execute their teaching responsibilities in the classroom. Conversely, in-service training denotes the training bestowed to teachers who are already teaching to advance their pedagogical skills, knowledge, attitudes, and experiences necessary to effectively carry out their teaching undertakings in the classroom (Nwaubani et al., 2016).

The purpose of in-service teacher training program

According to Che Mohd Zulkifli Che Omar (2014), the purpose of in-service teacher training is to make it possible for school teachers to obtain novel perceptives as well as teaching skills. It emphasizes crafting a learning environment that supports teachers to improve their teaching effectiveness in their classrooms. In-service teachers' training aims at providing contemporary training to the teachers to help them develop the needed skills in their specific specializations. In-service professional training is a training program that comes in between "work and free working time" (Nwaubani et al., 2016) which often take between 1-3 weeks with the main aimed of promoting academic growth and job competencies among teachers.

In-service teacher training is a life-long education process that nurtures in teachers the assertiveness of continuous professional learning (Adeosun et al., 2009). Equally, Sorensen et al. (2010), view in-service teacher

training as an absolute means to keeping teachers up-to-date on the current educational needs for their overall perfection in their teaching. According to DiBenedetto et al. (2018), agriculture education is a diverse discipline, which can make difficult for Agricultural science teachers to remain up to date in their subject content knowledge and pedagogical skills necessary for effective teaching in their classrooms.

Because of the diversity of activities and the enormous amount of content taught within the realm of Agricultural education, most Agricultural education teachers require some form of in-service on a regular basis to be able to cope with the demands of the profession. (Sorensen et al., 2010, p.1)

In-service teacher training is mainly provided through short courses, seminars, conferences and internships where the participants (teachers) are fully engaged in practical professional work to strengthen their skills and knowledge in their discipline based on identified specific needs. Thus, for teachers to successfully implement the Agricultural science curriculum in their classroom, in-service training workshops, seminars, and short courses are indispensable (Alabi & Ige, 2014). Incidentally, Agricultural science teachers ought to remain knowledgeable in Agricultural advancement to be effective in their teaching. Agricultural science teachers crave to perfect their subject content knowledge as well as build up their academic skills whilst on the job to remain valuable professionals (Rice & Kitchel, 2017). For that reason, Agricultural science teachers require prudently designed in-service training programs to help them enhance their professional skills and knowledge. In this regard, the fundamental basis of in-service training of Agricultural science teachers is to enhance their teaching qualities, subject content knowledge, pedagogical skills, and competence that are required for effective teaching in their classrooms (Rice & Kitchel, 2017). It is generally accepted that teachers possess a pool of abilities as well as skills from which they make available for learners during the teaching and learning process. According to Mupa and Chinooneka (2015), a different school of thinking perceives teachers as those who give directions concerning the type of activities learners are expected to undertake while affording them liberty as well as the option of action.

Regardless of the important role of teachers in the implementation of the school curriculum, the attribute as well as the effectiveness of teachers in schools continued to invite criticisms in Namibia, particularly in the teaching area. Towards addressing this concern, in-service training provides opportunities for teachers to gain knowledge of innovative methods, tactics as well as skills in the handling of teaching demands (Alabi & Ige, 2014).

Different approaches to in-service training program

In Namibia, there are different approaches to in-service teacher training. In fact, fresh teacher graduates who are employed into the teaching profession are exposed to different in-service training programs such as subject-specific capacity building provided by the Ministry of Education, Arts and Culture (MoEAC) through workshops and seminars. Additionally, part-time teacher training programs are also available and serve as an opportunity for teachers to take up in-service teacher training, such as In-Service Education Training (INSET). In the Zambezi region of Namibia, three classifications of teachers are believed to be the patrons of in-service training and these include professionally unqualified, underqualified teachers, and novice teachers.

Study area

This study was carried out in the Zambezi region of Namibia. The researcher became interested in the study due to personal observations in several schools in the Zambezi region and also through spontaneous discussions with Agricultural science teachers in school meetings and regional workshops. Therefore, the researcher was interested in finding out from the Agricultural science teachers (the custodian of the Agricultural science curriculum implementations in schools) their views on in-service training needs, with the purpose of establishing the Agricultural science teachers' in-service training needs in the Zambezi region and advice the regional education directorate on appropriate intervention training programs.

Methodology

Research design

This study applied the qualitative descriptive research design to collate data from the participants on the views of Agricultural science teachers on their in-service training needs. The purpose of the qualitative descriptive study is to provide in-depth description and complete synopsis of the views of Agricultural science teachers' in-service training needs in the study area based on individual participant's perspective.

Sample and sampling procedures

The study applied the purposive sampling technique in choosing the participants for the study. According to Maxwell (1996), purposive sampling technique is a plan in which particular individuals are chosen intentionally with the singular purpose of providing significant data that cannot otherwise be obtained from any other selections. A sample of 12 Agricultural science teachers was purposively selected across the 4 selected schools in the study area. The 12 Agricultural science teachers were selected based on the following criteria:

1. The Agricultural science teachers should have three years and more of continuous teaching experience. In the Namibian context, 3 years and more of teaching experience is the benchmark for being considered to be an experienced teacher.
2. The Agricultural science teachers were willing to participate in the face-to-face interviews.
3. Agricultural science teachers who have been teaching Agricultural science as a school subject from grades 8 to 10 in the study area.

These category of Agricultural science teachers are said to have rich information on the views of Agricultural science teachers in-service training needs that are necessary to address the research problem and could suggest possible issues related to in-service training needs of Agricultural science teachers in the study area.

Research instrument and data collection

Research instrument denotes any tool that the researcher uses to collect data from the participants in the study. This study used face-to-face semi-structured interviews as the research instrument to collect data from the participants on the views of Agricultural science teachers on in-service training needs in the Zambezi region. Semi-structured interviews are often open-ended, thus permitting for flexibility, and on the other hand, following a predetermined particular outline, giving a sense of sequence. The researcher carried out the face-to-face interviews in a private office with no disturbances and a recording device was used to ensure that the details of the interviews were collated without missing any information. All participants participated in the face-to-face interviews and in-depth data on the views of Agricultural Science teachers on in-service training needs were collected.

Data analysis

For this study, the thematic analysis technique was used to analyze the collated data. Thematic data analysis technique includes the procedure of methodically employing plausible approaches to describe as well as to organize based on the emerging themes (Creswell, 2014). According to Creswell (2014), this technique of data analysis includes the identification of patterns that are found to be common within the responses of the participants and then analyzing them according to the research objectives. Audio recorded data were transcribed into text to be read through over and over to generate meaningful data and to effectively ensure that the data collated addressed the research objectives. Subsequently, the data were recapitulated into clear themes as well as sub-themes and finally translated to provide strong meanings to the research findings.

Research ethics

The permission to carry out the study was sought from the regional education office. Further permission was obtained from the school Principals of the selected participants. The purpose of the study was clearly explained to the participants to enable them to freely decide whether to participate in the study or not. The participants were assured of their confidentiality and no real names of the participants and their schools were required during the data collection process. The researcher used P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, and P12 for participants and S1, S2, S3, and S4 for schools to keep the individuals and schools anonymous. Participants were also notified that their participation in the study was voluntary and they have the right to withdraw from participating at any time they wish to do so without any implications involved.

Results and Discussions

In this section of the paper, the themes obtained from the thematic analysis are discussed.

Participants' important demographic characteristics

Figure 1

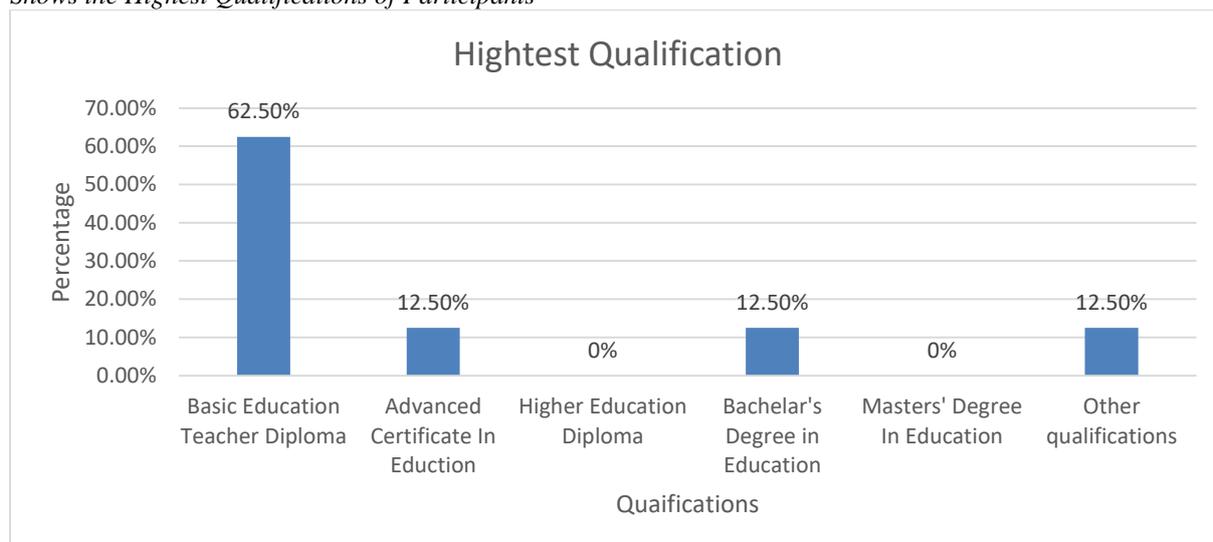
Distribution of Responses of Participants by Teaching Experience



The majority (87.5%) of the participants in the study areas have teaching experience in Agricultural science of >3 years and only 12.25% have 3 years of teaching experience (Figure 1). The results of the study are similar to the findings by Darko et al. (2016), in their study on the constraints in teaching practical agriculture in selected senior high schools in the Sekondi-Tooradi metropolis. The authors revealed that the majority (60%) of the participants have many years of teaching experience in Agricultural science. Thus, the findings of this study indicate that Agricultural science teachers in the study area have taught Agricultural science for a protracted period and therefore, have the necessary teaching experience and consciousness concerning what is expected of their teaching.

Figure 2

Shows the Highest Qualifications of Participants



The participants were queried to indicate their highest academic and professional qualifications. The findings of this study revealed that participants either possess the Basic Education Teacher Diploma (BETD), Advanced Certificate in Education (ACE), Higher Education Diploma (HED), Bachelor of Education degree (B.Ed.), Master of Education (M.Ed.) and other qualifications such as Bachelor of Science (B.Sc.), Bachelor of Accounting (B.Acc.). The results of this study revealed that the majority (62.5%) of the participants are BETD

holders and 12.5% of the participants hold either ACE, B.Ed., and other qualifications such as B.Sc. and B.Acc respectively. The results of the study further revealed that none of the participants holds the HED and M.Ed qualifications respectively (Figure 2). The higher percentage of BETD (62.5%) is more likely as BETD specializing in Agricultural science is the minimum professional teacher qualification that an Agricultural science teacher should possess to be qualified to teach Agricultural science from senior primary to junior secondary in Namibia.

Participants' experiences in previous in-service trainings attended

In-service training attended

Participants were asked the question, "Have you attended any in-service training since you were appointed as an Agricultural science teacher?" The study revealed that the majority (63%) of the participants attended such training, while only 37% of the participants did not attend any in-service training since their appointment as Agricultural science teachers in the Zambezi region. The following are responses from some of the participants addressing this specific question.

Yes, in the first years, especially when I started working, I went for training, but ever since no training has since been conducted (P12). I attended yes, maybe I will say twice if I am not mistaken (P5). Since I was appointed as a teacher, I never attended any in-service training. I have just been attending Biology and Life Science workshops, not Agriculture (P1).

While the findings here suggest that the participants have attended at least, one in-service training as an Agricultural science teacher in the study area, there is need for such training to be on a regular and continuous basis. This is necessary to keep the teachers abreast of the new development in the teaching and learning of Agricultural science. These responses align with the views expressed by Boudersa (2016), who emphasize the importance of in-service training programs in equipping teachers with the necessary pedagogical approaches to effectively teach in classrooms. Additionally, Muhammad Imran Junejo et al. (2017) suggest that in-service training helps cultivate positive attitudes, enhance teaching abilities, and increase subject knowledge among teachers.

The organization and focus of the in-service training

Participants were further asked the question, "Who organized the in-service training, and what was the focus of the in-service training they attended?" The study revealed that the majority (63%) of the participants indicated that the in-service training they attended was organized by the Agricultural science advisory teacher in the Zambezi region and the National Institute for Education Development (NIED). The participants mentioned that the main focus of the training was on the new topics included in the new curriculum, subject content, practical activities, and investigations. The following quotes from the participants provide their exact responses to this particular question.

In-service training that I had focused mainly on how to set assessment questions, especially the topic tasks and the investigations (P2). The focus was more specifically on the new topics which were included in the new syllabus which was introduced recently (P5). The focus was more on the new curriculum, the facilitators were trying to explain to us the changes that took place and also provide details on introducing new topics for the Advanced Subsidiary (AS) level. So it was more of the content that is new in that curriculum grade 12 (P6). The focus was some of them were talking or tackling the subject content and the others were tackling this practical work in agriculture (P7).

These findings suggest that the in-service training received by the Agricultural science teachers focused on different aspects of their job, mainly assessment, new curriculum content and practical work. In a similar study, Kanokorn et al. (2012), highlighted the need for understanding and appreciating the educational objectives of curriculum as well as extending teachers' capacity and imagination to improvise. Thus, the component of Agricultural science teachers in-service program in the Zambezi region (the study area) which focused on the content of the new curriculum and tackling practical skills might provide relevant experiences for the teachers to effectively implement the revised BEC.

Relevance of the in-service training attended

Participants were further asked to explain if the in-service training they attended was relevant to their job as Agricultural science teachers. The study revealed that the majority (63%) of the participants indicated that the

training they attended was indeed relevant to their job. Here are some of the responses from the participants regarding this specific question.

The in-service training that I attended was relevant to my job. The training especially exposed me to how to carry out practical activities with the learners, and how to give these skills to learners so that they can also know how to help themselves when they are out there. The other aspect that was covered in the training was more on the subject knowledge content. Certain aspects of the syllabus that seemed challenging were also covered (P7). The training was relevant because, there are many important aspects of the subject that I learned, for example, how to interpret the lesson objectives and the basic competencies (P5). Well, the training was relevant to my job, because, after the training, I was able to prepare and set the investigations for learners. So it was very relevant to my job. Since after the training was developed the confidence regarding such aspects of the curriculum. (P2).

In a related study, Ayvaz-Tuncel and Çobanoğlu (2018), pointed out that teachers' participation in in-service training programs enable them to gain more practical experience to effectively carry out practical activities in their teaching. Additionally, Kanokorn et al. (2012), identified the crucial role of teacher's in-service training for developing self-confidence and independence. Mikkola (2012), highlighted the importance of subject content knowledge as an essential component for an effective in-service teacher training program. Thus, the component of in-service training provided to the Agricultural science teachers in the study area are relevant for their job performance, especially the implementation of the revised BEC. Therefore, it is important to understand that in-service training helps in updating the desired professional skills and subject content knowledge of teachers given the continuous contemporary issues related to the curriculum and the performance of teachers.

Participants' suggestion for in-service training

Participants were asked the question, "What do you think could be done to make in-service training for Agricultural science teachers more relevant to their job as classroom teachers?" The results of the study revealed that 100% of the participants indicated that to enhance the relevance of in-service training to their job, it is important to prioritize components such as practical activities, projects, investigations, and subject content knowledge. These elements should be the focal point of the in-service training in order to effectively build capacities among Agricultural science teachers. Here are some of the participants' responses to this particular question.

I feel they need more practical activities. Those workshops should be more practical-oriented (P1). I think the best way is to help the teachers to train them on how they should deliver Agricultural science content to learners, this will mostly focus on workshops, and teachers must also get involved in other excursion trips (P4). Like even myself as a teacher, just planning a project which is relevant to the learners I am teaching, I find it to be problematic (P5).

From the responses of the participants, it is important to understand that to make the in-service training more relevant the components of practical and project investigations must form an integral part of the in-service training. Thus, there is need to develop in-depth the identified components of the teachers' in-service program such as practical activities, projects design, investigations, and subject content knowledge which are highly emphasized in the teaching and learning objectives of the revised BEC. The findings of this study are in agreement with the opinion by Daluba (2013), in the study on the "effect of demonstration method of teaching on students' achievement in Agricultural science". The author opined that to ensure maximum attention, interest, and improve learners' performance, teachers must be competent in carrying out practical activities and projects in their classrooms, instead of depending largely on a conventional teacher-centered approach.

Therefore, in-service training is important for continuously equipping teachers with the necessary competencies required to conduct practical and project assessments in their classrooms. Since Agricultural science is a subject that involves practical-oriented learning, it is crucial to ensure that teachers are fully equipped with the necessary skills and knowledge to assess the practical and project components of the curriculum effectively.

Agricultural science teachers' pedagogical skills in the study area

Preferred teaching method

Participants were asked to indicate the teaching methods they preferred to be given attention in the in-service training program and to indicate the reason why the identified teaching methods should be given in-service training attention. The study revealed that the majority (70%) of the participants indicated that group discussion

method should be considered in the in-service training provided to the teachers, while the rest indicated a combination of theory and practical activities to be given attention. The following are some of the reasons provided by the participants why the identified teaching stood out.

Discussion method will allow the learners to engage positively on a particular topic and eventually learn from each other (P2). In discussion method, I can group my learners into manageable groups, say five learners, then I give them a task to do and then provide feedback to the class on what they have discussed (P3). I want to be able to integrate the discussion method with the demonstration and practical method (P4). I like group work and I am not a teacher-centered person. Group work will enable me to see how far my learners understand the topics that they are given to discuss (P7).

Teaching methods such as group discussion, demonstration and practical methods are relevant for effective teaching and learning in the classroom setting. Khalid Kamil Abdulbaki et al. (2018), noted that group learning creates positive learner performance results, promotes better learner participation, and stimulates self-confidence as well as leadership capabilities among learners in a classroom. Furthermore, Kim (2004), asserted that group discussion could be among the conventional teaching strategies which could be used by teachers to stimulate energetic learning in the classroom. Group discussion method when used during teaching, is an effective way to facilitate learning among learners and also offers the teacher an opportunity to check the learners' understanding of the subject matter (Nystrand, 2006).

In another submission, Peacock (1993), noted that practical and demonstration teaching method should form an important component of in-service teacher training program necessary for Agricultural science teachers to effectively teach in their classrooms. In addition, through the practical and demonstration method, the Agricultural science teacher facilitates, in the process the learners see step-by-step what needs to be done (Daluba, 2013). Njura et al. (2020), further point out that demonstration and practical teaching method increases learners' interest and understanding and consequently promote high achievement rate in a school subject.

ICT use in teaching Agricultural science

Participants were further asked if ICT training is necessary for inclusion in the in-service training provided to the Agricultural science teachers and to give their reasons. From the results obtained, the majority (80%) of the participants indicated that they lack knowledge and skills on how to use such ICT tools and hence, should be included in the in-service training of the teachers. The responses from the participants were surprising because the pre-service teacher training in Namibia include computer literacy that is expected to equip teachers with the basic skills of integrating ICT tools in the classroom teaching regardless of the subject area. In fact, a participant stressed that "I lack the knowledge and skills to use any ICT tools in my teaching" (P7). According to Feras Mohammed Al-Madani and Ibrahim Ali Allafajji (2014), incorporating ICT skills into teacher education will not only reinforce the teachers' pedagogical skills but also to enable them to effectively make use of diverse technologies to make their teaching interesting to the learners. However, effective integration of ICT into the teaching process requires advancing teachers' knowledge, skills and confidence in ICT use and this can effectively be achieved through continuous in-service teacher training (Reid, 2002).

Challenges with preparing, teaching lessons and practical work

Participants were further asked about any challenges they face in preparing and teaching their Agricultural science lessons, as well as in preparing and conducting Agricultural science practical activities. Here are some of the responses from the participants regarding these challenges.

In preparing the lessons, I do not have a problem. However, the only thing that I am having a problem with sometimes, lacking the equipment that should be used during the practical activity. Generally, in planning, preparation, and teaching of lessons I do not have a problem (P2). With regard to the challenges, I have no challenges, also lesson planning and preparation are easy for me. Preparing lesson plans and even finding what teaching needs in agriculture is easy because most agriculture teaching aids and other resources are locally available here, so it is not much of a problem (P5). Preparing lessons, I don't have any challenges (P7).

Although, the responses of the participants suggest that they do not have challenges in lesson preparation, the lack of equipment as indicated by one of the participants could have a significant effect on effective teaching of the lesson no matter how well planned. The findings of the study were not suppressing as all the participants had three years and more of teaching experience, this would have prepared them to effectively prepare and teach their Agricultural science lesson with minimum challenges. In their study on "constraints encountered in teaching

practical agriculture in selected senior high schools in the Sekondi-Tokoradi metropolis”, Darko et al. (2015), revealed that inadequate teaching and learning resources in schools thwarted effective lesson preparation, teaching and conducting of Agricultural science practical activities by teachers.

Furthermore, Darko et al. (2015), stated that the lack of adequate teaching and learning resources in Agricultural science teaching makes it difficult for teachers to take learners through practical work. This suggests that learners only learn the names of the tools and their uses theoretically without having a feel of the tool and how to handle it. This situation was further confirmed by Bilgin (2006), who argues that without adequate teaching and learning resources, teaching and learning in Agricultural science lessons would become inflexible, not interesting, dismal as well as impractical.

Challenges of learners' indiscipline

Participants were further asked if they experienced any challenges of learners' indiscipline during Agricultural science class and whether such challenges if available, require attention under the teacher in-service training program. The results of the study revealed that 67% of the participants indicated that they are some challenges of learners' indiscipline and 33% of the participants indicated that they do not challenges. The following are some of the responses of the participants in relation to this particular issue.

Concerning challenges related to learners' indiscipline, yes, sometimes there are those naughty learners. Sometimes when you are teaching he or she wants to disturb others, but most of the time I usually tell them to keep quiet to allow other learners to concentrate in class rather than disturbing the whole class (P2). Yes, sometimes some learners will not keep quiet as you are talking they will be talking. You tell them to keep quiet they will not (P3). Yes, there are some challenges of learners' indiscipline related to practical work in my class, learners show no interest whenever they are told to do some work in the school garden, they are not interested as if they were forced to take the subject, so I do try to motivate them, but well, I still find it challenging (P11).

From the responses of the participants, it is evident that Agricultural science teachers are experiencing indiscipline among learners in their classrooms. The study identified several classroom-based causes of indiscipline, including learners' lack of interest in the subject, naughtiness, and disruptive behavior such as noise-making during the teaching and learning process. These findings are consistent with the research report by Ofori et al. (2018), who assert that classroom indiscipline problems, including naughtiness and bullying, have become a universal issue. Freeman et al. (2013), state that many teachers do not receive adequate classroom management skills before beginning their teaching careers and feel unprepared for the demands of managing learner behavior in their classrooms. This is similar to the Agricultural science teachers' situation in the study area as the research findings showed that the majority of the teachers reported learners' indiscipline in their classrooms. Additionally, Gunter and Denny (1996), assert that teachers' strong classroom management skills are critical for effective teaching and learning process. It is important to note that disruptive behaviors displayed by learners during the teaching and learning process have a negative impact on the classroom environment (Simuforosa & Rosemary, 2014). Thus, in-service training that equip the teachers with the skills on the best practices of classroom management will be very helpful to the Agricultural science teachers' job performance in the study area.

Implications and suggestions for future research

The findings of this study generally revealed that the Agricultural science teachers in the Zambezi region of Namibia, need in-service training in the areas such as pedagogy (carrying out practical activities, projects and investigations), subject content knowledge, ICT skills and classroom management skills for effective teaching in their classrooms. With the full implementation of the revised BEC which required teachers' best practices in both content and pedagogy, the Agricultural science teachers in their current skill form may not be said to be well-equipped for effective teaching of the curriculum. Thus, developing and implementing targeted in-service training program that addressed the Agricultural science teachers' training needs will capacitate them to effectively implement the curriculum in the study area. However, considering the demand for in-depth subject content knowledge and pedagogy that the revised BEC placed on the Agricultural science teachers, future studies should explore the Agricultural science teachers' training needs in other regions of Namibia. This will enable the MoEAC to develop a country-wide in-service training program that addresses Agricultural science teachers' skill needs for effective implementation of the curriculum across the country.

Conclusions and recommendations

In conclusion, the present study was carried out to explore the views of Agricultural science teachers on in-Service training needs in the Zambezi region, Namibia. It is important to note that in-service teacher training programs should be seen as a necessity among Agricultural science teachers to achieve the national and regional objectives of the education system in Namibia. From the findings of the study, it is evident that in-service training program is important for the Agricultural science teachers in the study area to enhance their teaching skills and knowledge for effective implementation of the revised curriculum. It is important to understand that teachers are faced with numerous challenges due to contemporary issues that are associated with curriculum reforms and it is thus imperative for teachers to equip themselves with up-to-date subject content knowledge and skills. Besides that, the appropriateness of in-service teacher training is essential to ensure that positive impacts are achieved by the teachers. Face-to-face interviews with the participants were used to collect the required data, and the findings of the study strongly support the main objectives of this study. The study recommends that the regional education directorate in the Zambezi region should set up a policy for continuous in-service teacher training program for teachers in their annual financial plan for improved teacher performance in the region. Further, in order to make in-service teacher training program successful, they ought to be continuous.

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