

## Methods of Receiving In-Service Training for Junior Secondary Agriculture Teachers in Eswatini

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### Abstract

The purpose of the study was to identify methods of receiving in-service training for Junior Secondary Agriculture Teachers in Eswatini (Swaziland). The study was a descriptive survey using simple random sampling to get Agriculture Teachers (n=180). The target population was all Junior Secondary Agriculture Teachers in Eswatini (N=340). A self-administered questionnaire was used for collecting data. One lecturer from the Department of Agricultural Education and Extension and two agriculture subject inspectors established the face and content validity of the questionnaire. The reliability coefficient was 0.92. Descriptive statistics were used to analyse the data. Findings of the study revealed that field trip, workshop, demonstration and seminar were the most method used; and workshop was the preferred method of in-service training for Junior Secondary Agriculture Teachers in Eswatini. Therefore, this study recommended that workshops should be used to provide in-service training to Junior Secondary Agriculture Teachers in Eswatini.

**Key words:** Adult Learner, Agriculture Teacher, In-Service Training, Junior Secondary, Methods of Teaching

### Introduction

Effective teaching requires the use of teaching methods that work as recipe to maximise the learning outcome (Davis, 1999); so is effective in-service training. This literary means that no matter how excellent, the content is for in-service training; if the choice of in-service delivery method is not carefully made, then the whole endeavour is futile. In-service training programmes are helpful in preparing teachers to be successful (Joerger, 2002). As a result of the changes within the realm of Agricultural Education, most agricultural teachers require some form of in-service on a regular basis to be able to cope with the changing demands of the profession (Roberts & Dyer, 2003).

Adults learn in a variety of ways and there are a variety of educational delivery formats and teaching methods to be employed in the learning process (Birkenholz, 1999). Teacher educators have used various methods to determine the in-service educational needs of agriculture teachers (Davis & Jayaratne, 2015). Conlan, Grabowski and Smith (n.d.) revealed that adult learning involves action learning, experiential learning, self-directed learning, and project-based learning. Action learning is an approach that emphasises action as classroom training is considered inefficient (Stewart, 2001). It is an approach that involves working with, and developing people, using work on a real project or problem as the way to teach (O'Neil, 2000). Experiential learning operates on the premise that individuals learn best by experience, thus, termed as "learning by doing" (Kolbs, 1984). Self-directed learning involves the process in which individuals take on the responsibility for their own learning process by diagnosing their personal learning needs, setting goals, identifying resources, implementing strategies and evaluating the

outcomes (Rager, 2003). Lastly, project-based learning entails students working in groups to solve challenging problems that are authentic and often interdisciplinary (Barrows & Tamblyn, 1980).

Jarvis (1995) categorised teaching methods employable to adult learners (such as teachers) as either tutor-centred or learner-centred teaching method. The tutor-centred (teacher-centred) methods are demonstration, guided discussion, controlled discussion, lecture discussion, lecture (talk or speech), mentoring and tutorial. On the other hand, student-centred methods are brain storming, buzz-group, debate, fishbowl, group discussion, interview, listening and observation, panel, project and case studies, role play, simulation and gaming, seminar, snowballing, therapy groups, visits, tour and fieldtrips, workshops. In addition, Jarvis further highlights individualised adult learning methods such as assignments, computer assisted learning, contract learning, experiential learning personal tutorial, self-directed learning, practicals and personalized system of instruction. Similarly, Birkenholz (1999) categorised the teaching methods in the following manner: one way communication (lecture or presentation, resource person, symposium, panel discussion, computer aided instruction); two way communication (group discussion, case study, problem solving, role playing, brain storming) and laboratory or skill attainment (demonstration, tour or field trip).

Karge, Phillips, Jessee and McCabe (2011) identified the following methods in providing in-service training: Think-Pair-Share, Tell -Help-Check, Give One, Get One, and the Immediate Feedback Assessment Test. Birkenholz (1999) also found that the following teaching methods can be used when teaching adults (teachers): informal meetings, tours, workshops, institutes, formal courses (credit or non-credit), seminars, conferences and conventions. Johnson (1999) identified workshops, seminars, conference, lectures, demonstrations, panel presentation, film, field trip, and vacation institutes as the most common types of in-service training. The In-service Training and Assistance for Namibian Teachers (INSTANT) provided the following strategies for in-service training: full-time training, cascade dissemination, advisory or mentorship scheme, expatriate (experts), diffusion by workshop and distance learning.

Peacock (1993) singled-out diffusion by workshops as an appropriate starting strategy for in-service training. On review and evaluation, it was suggested that the development of mentorship schemes with advisory teachers should have been started at the same time, rather than left as a follow-up strategy. Peacock also suggested that if stage model of teacher development and change are correct then cascade strategies cannot succeed as the targeted teacher typically hears the message only once. Lastly, part-time or evening in-service training and long vacation or sandwich in-service training were reported as common delivery methods of in-service training (Esu, 1991).

Starc, Rodica and Konda (2015) approached the in-service training of managers in tourism using methods of teaching, forms of teaching and organisational forms in the education and training. The teaching methods used were: organised conversation, discussion, role play, lecture, problem solving, etc. The forms of teaching were: frontal, group work, pair work, individual work and the organisational forms were seminar, course, workshop, educational meeting, e-learning, etc. Starc et al. (2015) found that the most suitable form of teaching was group work. Role play, case study and discussion were identified as the most preferred methods of teaching while workshops and seminars were the preferred organisational forms.

Jerin (2011) documented four methods of presenting the subject matter (i) telling method [lecture method, discussion method, and storytelling method]; (ii) doing method [project method, problem solving method, and textbook method] (iii) visual method [demonstration method and supervised study method] and (iv) mental method [inductive method, deductive method, analysis method, and synthesis method]. It can be noted that due to the outbreak of Covid 19, online methods are imperative (Tsikati, Dlodlu & Mhlanga, 2021). Thus, Chang and Downes (2011) reported traditional teaching methods are inadequate to provide in-service training effectively to the changing clientele but innovative teaching methods are necessary. Teachers have a positive attitude towards online education method of receiving in-service training because it enables a flexible environment (Sezer, Karaoglan & Yelmaz, 2014).

Sihlongonyane (2016) found that Primary Agriculture Teachers in Eswatini preferred the following methods for providing the in-service training: workshop, educational tours, demonstration, resource person, simulation, seminar, written booklets, conference, problem solving, field shows / field days, open days and hand-outs. Similarly, the In-service Education and Training [INSET] (2015) used the following methods of in-service training in Eswatini: (i) peer teaching, (ii) lecture method, (iii) discussion, (iv) brainstorming, (v) videotaping, (vi) panel discussion, (vii) case studies, (viii) role playing, (ix) surveys, (x) guest speaker, (xi) value clarification, (xii) question and answer, (xiv) field method, and (xv) demonstration. Tsikati and Mncina (2022) conducted a study on the Inservice training for Junior Secondary Agriculture Teachers in Eswatini. However, there is no study that has been conducted on the preferred methods of receiving the in-service training for Junior Secondary Agriculture Teachers in Eswatini. Therefore, conducting this study was imperative.

The purpose of the study was to identify methods of receiving in-service training for Junior Secondary Agriculture Teachers in Eswatini. The objectives of the study were:

1. to describe respondents by demographic characteristics and background information.
2. to describe the in-service training methods used for Junior Secondary Agriculture Teachers
3. to identify the in-service training methods preferred by the Junior Secondary Agriculture Teachers
4. to find-out the duration of in-service training preferred by Junior Secondary Agriculture Teachers

### **Theoretical / Conceptual Framework**

Merriam (2001) stated that there is a “mosaic set of theories, models and sets of principles and explanations that, combined, compose the knowledge base of adult learning” (p. 3). In-service training provided to teachers as adults should follow the same models, principles, and delivery methods used for adult learners. Knowles (1984) postulated that the teaching of adult learners (andragogy) should consider the following principles: (i) adults are more self-directed, (ii) adults draw upon their reservoir of experience for learning, (iii) adults are ready to learn when they assume new roles, and (iv) adults want to solve problems and apply new knowledge immediately. Similarly, Merriam (2001) made the following five assumptions underlying andragogy: the learner has an independent self-concept and can direct his or her own learning, the learner has learning needs closely related to changing social roles, the learner is problem-centered and interested in immediate application of knowledge and is motivated to learn by internal rather than external factors. Therefore, any in-service training method for teachers in Agricultural Education should cater for these principles of andragogy.

Esu (1991) asserted that for in-service training to be successful: (i) teachers should decide their own needs, (ii) the administration and management should provide required support, (iii) colleagues should discuss and share ideas, (iv) evidence of gains in student learning should be readily or quickly available, (v) change in teachers practice should be evaluated systematically, (vi) there should be an assessment of learning outcomes, and (vii) coaching should be used such that budgetary provision is built in. Tuthill, Seidel and McClure (1987) noted that non-traditional approaches to in-service teacher education are necessary when restructuring schools. In-service training programmes are preparing teachers to examine and assess their own practice, to become inquiring, reflective practitioners (Hopfengardener & Leahy, 1987). Tuthill et al. also stated that on-going professional development replaces the sporadic, short-term staff development activities and pave ways to in-service programmes that are research based, reflecting a significant reform trend that roots school improvement efforts in sound theoretical soil. Teacher isolation has been identified as a major deterrent to purposeful change in schooling (Hopfengardener & Leahy, 1987).

### **Methodology**

The design of the study was a descriptive survey targeting agriculture teachers (N=363) in Eswaini. A sample of 180 Junior Secondary Agriculture Teachers was drawn using simple random sampling technique. A questionnaire was used to collect data on in-service training needs for the Secondary Agriculture Teachers in Eswatini. A six-point numerical scale; ranging from strongly disagree to strongly agree was used to measure the variables of the study. Content and face validity of the instrument were addressed by one lecturer from the department of Agricultural Education and Extension at the University of Eswatini and two agriculture subject inspectors. Thirty Agriculture Teachers were used to establish the inter-item reliability of the instrument using Cronbach's Alpha. The reliability coefficient was .92; meaning

the instrument was 92% reliable. The reliability coefficient was acceptable since the overall reliability was more than 0.70 (Tuckman, 1999). Descriptive statistics such as frequencies, percentages, mean and standard deviation were used to analyse the data. A mean value of 3.5 and above was used as cut off point indicating that the preferred method of receiving in-service training.

## Findings and Discussion

### *Demographic Characteristics and Background Information*

Table 1 depicts that there were more female teachers (n=108, 60%) than male teachers (n=72, 40%). Most of the respondents were aged between 31-40 years (n=94, 52.2%). One hundred twenty respondents (66.7%) were married and 42.2% (n=76) were from government schools. Also, 97 Agriculture Teachers were from rural schools (n=50, 53.9%). Most of the respondents (n=138, 76.7%) had a Bachelor's degree in Agricultural Education and 33.3% of the respondents (n=60) had taught at most for five years.

**Table 1: Demographic characteristics and background information of respondents**

| Items   | f   | (%)  |
|---|-----|------|
| <b>Sex</b>                                      |     |      |
| Male  | 108 | 60.0 |
| Female  | 72  | 40.0 |
| <b>Age</b>                                      |     |      |
| 21-30 years                                     | 49  | 27.2 |
| 31-40 years                                     | 94  | 52.2 |
| 41-50 years                                     | 27  | 15.0 |
| 51-60 years                                     | 10  | 5.6  |
| <b>Marital status</b>                           |     |      |
| Single  | 60  | 33.3 |
| Married   | 120 | 66.7 |
| <b>Type of school</b>                           |     |      |
| Community-owned                                 | 34  | 18.9 |
| Mission-owned                                   | 31  | 17.2 |
| Government-aided mission                        | 39  | 21.7 |
| Government                                      | 76  | 42.2 |
| <b>School location</b>                          |     |      |
| Rural   | 97  | 53.9 |
| Semi-urban                                      | 50  | 27.8 |
| Urban   | 33  | 18.3 |
| <b>Teaching qualification</b>                   |     |      |
| Diploma not in Agricultural Education           | 5   | 2.8  |
| Bachelor's degree not in Agricultural Education | 11  | 6.1  |
| Masters' not in Agricultural Education          | 1   | 0.6  |
| Diploma in Agricultural Education               | 16  | 8.9  |
| Bachelor's degree in Agricultural Education     | 138 | 76.7 |
| Masters in Agricultural Education               | 9   | 5.0  |
| <b>Teaching experience</b>                      |     |      |
| 1-5 years                                       | 60  | 33.3 |
| 6-10 years                                      | 51  | 28.3 |
| 11-15 years                                     | 35  | 19.4 |
| 16-20 years                                     | 14  | 7.8  |
| 21-25 years                                     | 7   | 3.9  |
| 26-30 years                                     | 8   | 4.4  |
| Above 30 years                                  | 5   | 2.8  |

### *In-Service Training Methods Used for Junior Secondary Agriculture Teachers*

Table 2 presents methods of in-service training that can be used for training Junior Secondary Agriculture Teachers. All items were found to be methods used to provide in-service training for Junior Secondary Agriculture Teachers in Eswatini. The most prominent in-service training methods were: field trips (M=5.66, SD=0.55), workshops (M=5.57, SD=0.60), demonstration (M=5.37, SD=0.85), and seminars (M=5.19, SD=0.72). Correspondingly, INSET (2015) used the following methods of in-service training: demonstration, field methods, lecture and discussion. Magagula (2005) reported that the Ministry of Education and Training in Eswatini used the following methods of in-service training: demonstration, workshops, seminars, field trip. Similarly, Esu (1991) reported expatriate and workshop; while Johnson (1999) identified workshops, seminars, conference, lectures, demonstrations, panel presentation, field trip, and vacation institutes as methods of in-service training. Birkenholz (1999) found that the following

teaching methods can be used when teaching adults (teachers): informal meetings, tours, workshops, institutes, formal courses (credit or non-credit), seminars, conferences and conventions.

**Table 2: Methods of in-service training**

| Items                 | M    | SD   |
|-----------------------|------|------|
| Field trip            | 5.66 | 0.55 |
| Workshops             | 5.57 | 0.60 |
| Demonstrations        | 5.37 | 0.85 |
| Seminars              | 5.19 | 0.72 |
| Panel presentation    | 4.98 | 0.89 |
| Conference            | 4.92 | 0.85 |
| Vacation institutions | 4.86 | 0.81 |
| Lectures              | 4.37 | 1.18 |
| Social media          | 4.18 | 1.21 |
| Overall               | 5.01 | 0.85 |

**NB:** The rating scale was 1=strongly disagree, 2=disagree, 3=slightly disagree, 4=slightly agree, 5=agree, 6=strongly agree

***In-Service Training Methods Preferred by Junior Secondary Agriculture Teachers***

Table 3 presents preferred methods of in-service training. The findings show that most of the Junior Secondary Agriculture Teachers preferred workshop (n=81, 45%) and field trip (n=40, 22.2%) as the delivery methods for in-service training. It is worth noting that the workshops and field trips were reported as methods used to provide in-service training for agriculture Teachers in Eswatini. Similarly, Sihlongonyane (2016) also reported that workshop and field trip were the most commonly used in-service training methods for Primary Agriculture Teachers in Eswatini. Additionally, Sihlongonyane also reported the following as preferred methods of receiving in-service training needs for Primary Agriculture Teachers: educational tours, demonstration, resource person, simulation, and seminar, written booklets, conference, problem solving, field shows / field days, open days and hand-outs. Affirmatively, Starc et al. (2015) reported that workshops and seminars were preferred forms of in-service training.

**Table 3: Preferred methods of in-service training for Junior Secondary Agriculture Teachers in Eswatini**

| Method of In-service training | f  | %    |
|-------------------------------|----|------|
| Workshop                      | 81 | 45.0 |
| Field trip                    | 40 | 22.2 |
| Demonstration                 | 23 | 27.7 |
| Conference                    | 18 | 10.0 |
| Seminar                       | 18 | 10.0 |

***Duration of In-Service Training Preferred by Junior Secondary Agriculture Teachers***

Figure 1 depicts that a majority of Junior Secondary Agriculture Teachers preferred that the duration of the in-service training should be one week (n=91, 50.6%). Esu (1991) was not specific on the duration; instead argued that the in-service training should either be part-time or during the long vacation. Similarly, Magagula (2005) reported that the Ministry of Education and Training in Eswatini used full time training at a local institution, full-time learning internationally and part time learning. Basically, these sources suggest that the duration of in-service training takes a long time.

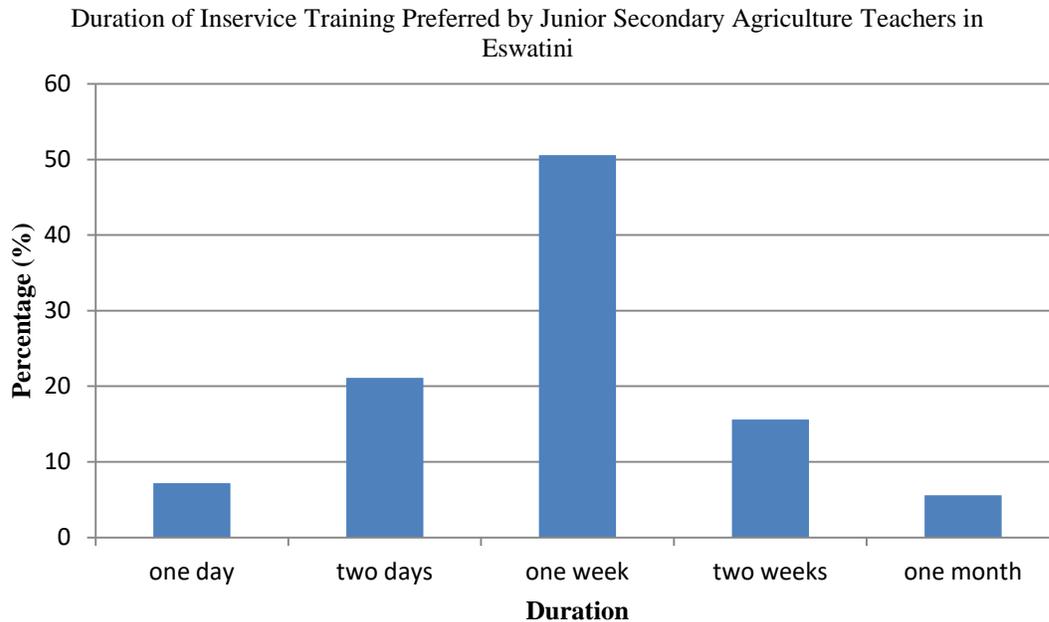


Figure 1: Duration of in-service training preferred by Junior Secondary Agriculture Teachers in Eswatini

### Conclusions and Recommendations

Workshops, field trips, demonstrations, seminars, panel presentation, conference, vacation institutes, lectures and social media can all be used for providing Junior Secondary Agriculture Teachers with in-service needs. However, workshop and field trip for duration of one week was the most preferred method of in-service training for Junior Secondary Agriculture Teachers in Eswatini. Therefore, this study recommended that in-service training for Junior Secondary Agriculture Teachers in Eswatini should be provided through workshops and field trips. The study also recommended that the duration of the in-service training should be one week.

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