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Investigating the Impact of a Proposed Training Programme on Omani Teacher-Trainers' Knowledge and Perceptions toward Co-Training

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Abstract

This study investigates the impact of a six-session training programme designed based on innovative training design principles to raise Omani teacher-trainers' knowledge of co-training and foster their perception of it as a tool for PD. A quasi-experiment design was adopted in this study, where the training programme represents the independent variable, and the knowledge and perceptions of participants represent the dependent variables. A pre-post-test was used to collect data to measure the training impact including a) a knowledge test and b) a perception scale. The findings revealed significant statistical differences in both dependent variables between the pre and post-test results. This also showed that although there were positive perceptions of co-training before training, participants' positive perceptions of co-training became even stronger. The study recommends that this experiment should be repeated to other TTs in other regions in Oman to evaluate its effectiveness further.

ملخص البحث

تهدف هذه الدراسة الى قياس مدى فاعلية برنامج تدريبي مبني على أسس تصميم التدريب الفاعل ويهدف الى رفع معرفة المدربين التربويين في سلطنة عمان بالتدريب التشاركي وتجويد توجههم له كأداة فاعلة للإنماء. وتتبع هذه الدراسة المنهج شبه التجريبي لمعرفة تأثير البرنامج التدريبي على المعرفة والتوجه نحو التدريب التشاركي لدى مجموعة من المدربين التربويين. تم استخدام اختبار قبلي وبعدي لقياس تأثير البرنامج ويتكون الاختبار من أ) اختبار معرفي وب) مقياس توجه. وتم تطبيق البرنامج التدريبي على المدربين التربويين بمحافظة الداخلية بحضور ١٧ مدربا من مختلف التخصصات.

أظهرت نتائج الدراسة وجود فروق ذات دلالة إحصائية بين متغيري المعرفة والتوجه عند مقارنة نتائج الاختبار القبلي والبعدي لكلا المتغيرين لصالح البرنامج التدريبي. كما أظهرت النتائج بأنه من الرغم أن توجه المدربين كان إيجابيا قبل حضور البرنامج التدريبي الا ان النتائج أظهرت توجها إيجابيا أعلى بعد حضور البرنامج التدريبي. وخلصت الدراسة ببعض التوصيات أهمها تنفيذ البرنامج التدريبي على مجموعات من المدربين التربويين في محافظات أخرى من أجل قياس فاعلية البرنامج بشكل أكبر.

1. Introduction

Professional development (PD) is inarguably an essential element in teacher-trainers' (TTs) career in order to maintain and enhance the productivity of their work. In addition to the values encountered through it, PD also represents the commitment of individuals to raising their awareness of their work, exploring it further, identifying possibilities and using opportunities for improvement. In-service PD entails facilitating educators to move "forward in knowledge or skills"(Craft, 2000:9) and is essential to help educators deal with the demands of the workplace. Therefore, like other educators, TTs need to seek opportunities for their professional growth.

Once one becomes a TT, they are required to develop certain competencies that can ensure the effectiveness of the work provided. Gauld and Miller (2004) compiled 27 competencies that an effective trainer should possess, some of which are: understanding training and development, blending different training techniques, possessing content knowledge and skills to be taught, demonstrating effective communication skills. These, and more, highlight a need for TTs to work to refine their skills and enhance their knowledge, not only about the content they teach but, more significantly, about training as a profession. Given the important role TTs play in supporting teachers, many studies in the literature emphasise the vital need to improve TTs' performance and promote their PD (such as Ghosh et al., 2012; Wilson, 2000; Essawi et al., 2014; Alaraimi, 2015).

There are many effective techniques and tools to support TTs' PD. Alongside tools to raise intellectual comprehension and experiential understanding, cooperative or collaborative development opportunities are emphasised in the literature on PD (e.g., Edge, 2005) as these allow trainers to discuss thoughts and practices with other professionals. PD activities that have been advocated, emphasise the role of cooperation with others including mentoring, peer observation, professional development of communities as well as co-training. Co-training, the focus of this article, is similar to team teaching, which entails two or more TTs working together to plan, deliver and evaluate the training of the same group of trainees at the same time. Co-training is a PD method that can help individual practitioners learn from their practice as well as from peers. Enhancing TTs' knowledge and perceptions of the benefits of

cooperative work is a necessity. Thus, to promote co-training and to ensure that it is of high quality and seen as beneficial to TTs, there is a crucial demand to involve TTs in a training programme that aims to enhance their knowledge and perceptions of such a collaborative method.

Training programmes should be designed based on effective training design principles to ensure the intended impact on the targeted trainees. Tuncel and Çobanoğlu (2018) claim that the traditional approach of training, which is mainly concerned with the "transmission of knowledge" has been criticised, and there is a call for a more "functional" training that is "planned systematically" (p.171). Uysal (2012: 15) discusses the characteristics of effective training programmes. She mentions features such as involving participants to be the centre of the training programme by involving them in both planning and execution, providing "experiential activities" where trainees are exposed to models of techniques and methods, ensuring collaborative healthy working environment, using adequate resources, handouts and training materials.

TTs in different specialism in Oman acknowledge the importance of raising their knowledge and improving their training skills through participating in different PD events. They seek opportunities to be involved in different collaborative PD tools such as peer observation, mentoring and co-training. Therefore, it is important to raise these TTs awareness of such collaborative tools in order to help them adopt these tools successfully and increase the benefits they can gain from participating with other professionals in the same field.

Therefore, a training programme is designed based on innovative principles in training to raise Omani TTs' knowledge of co-training and to foster their perception of it as a tool for their PD. To evaluate the effectiveness of the training programme in fulfilling the purposes, it is designed for (raising knowledge of co-training and fostering trainees' perception of it as a PD tool), it requires that the output from this programme is evaluated. Hence, this research paper attempts to answer the following two research questions:

1. Is there a significant difference between the knowledge pre-test and post-test mean scores of the trainee TTs?
2. Is there a significant difference between the perception pre-test and post-test mean scores of the trainee TTs?

The following section highlights the main principles of the innovative training design. This also includes identifying process choices in training design which identifies the roles of trainers and trainees and the type of input used. Based on these principles and process choices, the design of the training programme was done.

1.1 Principles Underpinning the Design of an Effective Training Programme

Guskey (2000, p.23) states that for training to be an effective PD activity, it must focus on awareness-raising, expanding knowledge, and developing skills. This is important in order to gain "attitudes and values in a holistic way" (Tuncel & Çobanoğlu, 2018, p.171). Moreover, training should be based on targeted educators' needs, consist of contemporary and practical content, follow the andragogy principles where trainee-TTs are active participants, and the activities should be designed for this purpose.

The reflective model in training is seen as a practical model to follow. Wallace (1991), comparing the three models in training: *the craft model*, *the scientific model* and *the reflective model*, praises the latter for the opportunities it provides to enable trainees' to make a connection between "received knowledge" and "experiential knowledge". Wright and Bolitho (2007) argue that reflection is "a vital part of the training experience" (p. 25). They refer to this important element in training design as "awareness-raising activities" (p. 27). These refer to structured and guided reflection activities that help trainees derive meaning and gain knowledge.

Oztirk (2019) discusses the important features of a successful and innovative training model for PD. From there, it is clear that activities to encourage reflection, questioning everyday practice and exploring beliefs are crucial. Trainees also should be actively involved in training. In addition, it is important that trainees find the content coherent and meaningful. This issue in training design is referred to as the interconnection between theories and practice. Rich (2018) highlights seven steps to create this interconnection between theory and practice, some of which are the use of both 'local knowledge' and 'external knowledge' and planning for the implementation of new knowledge, as shown in table (1) below.

Table (1). *Steps to the interconnection between theory and practice*.

Step 1	Introduce the focus of the session (e.g., using games) and invite participants to reflect on a past or recent experience related to the focus that they have had (as a learner or teacher).
Step 2	Ask them to interpret or explain the experience (e.g., their feelings/challenges/successes.
Step 3	Listen to other participants' experiences and look for points of similarity and difference (local knowledge).
Step 4	Read or listen to input from theory or research on the session focus and/or watch a model demonstration of effective practice (external knowledge).
Step 5	Process the various opinions and viewpoints to derive new or revised perceptions and knowledge.
Step 6	Invite participants to reflect on new ideas to try out in future practice.
Step 7	Time permitting, participants can plan how they will implement new ideas and undertake micro-teaching.

(Rich, 2018, p.56 based on Malderez and Wedell 2007)

These steps echo how Wright and Bolitho (2007) perceive learning in a training programme. Following Kolb's (1984) learning cycle, their vision of learning cycle through attending training (see figure 1 below) highlights the importance of participants' experiences and activating "what participants have brought with them to the course in terms of professional concerns, knowledge, ideas, beliefs and attitudes …" (p.24). Different activities can be used to help participants examine these important aspects. This includes the provision of new experiences they have in the training room, which are "shared experiences" and the opportunity to reflect on these. The learning cycle also comprises aspects that focus on awareness raising to help participants "shift from individual to collective talk about the experience" (p.27). This also helps to review the experiences and make meanings. Through this, "Trainees can be

assisted in moving forward towards understanding what their experiences, past and current, might mean, and examining the personal and methodological bases of their practices as teachers or trainers" (p.28). Trainees should be led to make sense of the experience through different training activities. Discussion of ideas in small groups, receiving constructive feedback from peers and tutors and asking questions that can raise understanding can help trainees explore and make sense of new ideas. These can, then, move from abstract ideas to concrete experiences. Experimenting is another crucial area in the learning cycle in training. Experimenting, such as through micro-teaching (micro-training in the case of this programme), can provide good chances for trainees to apply what they learn and explore the practicality of what they learn.

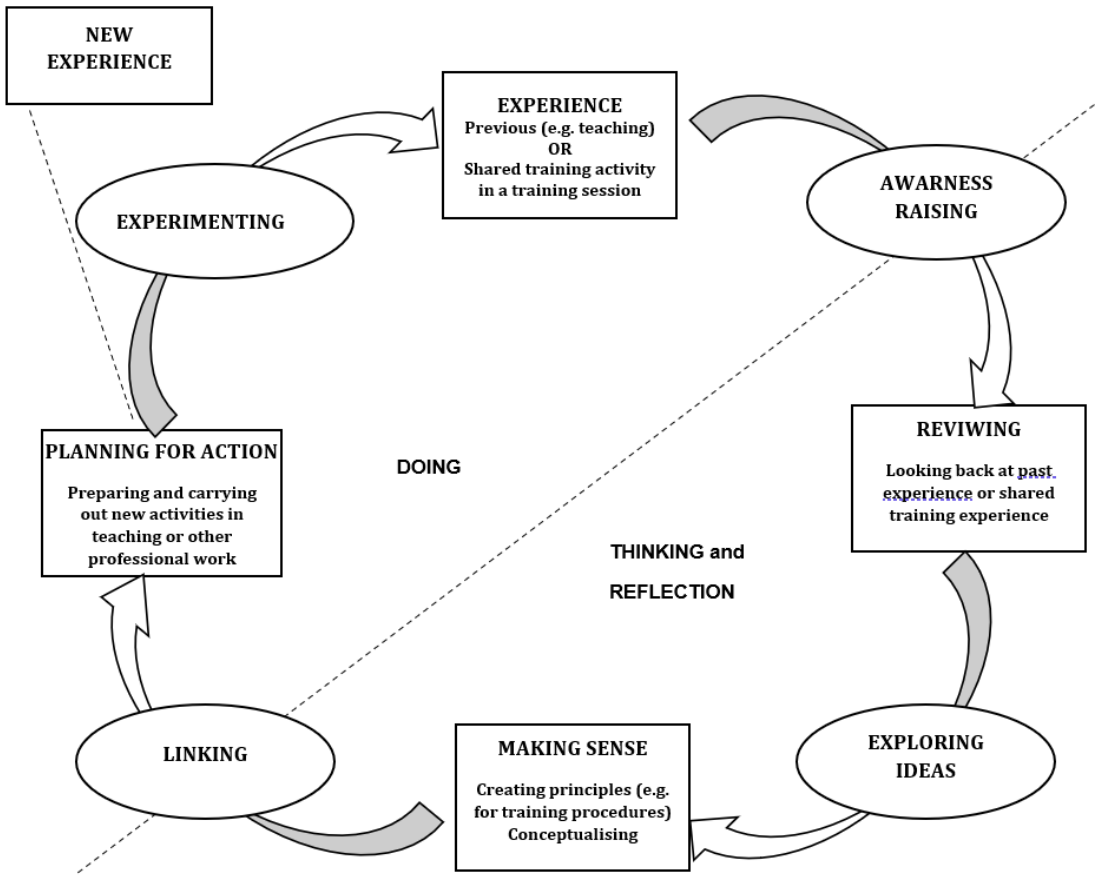

Figure 1. *The Learning Cycle in Training (Wright and Bolitho 2007, p.33)*

1.2 Process Choices in the Programme Design

Dealing with TTs as trainees, the co-training programme should have its unique characteristics, one of which is the careful selection of the training process. First of all, the programme adopts a "loop input" approach which indicates that "learning about teaching can happen while you're being taught" (Woodward, 1988, cited in McGrath,1997, p.168). The loop input approach means that "content and process are in perfect congruence" (ibid, 169). For this co-training programme, this approach is used throughout the programme. This means that this programme is about co-training and provides an experience of co-training as two trainers deliver this programme using the co-training model and implementing all co-training approaches (six approaches) throughout the six sessions.

Another important element is the choice of process options. This refers to how the programme's content is processed and delivered to achieve its objectives. McGrath (1997) makes a helpful distinction between macro-level process choices (feeding, leading, showing, throwing) and micro-level process choices (lectures, reading texts, questioning, awareness-raising activities, demonstrations, and micro-teaching). The following figure (2) illustrates this.

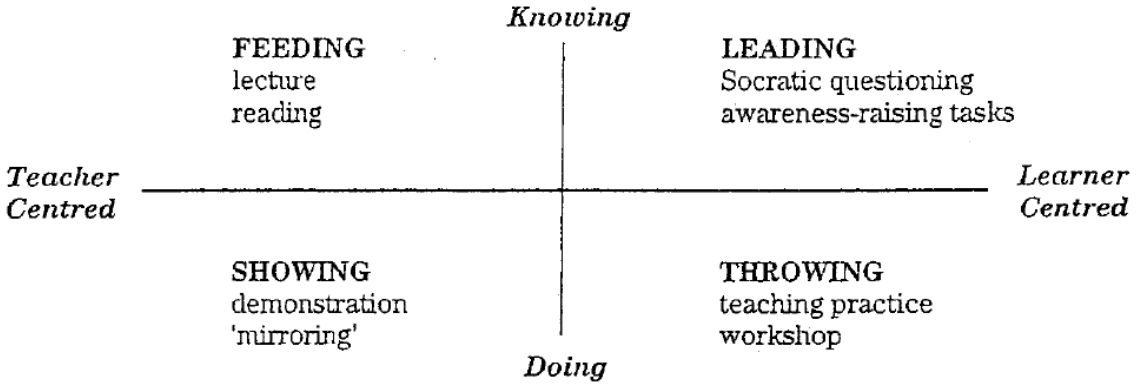

Figure 2**.** *Process categories and process options (McGrath, 1997, P.165*

As it can be seen from the figure, some processes focus on knowing (the upper half), while others focus on doing (the lower half). From another perspective, some of these processes follow the learner-centred approach (leading and throwing), and in some cases, the trainer is dominant (feeding and showing). In designing a training programme, the choice of the process is determined by the objectives of the programme. Focusing on raising participants' knowledge, feeding and leading are the most appropriate processes. Feeding is more of information transfer through a presentation or a reading text, and this can articulate the theories of the topic

discussed. In the same category, leading means guiding trainees towards knowledge using questioning techniques to raise awareness or providing tasks to help trainees concede an issue.

When the focus of the training is on enhancing participants' skills or putting the elements learnt into practice, “doing” is the category to follow. The differences between the two processes, “showing” and “throwing”, as can be noticed from figure (2), is that the first is a demonstration of practice done by the trainer/s while the latter is the application done by the trainees which can take the shape of micro-teaching in a training room.

2. Methodology

In order to establish the impact of the training programme, which is designed based on the above principles, this study follows a quantitative approach and adopts a quasi-experiment research design. The one-group pre-post-test design was used to evaluate the effectiveness of the independent variable (the training programme) in enhancing the dependent variables (knowledge and perceptions of co-training) of a naturally assembled group of TTs. The design was utilised “because of the difficulty often encountered when attempting to form groups by random assignment, quasi-experimental research is quite common in education” (Wiersma and Jurs, 2009, p.16).

A pre-test was administered before the delivery of the training programme. Then, the subjects attended a six-session programme for three consequent days (2 sessions per day). After the programme, subjects were asked to re-do the test (by the end of the day3). This was then evaluated to measure whether there are statically significant differences between the pre-test and post-test results. The following figure summarises the research process:

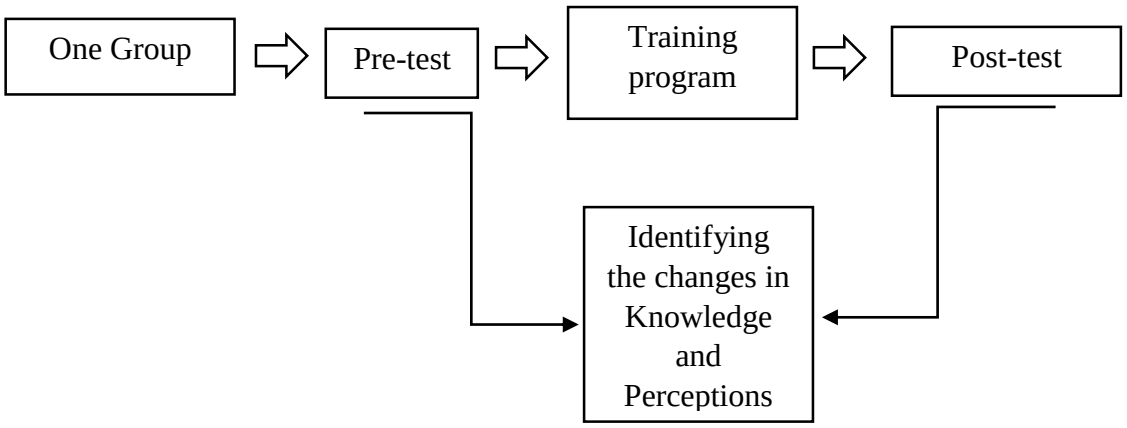

Figure 3. The Research Procedure

2.1 The Co-training Programme

The co-training programme aims at raising participants' knowledge of co-training as an effective tool for their professional development. The objectives of sessions one to six move from focusing on raising knowledge of the concepts, the conditions, the challenges and the procedures of co-training to making justifiable choices of the co-training models to fit certain training events. Moreover, the last session provides an opportunity for participants to put all these issues into practice by planning, conducting and evaluating a micro-co-training session. The following table illustrates the training programme plan:

Table (2). The Co-training Programme Plan

Session	Focus	Objectives
One	The Concept of Co-training	▪ To define the concept of co-training ▪ To discuss the benefits of professional learning communities (PLC)
Two	The Impacts of Co-training on TTs' PD	▪ To identify the roles the TTs play in the training room ▪ To recognise the role of co-training in raising TTs' knowledge and skills of training
Three	Co-training Requirements and Conditions	▪ To identify the main requirements of co-training ▪ To find explanations to the challenges facing trainers in implementing co-training
Four	Co-training Procedures	▪ To recognise the three different stages of co-training ▪ To explore the advantages of each stage in promoting trainers' professionally
Five	Co-training Approaches	▪ To present the co-training approaches ▪ To recognise the roles the co-trainers play in each approach
Six	Co-training Implementations	▪ To plan micro-co-training sessions ▪ To micro-train using different co-training approaches ▪ To reflect on their experience of co-training

Drawing on the principles of effective training highlighted in section (1) above, the six-session co-training programme designed for this study provides opportunities for both "received knowledge" and "experiential knowledge" and making the connection between them. Reflection is considered an essential element in this programme. This is done by providing reflection tasks on experiences (both past and shared experiences in the training room), individual reflection, reflection in small groups, whole-class discussions and reflection on learning at the end of each session. Each reflection task in the programme has its purpose that is congruent with the objectives of each session. At different stages of the programme, participants go through different activities designed to help them explore important elements in co-training. Activities such as situation cards and scenarios of co-training practices do not only question their past practices of co-training but also aim to help them explore appropriate and inappropriate practices and make sense of and prepare for the challenging situations they may go through when implementing co-training and to explore reasons for these and identify ways to address these.

The choices of the processes do not follow a linear sequence: *feeding, leading, showing and throwing;* instead, these processes are drawn on throughout the programme as typical in deciding on process choices (McGrath, 1997). *Feeding* and *leading* are applied in almost all sessions except for the last session, where *throwing* is the dominant process. *Showing* is used throughout the programme, from session 1 to session 6. This is because co-trainers, as mentioned earlier, follow the co-training approach in delivering this programme. Therefore, they demonstrate co-training in every session of the programme.

To be more specific, *feeding* is represented by the presentations given by the trainers, for example, in session 1 (on the concept of co-training) and Session 2 (on the professional development benefits gained by involving in co-training). There is also a reading text that participants are expected to go through and summarise in session 4. In addition, trainees are provided with handouts as resources to refer to as guides when planning to adopt co-training on their own. Leading process can also be seen in the co-training programme through awareness-raising activities used throughout the programme. Examples are the test-your-knowledge activity, training scenarios, situation cards, agree/ disagree statements and others. The *leading* processes in the programme are designed to focus trainees' attention, help them analyse, and facilitate their recognition of important aspects of co-training.

Showing, as mentioned earlier, is seen throughout the training programme through the use of the loop input strategy in all sessions. This is done implicitly in the first three sessions as approaches used by the trainers have not yet been discussed at this stage and are articulated more explicitly in sessions 5 and 6. In Session 5, trainees are given the opportunity to recall trainers' demonstrations of co-training models in Sessions 1-4 and identify the types of approaches demonstrated and the role of co-trainers in each. Finally, *throwing* is used in the last session. Participants apply the knowledge to carry out the co-training approaches in a micro-co-training session.

2.3 Research Instrument

A pre-post-test was designed based on the literature review on co-training and team-teaching. The test includes a knowledge test and a perception scale. Tests are used to "measure an individual's best or maximum performance, whereas an attitude inventory is intended to measure typical performance" (Wiersma and Jurs, 2009, p.362). The main aim of constructing a measurement is to be able to "… provide a reasonable and consistent way to summarise the responses that people make to express their achievements, attitudes, or personal points of view" (Wilson, 2005, p.5).

Part 1: Knowledge test

The development of the instrument of this study was done based on the literature review and consultation with experts in the teacher training field. Part (1) of the test was designed to cover variables of knowledge of co-training that included the knowledge of the concept, benefits, requirements, challenges, stages of application and models (approaches). Although these were not presented in separated sections, each variable of knowledge was tested by three or more items (see Table 2). The test consisted of 30 multiple-choice questions. For each question, there were four options: One correct answer, two distractors and a fourth option, "I don't know".

Table 2. The Distribution of Knowledge Test Items

Question No.	Focus	No. of Questions
1 to 3	Concept	3
4 to 6	Benefits	3
7 to 14	Requirements	8
15 to ١٨	Challenges	٤
١٩ to ٢٣	Stages	5
٢٤ to ٣٠	Approaches	7

Part 2: Perception scale

Part (2) of the instrument (the perception survey) consists of (14) items in which subjects choose one option on the scale to respond to statements (Strongly agree, agree, neutral, disagree and strongly disagree). These cover three dimensions of respondents' perceptions; their beliefs about co-training (*i.e., what participants accept as true or right related to co-training and co-training practices*), attitudes towards co-training (*i.e., the way participants think or feel about using co-training*) and intentions for co-training practices (*i.e., what participants plan to do or achieve regarding co-training*). Table (3) below shows the distribution of the perception items according to these three focusses.

Table 3. The distribution of perception scale items

Question No.	Focus	No. of Questions
1-5-8-11	Beliefs	4
2-3-6-9-13	Attitudes	5
4-7-10-12-14	Intentions	5

The construction of this test, both parts 1 and 2, went through different procedures. Firstly, the test developed was informed by the literature review on team-teaching and co-training, and with reference to the design features of tests, informed by studies that used tests to evaluate the knowledge and perception of participants on co-teaching or training (e.g., Murphy 2011 and Lam 2015). This ensured that the test covered all elements of the knowledge aimed to be tested and ensured that appropriate statements that can measure perceptions of co-training were developed. After this, a first draft of the instrument is established and revised through a logical content analysis. Next, in order to establish the content validity of the test, the researcher sent the instrument to a jury of experts. In addition to their being academics, those experts have wide experience in training, co-training and have worked as trainers' advisors. Based on their recommendations, items of the test were amended. After that, the test was translated into Arabic, as this will be applied to TTs of all subjects and to those whose mother tongue is Arabic. Omani English language regional supervisors then revised the translation of the instrument. The final version of the test was ready then for piloting to test its reliability.

Lauer (2006) states that piloting "can increase the probability that measures are appropriate and that conclusions will be valid" (p.34). Cronbach alpha (sometimes referred to

as coefficient alpha) was used to measure the internal consistency of the test. This requires only one administration of the test, which is test piloting.

The instrument was transferred into a Google form to make it possible to reach TTs across the Sultanate of Oman. A representative (a colleague from the community of English TTs) from each governorate was contacted to help inform TTs of different subjects in their governorate about the survey, disseminate the link to the instrument and receive confirmation of completion. 30 TTs completed the test. The data was then analysed to determine the reliability coefficients of the test items. The analysis was done using split-half and Cronbach alpha computation formulas. The results showed good reliability for the knowledge test (.769) and the perception scale (.967)

This study focusses on raising Omani TTs' awareness about co-training as a tool for their PD and, thus, the selection of subjects should consider representatives of this group. McMillan (2004) stated that "the purpose is to select a sample that will adequately represent the population" (p.108). Thirty of the TTs' population work in the Dakhiliya governorate, from which samples of (20) TTs were selected using a systematic random sampling (the first 10 even numbers out of the list). Due to the pandemic of COVID-19, only 17 of the selected 20 TTs were able to attend the training programme.

Since the same test was administered before and after the programme by the same subjects, a paired sample t-test was done to determine the difference in mean values between the variation in the sample data. Data from the test was processed with SPSS. In addition to this, the effect size was measured for both variables to identify the level of effect placed by attending the training programme.

3. Findings

3.1 The Effectiveness of the Training Programme

This section presents the findings from the pre-post-test of knowledge of co-training in order to show the differences in the results and the effect size of the programme. The findings from this test are triangulated with the findings from the interviews with co-trainers who talked about the training programme and its impact on participants' learning as they perceived it. The second part of this section focuses on presenting the findings of the perception scale. The pre-and post-perception test results were analysed to measure any differences in the way participants perceive co-training as a PD tool due to attending the training programme. This section ends

with presenting the findings that focus on the impact of delivering the training programme using the co-training model on the co-trainers' perceptions of co-training.

3.2 The impact on trainees' knowledge

As mentioned earlier, the knowledge test is divided into six independent variables, namely: concept, benefits, requirements, challenges, stages and approaches. Thus, a comparison is made between the results from the pre-tests and the results of Post-test of the whole test and these six sections. Table (4) below shows the paired sample t-test results.

Table 4.: *Paired Sample T-test for the Pre- and Post-test of Knowledge of Co-training*

Focus	*Test*	*N*	*M*	*Std.*	*df*	*t*	*p-value.*	*d*
Knowledge	*Pre*	*17*	*.5392*	*.14251*	*16*	*15.178*	*.000*	*3.68*
Test	*Post*	17	*.8608*	*.10880*				

Table 4 shows that there was a statically significant increase in the overall knowledge test scores of participants: $t = 15.178$, $p < .001$. The difference in the mean scores is $M = .321$, which indicates a growth in scores in the test of the knowledge of co-training due to attending the training programme. Furthermore, the effect size was found to be $d = 3.68$, which suggests a large effect size according to Cohen (1988).

In addition, the analysis of the paired t-test gives a clear indication of the value of the programme in raising participants' knowledge of each of the six variables. Table (5) shows statistically significant differences in all the tested variables: $p < .001$ for the knowledge of benefits, requirements, challenges and approaches of co-training, $P < .01$ for the knowledge of the concept and $p < .05$ for the knowledge of stages of co-training. These results highlight a great influence of the training programme in raising participants' knowledge of co-training in general and of each of these variables in particular. In addition, calculating the effect size of each variable was necessary to see the amount of impact the training programme placed on these participants. According to Cohen (1988), the measurement of the effect size shows that the impact in all the knowledge variables was large except for the knowledge of stages in which it indicates a good effect size: $d = 0.538$.

Table 5. *Paired Sample T-test for the Pre- and Post-test of the variable of Knowledge of Co-training*

K-Variable	*Test*	*N*	*M*	*Std.*	*df*	*t*	*p-value*	*d*
Concept	*Pre*	*17*	*.6863*	*.32212*				
	Post	*17*	*.9216*	*.18743*	*16*	*2.954*	*.009*	*.716*
Benefits	*Pre*	*17*	*.5294*	*.33456*				
	Post	*17*	*.8627*	*.23743*	*16*	*5.215*	*.000*	*1.26*
Requirements	*Pre*	*17*	*.6103*	*.12408*				
	Post	*17*	*.8676*	*.12079*	*16*	*6.799*	*.000*	*1.65*
Challenges	*Pre*	*17*	*.3529*	*.29393*				
	Post	*17*	*.7794*	*.19530*	*16*	*5.362*	*.000*	*1.30*
Stages	*Pre*	*17*	*.7529*	*.18068*				
	Post	*17*	*.8471*	*.13284*	*16*	*2.219*	*.041*	*.538*
Approaches	*Pre*	*17*	*.3193*	*.25520*				
	Post	*17*	*.8824*	*.14494*	*16*	*13.015*	*.000*	*3.15*

3.3 Impacts on trainees' Perceptions

The perception Likert scale is divided into three sections: beliefs, attitudes and intentions. Each was tested with several items. Significant differences were revealed between the pre-and post-test of participants' perceptions: $t = 3.2$, $p < .01$ (see table 6). Moreover, the effect size was calculated and found to be .783, which suggests a large effect size on trainees' perception of co-training as a tool for their PD.

Table 6. *Paired Sample T-test for the Pre- and Post-test of Perceptions of Co-training*

Focus	*Test*	*N*	*M*	*Std.*	*df*	*t*	*p-value.*	*d*
Perception Scale	*Pre*	*17*	*3.7983*	*.84335*				
	Post	*17*	*4.5462*	*.39281*	*16*	*3.226*	*.005*	*.783*

The analysis of the pre-and post-test results of the perception scale gives more details on the impact of the training programme on trainees' perceptions of co-training. Table (7) shows in more detail the tested perception variables and the results found for each variable (beliefs, attitudes and intentions). Analysing these results can also contribute to our

understanding of the effectiveness of the training programme in fostering participants' perception of co-training as a tool for their PD.

Table 7. *Paired Sample T-test for the Pre- and Post-test of the variables of Perceptions of Co-training*

P. variable	*Test*	*N*	*M*	*Std.*	*df*	*t*	*p-value.*	*d*
Beliefs	*Pre*	*17*	*3.8235*	*.89602*				
	Post	*17*	*4.6912*	*.42875*	*16*	*3.576*	*.003*	*.867*
Attitudes	*Pre*	*17*	*3.7294*	*.88865*				
	Post	*17*	*4.3647*	*.44853*	*16*	*2.531*	*.022*	*.614*
Intentions	*Pre*	*17*	*3.8471*	*.90147*				
	Post	*17*	*4.6118*	*.40293*	*16*	*3.159*	*.006*	*.766*

The results illustrated in table (7) above revealed that the mean scores in the first test ranged between *3.72* and *3.84*, which indicated that the majority of the participants had positive perceptions about the co-training approach before attending the programme. However, administering the test after attending the programme, the mean scores increased to a range between *4.36* and *4.69*. The results revealed that there is a statistically significant difference in all variables: beliefs ($t = 3.576$, $p < 003$), attitudes ($t = 2.531$, $p < .022$) and intentions ($t = 3.159$, $p < .006$). The effect size was $d = .867$ for the beliefs' variable, which indicates a large effect. $D = .766$ was the result found of the effect size for the intentions variable and $d = .614$ for the attitudes, and both indicate a good effect size. Attending the training programme seems to have better influenced most participants' perceptions of co-training as a tool for PD.

4. Conclusion

The findings reveal a statistically significant difference in the results of the knowledge test administered before and after the programme. Post-test results show better scores, and the figures indicate a large effect size of the programme on participants' knowledge of co-training. This indicates the effectiveness of the programme in raising TTs' knowledge of the co-training approach. I believe that this also helps refine any misunderstanding about this method and clarify ambiguities regarding the idea of this collaborative work.

The pre-test of the perception shows that the majority of the participants already hold a positive perception of co-training. After attending the programme, participants' results of the perception test increased, and these show a statistically significant difference between the pre and the post-test. The results were found to show a good effect size of the programme in fostering trainees' perceptions of co-training as a tool for PD. This means that the training programme is also effective in fostering a positive perception of the co-training method as a tool for PD for those TTs.

Although these results give a good indication of the positive impact on TTs' knowledge and perceptions of co-training, this experiment should be repeated in different regions in Oman, and the results should be compared to reach a clearer conclusion. In case this places similar results, this training programme should be delivered to all TTs in Oman to disseminate the knowledge of co-training and help TTs build positive attitudes towards collaborative work represented in this method of PD. In addition, the principles followed in designing the training programme seem to be effective in increasing knowledge and fostering attitudes, and this means that this approach to training design can be adopted. In addition, training programme designers can explore this further by designing training programmes following these principles.

5. References

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