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Research Application Summary

Agricultural show training platforms: Review of training effectiveness and transfer of training to farmers' homesteads

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Abstract

Agricultural shows are a public event conducted annually and serve the purpose, among other things, to promote agricultural knowledge, skills and attitudes to farming communities with a view to improving their farming practices. They facilitate farmers' access to new information, technologies and innovations presented at the shows. Agricultural shows support different agricultural extension tools disseminating knowledge, technologies and agricultural information. It is, however, disappointing that despite the heavy investments made into agricultural shows, empirical evidence attesting to their relative importance in terms of training and farmer empowerment is lacking. Scientific evidence to confirm the extent to which farmers appreciate agricultural shows, learn from them and transfer learned knowledge and behavior back to the household let alone to the farming community is also lacking. This review responds to the key question "Are agricultural shows suitable for training farmers?". Following different theories and conceptual frameworks including Kirkpatrick four-level criteria model of Learning Transfer Systems Inventory (LTSI). This paper reviews possible factors contributing to transfer problems that result in constrained training outcomes being transferred following participation in agricultural shows and a research agenda is proposed in response to the key questions posed.

Key words: Agricultural shows; farmers; training effectiveness; training evaluation; training transfer

Résumé

Les expositions agricoles sont un événement public organisé chaque année et servent, entre autres, à promouvoir les connaissances, les compétences et les attitudes en matière d'agriculture auprès des communautés agricoles en vue d'améliorer leurs pratiques agricoles. Ils facilitent l'accès des agriculteurs aux nouvelles informations, technologies et innovations présentées lors des salons. Les salons agricoles soutiennent différents outils de vulgarisation agricole qui diffusent des connaissances, des technologies et des informations agricoles. Il est toutefois décevant de constater que, malgré les lourds investissements consentis dans les salons agricoles, les données empiriques attestant que leur impact en termes de formation et d'autonomisation des agriculteurs est moindre. Il n'existe pas non plus de preuves scientifiques permettant de confirmer dans quelle mesure les agriculteurs apprécient les expositions agricoles, s'ils en tirent des enseignements et transfèrent les connaissances et les comportements acquises au sein de leurs communautés agricoles respectives. Cette revue répond à la question clé "Les expositions agricoles sont-elles

adaptées à la formation des agriculteurs ?". En suivant différentes théories et cadres conceptuels, y compris le modèle de Kirkpatrick à quatre niveaux de critères de l'inventaire des systèmes de transfert d'apprentissage (LTSI). Cet article passe en revue les facteurs possibles contribuant aux problèmes de transfert des connaissances qui entraînent un transfert limité des résultats de la formation à la suite de la participation à des expositions agricoles et un programme de recherche est proposé en réponse aux questions clés posées.

Mots clés: Expositions agricoles, agriculteurs, efficacité de formation, évaluation de formation, transfert de la formation

Introduction

Agricultural shows are a public event at which new information, technologies and innovations are presented to agricultural audiences for review and to a) persuade farmers about the practicability of the new practices presented so as to motivate them to appreciate and adopt the innovations; b) remove doubts and unfavourable previous attitudes; and c) reinforce previous learning (FAO, 2019). Agricultural shows have been historically portrayed as settings for showcasing agricultural progress made overtime while upholding particular social and cultural norms and values (Paulsen and Staggs, 2004)

Agricultural shows serve the purpose to improve farmers' access to knowledge and skills and facilitate the process of agricultural modernization as they promote awareness, participation and their motivation towards self-sufficiency in food production and, thereby, enhanced education in knowledge and skills (MAAIF, 2016). Agricultural shows have the potential for improving agricultural extension, which is a key driver facilitating farmers' access to information, knowledge, skills, and technologies so critical for improved agricultural performance. Increased agricultural productivity and production lead to improved quality of life (Beyane, 2003). Agricultural shows are often conducted annually as training events in different regions of Uganda alongside the different agricultural extension tools disseminating knowledge, technologies and agricultural information (Karugaba and Agea, 2018).

Agricultural shows are mounted with a focus to build capacity among farmers through, among other things, training and learning. Training events are organized to promote the acquisition of knowledge, skills and attitudes (Salas *et al*., 2012). Training events involve the systematic acquisition of knowledge, skills and attitudes that lead to improved performance at work (Goldstein, 1991). This situation, however, reflects a transient situation that ignores the main objective of training which is enhancing performance in the transfer setting and not that of merely accumulating knowledge. Hence, following training, the goal has to be to positively deliver or transfer knowledge, skills and behavior to the work place, the farming environment, and to create sustainable changes in behavior and cognition so that individuals possess competencies they need to perform their work (Salas *et al*., 2012).

Unfortunately, despite the considerable investments by different organisations in agricultural shows, there have been limited empirical data and studies, if any, documenting benefits, in terms of learning and enhanced farming associated with individual farmers, from particular agricultural show training events. Larsen (2017) reported that agricultural shows have, since their initiation in western Europe more than 200 years ago, been and remain popular annual events though little academic literature is devoted to them. Indeed, Kokko (2011) acknowledged the lack of rigorous

academic research into agricultural fairs though there exist popular publications (cited in Paulsen and Staggs, 2004). It may, therefore, be concluded that despite investments in resources for this event, in terms of development of the agricultural sector, empirical evidence relating to the value of these shows remains scarce. Training, defined as the use of systematic and planned instructions to promote learning, is a response an organisation can undertake to promote learning (Armstrong, 2004) and the learning that occurs must be evaluated and its effectiveness established. Agricultural shows as training events lack the basis to ascertain trainees' progress in the training event and later, in the transfer of training outcomes to farming communities (Axtell *et al*., 1997).

This review is undertaken as a desk study. It highlights conceptual frameworks of training research. These concepts provide the framework for addressing the key research question: "Are agricultural shows suitable for training farmers? To address this overall question, the following subsequent questions need to be addressed, a) What are farmers' perceptions of agricultural shows?, b) What knowledge, skills and abilities do agricultural shows confer and effectively transfer to farming communities?, and c) What challenges and opportunities do agricultural shows have in terms of improved training and training transfer of knowledge, skills and attitudes?

Agricultural shows as a Training Tool for Farming Communities. To begin with, this review identifies agricultural shows as an umbrella term referring to the many forms of agricultural exhibitions including seed fairs, trade fairs, Nation/Monitor farm clinics, Vision Harvest Money Fairs, Nile agriculture and trade fairs, etc. that are mounted on behalf of the Government of Uganda in general and the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), in particular to enhance, promote and advance farmers' knowledge, skills and abilities besides exposing them to potential markets (imports and exports), financing institutions and different innovations-machinery, equipment, seed, etc. (MAAIF, 2016).

Agricultural shows ostensibly benefit farmers through training and capacity building. Extant literature' however, reveals the lack of scientific data or information pertaining to training research involving agricultural shows as a tool covering training and training transfer among farmers (Kokko, 2011; Larsen 2017). Promoters and sponsors of agricultural shows do not therefore have a basis for evaluating let alone continuing to promote shows. This clearly suggests a critical need for researchers to undertake the necessary training research covering agricultural shows to establish its status as an effective extension tool. This is the rationale for this review.

Methodology

This review was undertaken as a desk study based on identified and pertinent literature from different sources. The study sourced reading materials from different databases including Google, Google Scholar and ResearchGate. For several databases e.g. PsycINFO, Business Source Premier, ResearchGate, etc. access was denied but the use of the Digital Object Identifier (DOI) of the particular paper, where provided, enabled access.

The inclusion criterion period for the review ranged between the period 1990 and 2020. These searches enabled the study to access not only primary literature but it also led the study to access gray literature including government publications as well as Masters and Doctor of Philosophy theses and dissertations. In addition, references from the selected materials were also inspected to identify additional literature to augment the review. The following key words were adopted for the search: Training, training effectiveness, training transfer, training evaluation, agricultural shows.

Each English source was reviewed to determine relevance to the study. The assessment looked initially at the abstract and conclusions which were summarized and documented. This information provided the basis to continue or discontinue with further assessments of purpose, methodology and findings-these were summarized and documented. Owing to the paucity of relevant scientific literature on agricultural shows, a situation prevailing up to this day, research questions were established to guide the literature search. This review, thus, attempts to present the different training and learning conceptual make ups and processes that locate agricultural shows as a relevant and valuable agricultural extension tool but for which at least an exploratory research agenda needs to be developed.

Results and Discussion

The training review search results reported in this study revealed very many articles reflecting variable activities in training research conducted between 1990 and 2020. The research review covered the following training constructs (i) Training; (ii) Training effectiveness; (iii) Training transfer; (iv) Training evaluation and training evaluation models, and (v) Factors affecting transfer of training. This report will cover some of these conceptual areas with Baldwin and Ford (1988) framework guiding this study.

Training construct. Training is defined as a planned and systematic set of activities designed to promote the acquisition of knowledge (need to know), skills (need to do) and attitude (need to feel) (Wenzel and Cordery, 2014). The goal of training is to positively deliver or impart knowledge, skills and attitudes to participants. Hence, training commonly sets out to ultimately deliver training outcomes to the work place and, thereby, create sustainable changes in behavior. With this, individuals ultimately achieve competencies they need to perform the jobs for which the training targeted. Training should, therefore, aim at delivering transferable skills (Armstrong, 2014). It produces benefits to individuals, groups of people in a team, organisations and society at large. Accordingly, effective training can lead to improved human capital and improved output (Aguinis and Kraiger, 2001). It follows therefore, that where the employee, e.g. farmer, is little prepared for his/her work, productivity is more likely to be compromised.

The purpose for which training is being conducted needs to be well-articulated in terms of behavior changes to be expected from the training. According to Nielson (2019) cited in Armstrong (2014), training provides knowledge and information through speech, or written word, demonstrations, radio, etc. in such a way that it instructs or teaches a learner. Learning, on the other hand, is the process of internalizing the information acquired through training to enhance the trainees' skills and abilities and make use of them under different contexts. The quality of training is critical and has serious implications on the learning processes. Researchers believe that training is a source of low transfer of learning rates and that if a trainee fails to master a skill during training, he/she cannot master it in practice since training builds a core of learning abilities. Hence it is critical that the purpose of the training is clearly defined in terms of the behavior to be achieved as a result of the training. The focus of the training has to be to develop transferable skills that can be evaluated based on the extent it has achieved its purpose.

Wright and Geroy (2001) reported that employee competences change through effective training programmes and this not only improves overall performance of employees to effectively perform but also to enhance knowledge, skills and attitudes. Sendawula *et al*. (2018) revealed

that training and employee engagement were significant predictors for employee performance and that employee engagement was a superior contributor than training alone. Training activities have considerable positive impact on performance of individuals and teams and can lead to such other outcomes as attitudes, motivation and empowerment (Aguinis and Kraiger, 2009) which is in agreement with Sendawula *et al*. (2018) Additionally, changes resulting from training also lead to improved job performance including acquisition of new skills that further serve to promote job engagements (Aguinis and Kraiger, 2009). Other benefits deriving from training may relate to improved declarative knowledge or procedural knowledge and it may enhance strategic knowledge of participants, i.e., participants being aware of when to apply a specific knowledge or skill (Kraiger *et al*., 1993). Frayne and Geringer (2000) field experimentation in which they administered self-management training (based on lectures, group discussions and case studies), reported achieving higher self-efficacy and out-come expectancy. Performance was also improved and sustained over time. Aguinis and Kraiger (2009) concluded that both individual studies and different meta-analyses support the issue of training as it generates many benefits to individuals and teams in terms of for exaqmple profitability, effectiveness, etc.

Training is a pre-condition for the improvement of knowledge, skills and attitudes of the human resource, which is critical to all organisations. Training imparts new knowledge, skills and attitudes especially in farming communities whose sector is ever changing as innovations are ever being generated. For this to happen, the training needs to be well-prepared and structured so that the proceedings can be effectively delivered and in the form of transferable skills. Poorly conducted training sessions will also deliver poor results and these cannot be translated into the desirable outcomes. Training efficacy is intricately associated with other factors including trainee characteristics.

Training effectiveness. A second concept associated with training recognises that training improves the human resource capacity but that this can only occur when the individual acquires pertinent knowledge, skills, and attitudes and, internalizes, transfers, generalizes and maintains these outcomes at work. In this study, training effectiveness is viewed as the assessment of variables that influence training outcomes at different stages-before, during and after the training process. Kraiger *et al*. (1993) reported that training effectiveness seeks to explain why training did or did not achieve the set learning outcomes. To achieve this, the researcher has to identify and measure the effects of training on the individual, organisation and training related factors on training outcomes (Tannenbaum *et al*., 1993). Factors on training outcomes include individual trainee characteristics such as self-efficacy, motivations to learn and transfer, etc. (Tziner *et al*., 2007). Thus, training effectiveness identifies critical issues to be assessed. Kirkpatrick (1994) added that the reasons for measuring training effectiveness are: to judge to continue or discontinue; to determine the relevance of objectives; to learn how to improve; to justify budget; and to prove its necessity.

Many studies focus was to determine training effectiveness based only on a single training outcome at the end of the training activity (Pineda, 2010). Other researchers including Tannenbaum and Yukl (1992) and Cannon-Bowers *et al*. (1993) suggested that training evaluation could best be conducted as a two stage process at the pre-training and then post-training rather than at the post-training stage only. Bates (2004) noted that many studies paid limited attention to the influence of training characteristics on training effectiveness. Tannenbaum *et al*. (1993) observed that training could not be appropriately measured in isolation of environmental context and hence the need for the inclusion of additional variables. Training effectiveness, ultimately, relates to the achievement

of desired results or training outcomes at the end of the training event. Hence training effectiveness embraces what trainees learn in the training events that become implemented or transferred. Given the ultimate need to establish the effectiveness of agricultural shows as learning events, this review adopts the widely used goal-based Kirkpatrick (1994) training evaluation model out of the many others (e.g. Saks and Burke, 2012). The model is based on four criteria which are:

- Level-1: Reactions criteria: This criterion evaluates trainees' attitude component of effectiveness and consists of trainee attitudes towards the agricultural show training relating e.g. to training usefulness and satisfaction with the training or trainer. It records the participants' subject satisfaction with the training.

- Level-2: Learning criteria: This level evaluates the extent to which participants have learnt training materials and acquired knowledge from the programme. It assesses trainees' success in terms of scope of changes in attitude, knowledge and skills. Hence at this level the researcher seeks some change in knowledge and skills originating from the experience.

According to Kraiger *et al*. (1993) these learning outcomes can be considered to be affective, cognitive and psychomotor/skill-based. Affective relates to acquisition of altitudinal and motivational outcomes; cognition refers to the development changes in intellectual status; and skill-based learning refers to acquisition of technical skills.

- Level-3: Behavior/transfer criteria: The stage refers to knowledge and skills transferred to the job by trainees. The level attempts to determine whether the trainees can apply acquired knowledge and skills in their work environment. Without being transferred to the work environment the training effort cannot have any effect (Alliger *et al*., 1997).

- Level-4: Results criteria: Finally, this stage evaluates the extent to which the agricultural shows improve individual, organisational level and even community outputs/outcomes. Results represent the tail (distal) end of the evaluation of training; the criteria present final evaluation stage that occurs following the trainees' participation in the training event (Kirkpatrick, 1994). Results may include achieving goals, objectives, increased income, productivity, etc.

Concept of Training Transfer. The story of transfer of training is closely associated with Baldwin and Ford (1988). The authors were responsible for formulating the concept of transfer of training that led to the model of transfer that ultimately identified three factors of transfer of training (Vandergroot *et al*., 2019). This model is the most frequently used or alluded to in research involving transfer of training. This model ultimately led to the identification of factors that influenced transfer of training (Baldwin and Ford 1988). These factors are: (i). Individual characteristics; (ii). Training design, delivery and implementation factors; and (iii). Work environment factors (Burke and Hutchins, 2007).

Training transfer as defined earlier is the degree to which trainees effectively apply knowledge, skills and attitudes acquired in a training context to work environment (Baldwin and Ford,1988). Training transfer is conceptualised as a function of two constructs: (i) generalization of learning to setting/situations on the job, and (ii) maintenance of the learning over a period time. Generalization is defined as the ability to apply key principles and skills from the training event by the trainee to the work environment (Ford, Baldwin and Prasad, 2018). This is in line with the goal of training which is to positively acquire, deliver or impart knowledge, skills and attitudes

to trainees and, thereafter to transfer to the workplace. The transfer of maintenance construct, on the other hand, is defined as the continuing use of the newly acquired knowledge, and skills over time (Noe, 2002). The success achieved in training and development can best be judged when the training is transferred and reflected in what trainees apply in the workplace context (Baldwin and Ford, 1988). Any shortcoming in the transfer process leads to skill decay because of inadequate opportunity to apply the knowledge and skills. Therefore, training efforts would not yield anticipated results if the knowledge, skills and attitudes are not fully, appropriately and productively employed in the job-related activities. Transfer of training focus address those factors that interfere with the impact of transfer of training as well as interventions invoked to enhance the training transfer (Aguinis and Kraig, 2009).

Wenzel and Cordery (2014) and several other researchers, observed that organisations, trainees and society invest considerable resources (time, finance and energy) in training engagements with the hope that learned materials would be transferred to the job environment and applied profitably back to improve outputs. Unfortunately, extant research reveals that much of the learning does not survive the transfer back journey to the place of work. For example, a paltry 10% has been suggested as the average rate transferred. Researchers suggest evidence to the effect that rates of transfer depend on the training transmission-interval between end of training and time of transmission (Saks, 2001). Other researchers show that employees transfer up to 40% of their training content immediately after training but this falls off to 25% six- months on and 15% a year later. This decline has been attributed to the transfer problem (Baldwin and Ford, 1988). Broad and Newstrom (1992) observed that the transfer problem relates to little of what is learnt in training being applied on to the job. This transfer problem leads participants failing to improve their behavior and performance at the workplace.

The persistent training transfer problem has been explained with reference to Thorndike and Woodworth theory of identical elements which suggests that the level of training depends on the extent of similarity between the training context and the work/environment performance so that the more similar the two are, the more likely the transfer will occur. Secondly, that the greater the overlap between the two (training context and the work/environment) the greater and higher the chance of transfer (Perkins and Solomon, 1992).

Salas and Cannon-Bowers (2001) summarized research findings on training transfer as follows: (i) organisational learning environment (context) can be reliably measured and will vary in meaningful ways across organisations; (ii) context matters as it sets motivation, expectations and attitude for transfer, etc.; (iii) transfer climate is critical and will impact on the extent to which learning outcomes are used back in the work context; (iv) trainees need resources and space to perform; (v) delays between training and actual deployment may lead to skills decay; (vi) social peer, supervisor, etc. support play critical roles in transfer; (vii) training transfer is a multi-dimensional construct, differing with type of training and how close supervision is. Presented below are brief outlines of the three major factors impacting transfer of training.

Trainee characteristics affecting training transfer. According to Burke and Hutchins (2007), trainee characteristics play critical roles in the transfer of training. The most critical of these characteristics have been singled out as cognitive ability, self-efficacy and motivation. Grossman and Salas (2011) indicated that cognitive ability, self-efficacy and motivation exhibited strong relationship with training transfer. Colquitt *et al*. (2000) reported that cognitive ability positively impacted transfer through skills acquisition and pre-training self-efficacy. However, not all factors

were equally significant. Thus, those showing the strongest and most consistent relationships with transfer of training remain: cognitive ability; self-efficacy; motivation; and perceived ability of training. But for farmers being adult trainees, self-directed learning comes into play as the farmers may be expected to take the initiative to learn, plan, conduct, implement and evaluate their learning experiences (Raemdonck *et al*., 2012).

In meta analytical studies covering different lengths of training, Ford *et al*. (2017) reported that small-moderate relationships were recorded with transfer for cognitive ability, consciousness, pre-training self-efficacy, and motivation. These findings covered the case of transfer for generalization of knowledge, skills and abilities. Training transfer studies for sustainable agricultural intensification in Tanzania revealed that motivation of trainees to learn significantly predicted transfer of training ($p < .01$) for all three models tested (Sseguya, 2018). Miiro *et al*. (2012) in a Learning Transfer System Inventory (LTSI) based-study to identify transfer system factors affecting transfer and application of governance facilitation skills training reported that personal capability to transfer was a highly significant predictor ($p<.01$); this suggested that personal capacity to transfer was a valuable characteristic amongst rural farmers' alliances in Uganda. Muthoni and Miiro (2017) transfer of training study revealed that more than 75% of transfer skills were transferred and that significances for prediction of transfer of skills were recorded.

In addition, the Muthoni and Miiro (2017) evaluation based on the three transfer system factors, revealed that transfer of skills for personal capacity to transfer was again significant for predicted perceived transfer ($p<.05$). Significant results ($p<.05$) relating to transfer design factors and personal capacity to transfer were also observed. The final analysis involving personal capacity to transfer training did not yield any significances. Their conclusions were that LTSI factors remained relevant in training transfer studies. In another agricultural-related study to determine training designs and trainee characteristic effects on transfer training of agronomic practices, Kiggundu *et al*. (2020) reported higher perceived transfer rates for women in most skill sets in bean seed production which were significantly higher ($P<.017$) than those for men. The LTSI report on perceptions of trainee and training design factors influencing transfer skills again revealed women as superior to those of men. Evidently, this study showed men and women differing in their perceptions of training characteristics and training design influences on training transfer among the farmers.

There are other instances that can contribute to the transfer problems. For instance, though instructions may be adequate, trainee levels of ability may differ in cognitive ability, self-efficacy and motivation and this will compromise the learning. Secondly, while recognising that trainees differ in their training constructs that affect outcomes, differences in trainability will differentiate levels of learning (Noe, 1986). This, in essence, says no two trainees are similar in most characteristics.

Training design, delivery and implementation. Training design relates to the degree with which training is arranged and delivered to enable trainees to internalise and transfer learning to the work place. Research has revealed that training design affects training transfer. When training content is similar to actual work, effectiveness soars (Perkins and Solomon, 1992; Holton *et al*., 2000). There are several training design factors that influence transfer of training including learning principles, instructional techniques - tools, methods, and context combined to create delivery. There are several demands that make for a well-designed training plan that facilitates learning and transfer (Noe and Colquitt (2002) as proposed in Salas and Cannon-Bowers (2001). Trainees

are more likely to transfer the training content to workplace demands when they perceive that the training programme was well-conceived and delivered to ensure trainees maximum ability to transfer (Holton, 2005). Velada *et al*. (2007) adds that training design factors may increase training transfer when content is akin to actual work and the trainee's actual time to interact with trainers is sufficiently long to facilitate internalization and transfer of skills to workplace.

Training design factor is critical for transfer of training. It is a source of low transfer rates for the simple reason that if the knowledge and skills are not well-inculcated or learnt in a training event, it will most likely not be practiced at work (Baldwin and Ford, 1988). Training design relates to the degree with which training is arranged and delivered to enable trainees to internalise and transfer learning to the work place (Holton, 2000). Researchers reveal that training design affects training transfer in several ways depending on the particular feature under observation. Researchers, nevertheless recognise that when training content is similar to actual work, effectiveness soars (Thorndike and Woodworth, 1901) cited in Perkins and Solomon (1992). Training design and delivery characteristics that impact training effectiveness include (i) needs assessment; (ii) spacing effects; (iii) training instructor; (iv) delivery method; (v) training content; (vi) duration; and (vii) training location.

There are several training design factors that influence transfer of training. Poor instructional designs are a major factor in transfer (Baldwin and Ford, 1988). Trainer use of textbooks to extract designs that are not systematically evaluated lead to trainers formulating or adopting unsuitable or irrelevant objectives. In addition, poor instruction design skills result in trainers using common strategies for all types of courses e.g. lectures instead of demonstrations, with the result that learning outcomes are not achieved. What this means is that learning environments are often not suitable for the particular type of courses. They are not deliberately set up to resemble performance workplaces. Even when training designs are properly prepared and suitable trainees identified, poor delivery becomes a factor in training transfer. The trainer fails to take the opportunity to support learning by referring to skills back at the workplace (Baldwin and Ford, 1988).

There are several demands that make for a well-designed training plan that facilitates learning and transfer (Noe and Colquitt (2002) as proposed in Salas and Cannon-Bowers (2001). Trainees are more likely to transfer the training content to workplace requirements when they perceive that the training programme was well-conceived and delivered to ensure trainees maximum ability to transfer (Holton, 2005). Velada *et al*. (2007) adds that training design factors may increase training transfer when content is akin to actual work engagements and the trainee's actual time of interacting with trainers is sufficiently long to facilitate internalization and transfer of skills to workplace.

The review of the training design, delivery and implementation reveals several factors or shortcomings that will disrupt or reduce training transfer. The whole process of training transfer should be initiated through a training needs assessment (TNA). The TNA in itself is the process of identifying individual, group or organisation needs for training and then aligning the training programme with the identified needs (Arthur, 2003). The development of TNA enables trainers to develop a suitable training programme that has appeal to trainees and their organisations. The lack of a TNA, on the other hand, will lead to most shortcomings raised above. It will yield a generic training programme that will not address the needs of particular trainees because it may be faulty; the training environment may not be suitable nor adequate for the type of training

suggested, as indeed may be the learning outcomes and hence the expected outcomes cannot be transferred. This is particularly so for groups of trainees such as farmers in rural areas, often lowly educated, resource-poor but self-directed. Their training programmes should address their needs for knowledge and skills that they apply immediately when they return to their work places and hence programmes with high rates of transfer and with practically no decay.

Work environment factors. The third construct critical to transfer of training relates to contextual factors including climate and social support. Social support refers to perceived support that trainees are able to get from supervisors before and after training (Lim and Johnson, 2002). Such support covers encouragement, participation in training, change in work environment, feedback where necessary, etc. Chiaburu and Marinova (2005) provided some insights into predictors of skills transfer from an institutional context to work context revealing that individual dimensions such as mastery-approach, goal-orientation and training self-efficacy related or predicted pre-training motivation. In addition, contextual factors such as peer support predicted pre-training motivation and skills transfer with supervisor support influence being minimal. Such support influences trainee motivation and the level of self-efficacy because these positively impact trainee's expectations (Chiaburu and Tekleab, 2005). The support trainees receive from the community-peers, friends, and relatives play about the same role. Chiaburu and Tekleab (2005) concluded that peer support promotes transfer of training and transfer for motivation compared to other environmental factors such as supervisory and management support.

Other aspects of work context relate to opportunities to conduct business based on learned experiences, commitment and organisational culture. This depends on access to resources and facilities. In this study access to finance to purchase the required farm inputs, machinery and equipment, farm labour, transport infrastructure, markets, etc. are critical for conducting farm operations (Bates *et al*., 2004). The implication here is that for transfer to be positive, trainees need to effectively use what they have learnt in/at their work (Lim and Morris, 2005). Other researchers reported that limited trainee opportunities to practice lead to restrictions to perform relevant skills at work. Researchers have in general observed that positive transfer will be limited if there is no opportunity to implement the training contents at work. Unfortunately, there is practically no evidence to suggest how organizational factors influence the training and transfer of knowledge, skills and attitudes to farming households and farming communities.

Research Issues and questions. What knowledge, skills and attitudes do agricultural shows offer and effectively transfer to farming communities? The question above reflects the dilemma of the agricultural experiences. Kiggundu *et al*. (2020) expressed the state of the art as follows. The agricultural sector especially in developing countries, like Uganda, have experienced practically no training research pertaining to the training or capacity building of the different aspects or sub-sectors of agriculture. The result is that most sub-sectors remain unknown and empirical data on training and training transfer of knowledge and skills that organisations continually impart to farming communities is known. This is despite the glaring need for farmer training especially among the small-holder farmers who form the majority of the farming populations. The state of art in knowledge in the sector is reflected in Miiro, *et al*. (2012), Muthoni and Miiro (2017), Sseguya, *et al*. (2018) and Kiggundu *et al*. (2020) publications.

This review indicates that agricultural service providers in Uganda are generally ill-equipped to deal with issues of training and its consequences as a database hardly exists. The review also informs agricultural scientists of the existence of large databases covering other sectors such as

banking, law enforcement, human resource development, education, ICT, telecommunication, that document training design, delivery and implementation, training and transfer of training as well as work environment factors. To address issues of the transfer problem as identified by Baldwin and Ford (1988), considerable volumes of data exist identifying many factors that impact on the training processes. For all studies covered in this review the thematic areas tended to be the same and included training evaluations, factors determining training and training transfer of learned products and associate with training transfer problem, and training evaluation models. It is thus prudent that in the establishment of an agricultural-based training research programme, there should be a suitable enabling environment that will facilitate training.

Conclusions

Based on the above review, a study on agricultural shows as training platforms is underway. The study proposes a route that the research will undertake to evaluate training, training effectiveness and transfer of training prospects. Unfortunately, it was noted that despite agricultural shows having been conducted for more than 200 years, scientific/empirical data are scarce. This has made it difficult for researchers to determine farmers' perceptions of shows let alone what is learnt, internalised and deployed to farming operations. Thus, our study sets out to explore the question "*Are agricultural shows suitable for training farmers*?".

To respond to the sub-question "*What are farmers' perceptions of agricultural shows?*" Saks and Burke (2012) proposal to adopt Kirkpatrick four-level criteria model to assess training effectiveness will be used. This model will be adopted and is expected to provide responses on farmers' perceptions of agricultural shows, what they learn from them and what changes are experienced in their behavior. The issue of transfer problems with respect to transfer of training arising from failure of trained materials not surviving the transfer back journey to work context (Baldwin and Ford,1988) will be addressed through the sub-question "*What impedes the transfer of knowledge and skills generated through shows to farming communities?*" This will be achieved by evaluating the relative importance of factors that lead to transfer problem. The LTSI is designed to investigate the system of variables that affect learning transfer and is ideal for this stuidy.

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