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Evaluation and impact of a reflective training process for rural extension agents

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ABSTRACT

Purpose: This article assesses a non-traditional training methodology for extension agents, focused on the exchange of experiences among peers and the reflection on practice, with the aim of exploring its potential as a training strategy.

Design/Methodology/approach: A quali-quantitative investigation was conducted, which included interviews with extension agents, the use of different questionnaires, and recordings of the evaluation sessions carried out during each workshop.

Findings: This research allowed us to understand the importance of effective group coordination, a participatory climate, working in small groups, and the feedback loop between theory and practice for processes of experience sharing and reflection on practice. Some of the positive effects of the training observed were that extension agents acquired new knowledge and methodologies, reflected critically upon their practice, and put into question their own extension approach.

Practical Implications: Given its potentialities, implementing training processes focused on experience sharing and reflection on practice for rural extension workers, seems advisable.

Theoretical Implications: This article contributes to the understanding of how experience sharing and reflection on practice can generate transformations in rural extension agents' approaches and positioning.

Originality/Value: This study systematically assesses the impacts that training has on extension workers, as well as the underlying processes that made it possible to generate them.

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KEYWORDS

Training; reflection on practice; experience sharing; horizontal learning; evaluation; subjective change

Introduction

There is academic consensus on the importance of training rural extension officers and advisors in order to develop their competences (Gboku and Modise 2008; Cuevas Reyes et al. 2014). In particular, scholars highlight that training extension agents increases the efficacy and efficiency of their interventions (Ardila 2010; Singh et al. 2010; Elhamoly, Koledoye, and Kamel 2014; Al-Zahrani et al. 2017), thus strengthening their capacity to impulse changes on agricultural practices (Khalil et al. 2009), as well as rural development processes (Gboku and Modise 2008; Landini 2013). Moreover, in-service training

increases motivation and job satisfaction (Gboku and Modise 2008; Oladele and Mabe 2010), improving extension workers' professional performance, and contributing to the sustainability of extension interventions and projects (Christoplos, Sandison, and Chipeta 2012). Thus, it becomes apparent why the Global Forum for Rural Advisory Services argues that the rural extension workers' capacity development is a long-term investment (Sulaiman and Davis 2012).

In this context, Christoplos, Sandison, and Chipeta (2012) argue that the importance of developing extension agents' capacities has been neglected in most countries over the past few years. Now, this perception of extension workers' training as limited and insufficient has to be understood in the context of the historical changes that have occurred in the paradigms of rural extension and innovation (e.g. Leeuwis 2004; Leeuwis and Aarts 2011; Sulaiman and Davis 2012; Singh et al. 2016). In this vein, Sulaiman and Davis (2012) point out that extension agents and institutions need to develop their capacities to effectively address the challenges of today's world, and move past the traditional transfer of technology approach. Thus, this increase in the complexity and diversity of extension work leads to the need to acquire new knowledge and capacities (Movahedi and Nagel 2012; Landini 2013; Landini, Bianqui, and Russo 2013; Singh et al. 2016; Shukri Al-Rimawi, Allahyari, and Al-rusheidat 2017), capacities that were generally not acknowledged in the past.

Currently, there is no consensus regarding the knowledge and capacities extension agents and advisors need, because they depend on the objectives of the organisations and the characteristics of the territories in which they work (Lindner, Dooley, and Wingenbach 2003; Sulaiman and Davis 2012). However, in general terms, scholars tend to agree that it is essential that extension agents' training include technical as well as social knowledge (Sulaiman and Davis 2012; Landini 2013; Tarekegne et al. 2017). Thus, it has been argued that extension agents should not only have productive technical knowledge of their areas of interest (Ogbonna et al. 2016), but should also have knowledge and capacities needed for: working with organisations and coordinating groups (Khalil et al. 2009; Cuevas Reyes et al. 2014), commercialisation and business management (Karbasioun, Mulder, and Biemans 2007; Singh et al. 2010), interpersonal communication and teaching-learning processes (Al-Zahrani et al. 2017; Saleh and Man 2017), TICs (Elhamoly, Koledoye, and Kamel 2014; Shukri Al-Rimawi, Allahyari, and Al-rusheidat 2017), participatory planning (Gboku and Modise 2008), conflict management (Christoplos, Sandison, and Chipeta 2012), and for navigating interpersonal and intercultural relationships (Gboku and Modise 2008), among many others.

In the context of the diversity and complexity of the knowledge and capacities extension agents require nowadays, different scholars have called attention to the limitations of the education provided by universities or in courses that focused on the transmission of knowledge (Gboku and Modise 2008; Movahedi and Nagel 2012; Sulaiman and Davis 2012). In this line, different methodological alternatives have been proposed. For instance, Sulaiman and Davis (2012) have pointed out the need for implementing learning processes focused on the resolution of the practical problems faced in everyday practice (what they denominate 'action learning'), while Landini has highlighted the potentiality of methodologies that have a strong component of reflection on practice (Landini 2013; Landini and Bianqui 2013; Landini, Bianqui, and Russo 2013). Additionally, the exchange and sharing of knowledge among peers has also been proposed as an

interesting strategy to be implemented in extension workers training (Landini, Brites, and Mathot 2017).

Considering how important extension agents' knowledge and capacities are, the scarcity of empirical research dedicated to studying methodologies used to train rural extension agents, as well as their impact, is striking (Landini 2013). In this context, there are studies that assess extension agents' training needs in different countries (e.g. Landini 2013; Elhamoly, Koledoye, and Kamel 2014; Al-Zahrani et al. 2017; Saleh and Man 2017; Shukri Al-Rimawi, Allahyari, and Al-rusheidat 2017), or that focus on the existence of 'knowledge gains' as a result of partaking in conventional technical trainings (Singh et al. 2010; Sharma, Ezung, and Sharma 2016). Nonetheless, the literature review conducted for this article identified only three scientific papers that thoroughly assess unconventional training processes for extension workers. These articles include a reflective training process for extension agents in Paraguay (Landini, Bianqui, and Russo 2013), a training conducted through internet in Colombia (Parra and Méndez 2005), and a participatory training methodology focused on students and on their practical experiences, in Botswana (Gboku and Modise 2008).

In this context, this article aims at contributing to the understanding of the results and the impact of unconventional training methodologies for extension agents, as well as the factors that participate in achieving these results, by means of the evaluation of a training process focused on experience sharing and reflection on extension practice. The specific objectives of the research are to identify which factors participants valued from this type of training methodology, to understand the reflection on practice process that took place during the training, and to analyse their results and impact.

Methodology

In order to reach the research objectives, an investigation focused on the evaluation of the dynamic and the impact of a training-workshop for rural extension agents was conducted in San Pedro, province of Misiones, Argentina. The training was developed in conjunction between the research group and members of the two most important rural extension institutions of the country: the National Institute of Agricultural Technology (Instituto Nacional de Tecnología Agropecuaria, INTA), and the Undersecretariat of Family Agriculture (Subsecretaría de Agricultura Familiar, SsAF), both of which belong to the Ministry of Agroindustry.

Characterisation of the territory and of the extension institutions that partook in the study

Misiones is a small Argentine province, located in the Northeast of the country, that shares a border with both Brazil and Paraguay. The Misiones climate is tropical. The department of San Pedro is characterised by having a high percentage of rural population (approximately 60%), and low-income family farmers (more than 75%) (Ramilo 2011). The most common crops grown in the area are tobacco, *yerba mate* (a local infusion), cassava, corn, and vegetables for self-consumption.

In general, small family farmers have no access to private advisors, and rely mostly on the information provided by agricultural input sellers and the support and advice of INTA

and SsAF technicians. The INTA, created in 1956, is an autarchic institution that encompasses agricultural research and extension services. All rural areas of the country are attended by INTA's Rural Development Agencies, which are distributed all along the territory. These agencies have a varying number of extension workers (generally between 3 and 5), who provide free of charge individual advice to farmers (upon request), support farmers' groups and organisations as part of specific projects, provide seeds to subsistence farmers, offer training sessions on different topics, and support the coordination between institutions (mostly public) interested in rural development.

The SsAF is also present in all of the country. However, it is a very different institution. It is newer (created in 2008) and is aimed at the implementation of national public policies in the family farming and rural development areas. The lack of clear institutional guidelines and the scarcity of funding have led to their technicians implementing different actions, depending on the territory and the availability of funding and partners. In general terms, its activities include gathering data on family farming and supporting the implementation of different projects with farmers' groups or organisations, in coordination with other institutions, such as INTA.

Description and characterisation of the training proposal

Most of the participants who attended the training were working in the INTA or the SsAF when the research was conducted. The training included four modules, approximately one per month. The net duration of the activities during each module was between 6 and 6 and a half hours. Between 17 and 21 assistants participated in each module, 18 of which partook in at least 3 of the 4 modules. Most of the participants were extension workers. However, in some opportunities, a teacher and students of an agricultural vocational school also took part in the training. The training topics were:

Module 1: Extension and rural innovation approaches.

Module 2: Management of group and collective processes in the context of extension work.

Module 3: Participatory processes, implication and commitment.

Module 4: The extension worker's role, good practices of rural extension, and how rural extension practitioners learn

The proposal was organised as a four training-workshop event cycle. During the first module, expectations of the entire process were identified and, during the final one, a synthesis activity and a general evaluation were conducted. Each module had its own identity and was organised based on a 5 moments schema. During the first moment, expectations and interests regarding the topic of the day were identified. The second moment aimed at analysing and discussing practical problems and difficulties related to the training topic. During the third moment, the trainer carried out a dialogued exposition about the predetermined topic, trying to take into consideration the problems and interests identified during the previous moments. In this context, the idea of a 'dialogued exposition' refers to the effort to encourage participants to put forth, during the presentation, questions and reflections regarding the training topic, with the aim of capitalising everybody's experience and articulating theory and concrete practice. The fourth moment focused

on making explicit the learning that had taken place, and participatorily constructing recommendations and proposals to strengthen extension practice. Finally, the activities were participatorily evaluated during every workshop. Additionally, it is important to highlight that, during all meetings, the working methodology included the construction of small discussion groups, mostly during moments 2 and 4, and the presentation of group results in the plenaries.

Tools for data recollection and analysis

With the aim of reaching the research objectives, different, complementary, strategies for information gathering were conducted, procuring to triangulate sources and methodologies. These were:

- (1) Recording final evaluations during each workshop.
- (2) During the last part of every module, each participant filled out a questionnaire identifying: positive and negative aspects of the training-workshop as well as what they had learned, and reflections they had had during the workshop. Additionally, they were also asked to assess the degree of satisfaction with the training methodology and the usefulness of the training contents for their extension practice.
- (3) A total of 11 semi-structured interviews were conducted, seven after modules 2, 3, and 4, and four after four months had passed since the end of the last module. Interviews conducted after each module aimed at understanding immediate impressions about the dynamic of the training, while those conducted later aimed at exploring its impact.
- (4) A validated, Likert-type scale of conceptions of rural extension was administered before the first module and after the last one, with the objective of assessing possible quantitative changes at this level. The scale is composed of 8 items, and two subscales. One refers to a diffusionist, hierarchical extension approach, and the other to a dialogical, horizontal one (Landini, Bianqui, and Crespi 2013). The scale was completed by 21 participants before the first module, and by 14 after the last one. Of them, 10 replied in both opportunities, although only 8 completed all the items both times.

Qualitative data was typed and analysed using Atlas Ti software following a categorisation process of text fragments, based on axes of interest derived from the research objectives. Quantitative data were processed using descriptive statistics with the support of SPSS software.

Results

In what follows, the results of the research are presented and each specific objective is addressed in a different subtitle.

Satisfaction with the training

During the end of each module, participants were asked to assess the methodology and the usefulness of the training of extension practice. [Figures 1](#) and [2](#) present these results.

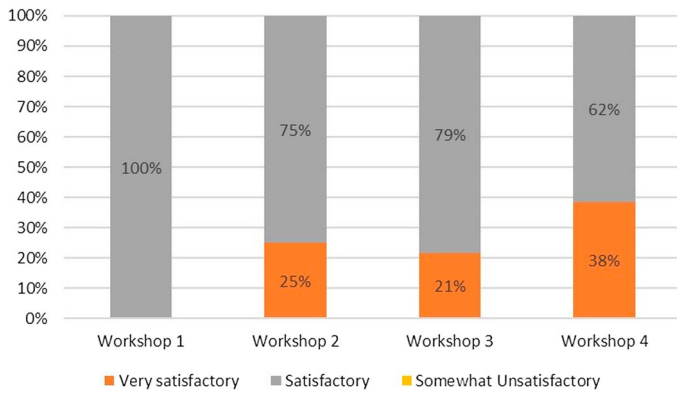


Figure 1. Assessment of the training methodology.

After analysing both figures, it is clear that general satisfaction with the training process was high, and that it subsequently increased after each module, which could be showing a progressive adjustment of the proposal to the participants’ needs. In what follows, the aspects and characteristics of the proposal that generated and increased the observed levels of satisfaction and those that diminished them are analysed. Identifying these factors and characteristics is important, because they could be used as potential strategies to increase the usefulness and/or the participants’ satisfaction during other trainings.

With regards to the aspects valued, participants mentioned ‘respecting the timetable’, and that the workshop was ‘very organised with scheduling and breaks.’ In this way, extension agents highlighted the importance of a clear schedule that includes working times, breaks and a fixed finishing time and, more importantly, that these be respected.

Another aspect the extensionists valued was the participatory character of the training, particularly the dialogue dynamic generated between the participants and the trainer during the theoretical presentation, as well as the proposal to organise small discussion groups as part of the methodology: ‘as a positive aspect [I highlight] the construction of a horizontal and collective space for dialogue.’ However, several participants also pointed out that the participatory framing allowed for some trainees to monopolise the

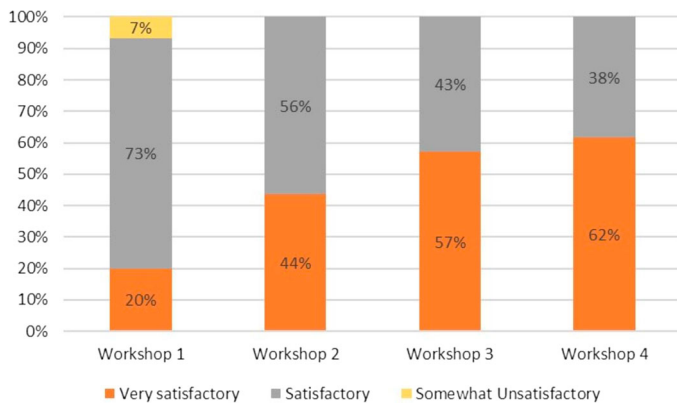


Figure 2. Usefulness of the contents for extension practice.

interventions or to make off-topic comments. Thus, they recommended a group coordination that made it easier to 'organise the comments on a topic so as to make better use of time', and thus, 'avoid falling into anecdotal comments.' Nonetheless, it is important to note that deeming something as being 'off-topic' is always debatable, and these seemingly unrelated comments can even be experiences and reflections that end up helping to create new interpretations, hypotheses, and knowledge learned.

In the same vein, participants also greatly valued the work carried out in small discussion groups that were followed by a plenary, because it facilitated participation and allowed for, 'everyone to give their opinion.' On a more general note, participants especially valued the opportunity to meet, exchange and share experiences with other extension practitioners during the workshop, an experience towards which the participatory methodology, as well as the working in small groups, contributed. In this line, one extension agent highlighted the value of the workshop as a, 'space to share experiences, knowledge [...], and to get together.'

Additionally, several participants also mentioned the usefulness of the workshop as a way of learning and acquiring conceptual knowledge: 'I liked the part of the concepts, the theory.' However, most extension agents referred to the usefulness of the practical contributions, since the workshop, 'helps [...] to refresh a lot of ideas that later benefit our practice.' In fact, one of the problems identified by participants, particularly during or with regards to the first module, was its abstract character, and its limited practical application. Thus, it could be argued that extension practitioners value a good equilibrium between theory and practical usefulness, where each pole enriches the other. An interviewee states, 'the most interesting thing is how practice complements theory, or vice versa in order to understand why certain things happen, or to have a more scientific explanation.' Moreover, numerous participants pointed out that this articulation between theory and practice allowed them to rethink or theorise practice, that is, to think about what they live every day in conceptual terms or in an abstract way.

Figure 3 presents the different aspects that increase satisfaction with the training. There, it becomes apparent that satisfaction has three main components: proper time management, a participatory dynamic (including working in small groups), and an articulation between theory and practice, the last two components thus contributing specifically to a process of horizontal exchange, wherein reflection upon, and rethinking of practice, takes place.

Exchange among peers and reflection on practice

Exchange among peers and the process of reflection on rural extension practice are the core components of the training, and play an essential role when trying to understand the processes that underlie the impact of the training-workshop. With regards to the exchange among peers, interviewees highlighted several key factors that contributed to it taking place. Firstly, participants identified the importance of a horizontal framing, without hierarchies, in which everyone was allowed to share their opinion freely, in contrast with more conventional training methodologies. In the final evaluation, a participant commented that, 'the space is itself valuable, because it means getting together with other people on the same level, in a more horizontal way of participation', 'where one can freely express oneself [...] without conditioning.'

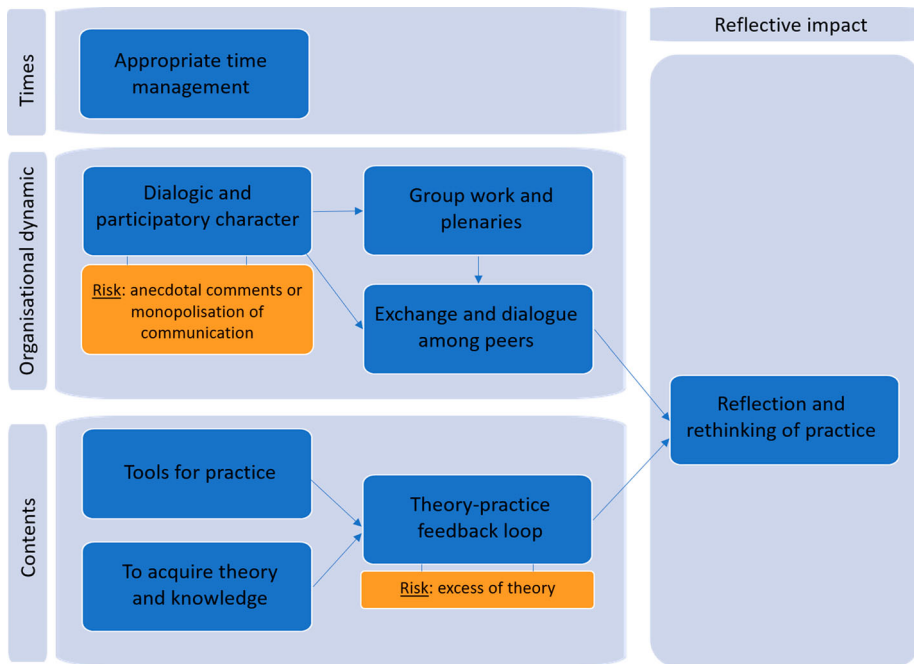


Figure 3. Key components of the satisfaction with the training.

Secondly, interviewees also underlined the importance of the fact that everyone who took part in the exchange spaces had experience in extension practice, which allowed them to have similar practice problems, as well as share a desire to improve and overcome them: ‘[the workshop is a] space for sitting together with several people who are having extension work problems [...], [who have] the need for a more efficient extension.’ In this context, the diversity of experiences, knowledge and perspectives is considered to be enriching: ‘each person had their own imprint, their own history, their own practice, their own ... and that was very enriching.’

Finally, they acknowledged the value of having, ‘someone external participate [for instance a facilitator or a coordinator] [because] this helps to add something that generates improvements, sometimes you lose the capacity to reflect.’ Most likely this is due to the facilitator’s capacity to help the group avoid falling into catharsis, while still encouraging a group dynamic, all within a framework of careful time management.

The three key factors mentioned previously are the ones that allow for the small discussion groups, wherein experiences are shared, to become places for learning and reflection. With regards to the learning that took place in this context, there are two different perspectives. One, which is the less frequent, makes reference to the possibility of learning from more experienced peers, while the second highlights the horizontal exchange of experiences, knowledge and strategies. This second perspective is expressed in the following quotation, ‘the most important part [of the workshop] is having learned that our work requires a space for the exchange of ideas and knowledge, which helps us develop new perspectives, and improve the current ones.’

Additionally, participants also pointed out that the spaces for exchange among peers are ones that encourage and make possible processes of reflection on practice.

One states, ‘this group [...] helps reflect on and refresh a lot of ideas that are later useful in our practice.’ In this context, it is worth mentioning that, despite the fact that group exchange is not considered to be a requisite for reflection on practice processes, it is indisputable that it plays a very important role as its catalyst.

In order to understand how reflection on practice is generated, three interrelated processes have to be considered: taking distance, self-assessment, and the conceptualisation or theorisation of practice. The first process refers to taking the time to create some distance from immediate experience, thus rethinking or denaturalising what is being thought or done. Different interviewees referred to this when they said that the workshop, ‘helped to [...] stop a bit, reflect, and see what you are doing,’ ‘analyse from a different perspective.’ This process of rethinking and taking distance seems to imply a sort of splitting, where the subject looks at him/herself and at his/her practice: ‘[the workshop] helped me a lot, to look at myself as a technician.’

The second component of reflection on practice is based on the previous one, the taking of distance, and refers to the process of self-assessment of what one does and of one’s position or approach when doing it. One of the participants explains this by pointing out that, during the workshop,

[you should] not do a catharsis but start thinking, without looking for someone to blame, from the point of view of self-criticism, and say “are we doing it OK?,” to see what we are doing and evaluate whether or not it is useful, and rethink the strategies we are using to do extension work.

In this context, self-assessment takes extension practitioners out of their comfort zone, and encourages a practice of questioning the status quo, which facilitates learning as well as the implementation of creative actions and practices.

The third component of the process of reflection on practice enhances the other two. It refers to the process of creating a dialogue between theory and practice, which is described as the conceptualisation of practice, or to examine one’s practice from a theoretical point of view. Here, the role of theory and the conceptual contributions presented during the workshop are essential tools in helping to give more depth to the reflections. In this vein, an interviewee commented that she liked ‘all of this being able to reflect, rethink, theorise, and put a name to many practices [...] that sometimes we do not name, or do not schematise or frame [in theoretical terms]’.

Finally, two consequences or outcomes of the process of reflection on practice will be mentioned. Firstly, reflection on practice puts into question one’s own practices and attitudes. An interviewee comments: ‘I learned a lot about self-criticism [...] because blaming farmers is much easier, and it is what you tend to do [...], but you have to see what you did not do.’ Likewise, reflection on practice also allows for identifying new ideas or possibilities for action, which were not necessarily contained or foreseen in previous action frameworks. One participant exemplifies,

these spaces help you generate or begin to find some tools that you have forgotten, or you had stored away and weren’t using, and perhaps one starts to think and develop some things [...] begins to see the process from a different angle.

Figure 4 presents a conceptual synthesis of the analysis of the processes of exchange among peers and of reflection on practice.

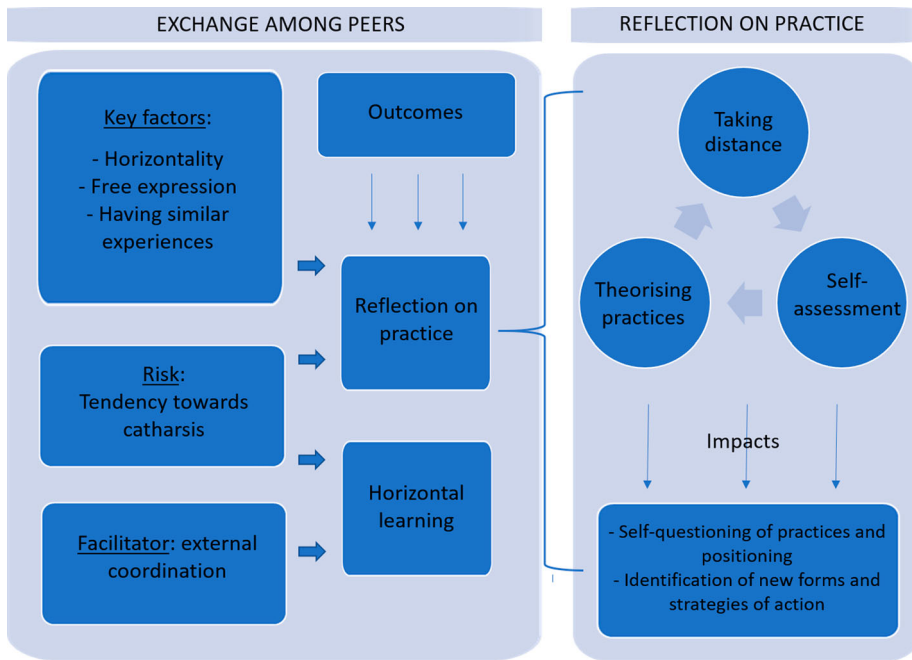


Figure 4. Analysis of the processes of exchange among peers and of reflection on practice.

Achievements and impacts of the training

Participants mentioned three core achievements and impacts of the training. Firstly, the possibility of getting together and reflecting may be considered to be the first achievement, given the intrinsic value that the participants allocated to this. One interviewee supports this argument, ‘[the workshop] made a contribution, starting from the very opportunity of sitting and thinking [together], reflecting jointly on extension, [it] was already an achievement.’

Secondly, the participants highlighted that the workshops allowed them, as is expected of conventional training activities, to incorporate new knowledge and tools for practice: ‘all these conceptual issues were useful [...], I believe that the workshop contributed things to us.’ In particular, during the interviews and the different instances of evaluation, participants mentioned different topics and practical recommendations (tools) incorporated during the expositive moment of the workshops.

Along with the previous achievements, there is also, a more profound one that can be highlighted and that is directly related to the characteristics of the methodology used in the training-workshop, which focused on horizontal exchange and reflection on practice. In particular, it refers to the processes of reinterpretation and reframing of the way in which extension is done and farmers are addressed, as a consequence of taking distance and carrying out a critical evaluation of one’s own extension practices. In this sense it becomes apparent that participants, by questioning different aspects of their practice and their role, generated and created new lines of action to face problems and, even more, reshape their role, their position, and the way they relate to farmers. One participant comments, ‘[with the workshop] perhaps one starts to think and develop new things ...

Table 1. Impact of the workshop on the participants' extension approach.

Extension approach	N	Maximum possible	Minimum possible	Moment 1 (mean)	Moment 2 (mean)	Wilcoxon test
Dialogical (a)	9	24	6	21.44	22.11	$p = 0.395$
Diffusionist (b)	9	24	6	11.33	10.33	$p = 0.147$
Dialogical predominance (a-b)	8	18	-18	10.25	11.875	$p = 0.048$

[...], starts to see the process from a different angle.' In this very line, during the final evaluation, one of the interviewees commented,

I believe that the positive aspect [of the workshop] was to open our minds a bit, to refresh basic concepts [...], and, when you go to see a group of farmers, be able to think, or reconsider, which practices need to be carried out

Undoubtedly, the rethinking, reinterpretation or reframing of the extension agents' role did not occur to the same degree in every participant. Nonetheless, interviews suggest that it took place in most cases. In fact, quantitative evidence supports this interpretation, because data shows a statistically significant change in the trainees' extension approach as a result of their participation in the workshop. As was explained in the methodology section, a questionnaire was administered that assessed conceptions of rural extension before starting the workshop and after finishing the last module. In order to compare both takes of the instrument, Wilcoxon test was used. Table 1 presents the results.

As it may be seen, results show that the workshop increased the extension agents' dialogic and horizontal orientation, and diminished their diffusionist one (see means of the moment 1, before the first module, and moment 2, after the last one), even though these changes have no statistical significance. In contrast, significant changes were found when analysing the predominance of a dialogical approach over a diffusionist one, in line with the qualitative results that show that the workshop contributed to different processes of reinterpretation and reframing of the way extension is done and farmers are addressed, now in line with a more horizontal approach. Thus, both, qualitative and quantitative data show that a horizontal exchange of experiences among extension practitioners and reflection on practice have the potential to generate more in-depth knowledge, in terms of questioning one's own role, as well as generate creative extension practices, that fit the contexts in which they are implemented.

Discussion and conclusions

In the context of a growing dissatisfaction with the methodologies used to train extension practitioners, and the historical changes in the extension and innovation paradigms, a reflective and participatory training process for rural extension workers was assessed, with the aim of exploring its potential as a training strategy to face current challenges within extension practice. Importantly, it is worth mentioning that the primary objective of the training assessed was not the acquisition of knowledge and new capacities on the part of the extension workers, but the research initiative aimed at evaluating its impact, in contrast to other academic articles with similar objectives (e.g. Gboku and Modise 2008; Landini, Bianqui, and Russo 2013; Sharma, Ezung, and Sharma 2016). This is relevant because it allows for an increase in diversity in data-gathering techniques, thus contributing to giving greater depth to the results of the study.

The identification of four factors that contribute to a greater satisfaction with the training methodology and to the acquisition of knowledge, practices and approaches useful for extension work, may be deemed as a first contribution of the research. These factors are:

- (1) The existence of a coordinator that controls time management and organises group dynamics, facilitating a balanced participation, aimed at reaching the workshop's objectives.
- (2) The participatory nature of the workshop, and the fact that the discussion is carried out in small groups, so as to allow participants to share experiences in a horizontal manner.
- (3) The incorporation of moments of conceptual exposition that allow for feedback between theory and practice, and
- (4) A constant concern for critically reflecting on extension practice.

These factors are of utmost importance when designing and implementing trainings for rural extension agents, because they have the potential to increase participant satisfaction with the methodology, as well as improve the usefulness of the knowledge acquired for its application to extension practice.

Likewise, this study also allowed for the identification of several factors that facilitated the exchange of knowledge and experiences among peers and became a catalyst for collective reflection on practice. These factors are: horizontality, free expression, having a similar practice, and the existence of an external coordinator. Interestingly, an important similarity was found between the dynamics that took place during the training-workshop and the one that characterises communities of practice (CoP). In general terms, CoP are understood as informal groups of people who share the same task or practice and who reflect jointly on it, co-constructing knowledge and developing new competences in the process (Moura 2009). In this sense, it could be argued that the training's methodology functioned as a catalyst for the exchange of experiences among peers and the reflection on practice process that characterises CoP, by means of having created a group and facilitated the exchange of experiences and points of view as a result of a group facilitation process. In the case of both CoP and the training-workshop, the most important source of learning seems to come from peers with similar knowledge, rather than from experts.

Additionally, this study also contributed to deepening our understanding of the subjective processes that take place during reflection on practice, through the identification of three different, interrelated moments that shape it: the taking of distance from practice, the self-assessment, and the conceptualisation of practice from a theoretical point of view. The knowledge of the existence of these moments makes it possible to implement strategies to facilitate them during a training course.

Finally, the three most important effects of this training can be highlighted as being: the possibility of meeting and gathering with other rural extension practitioners, the incorporation of new theoretical and practical knowledge, and the challenging of the practitioners' own approaches and rural extension practices. Although all three effects are valuable, the last impact, the challenging of current approaches and practices, is of utmost importance because, when people challenge the way they think and act, they tend to create new meanings, reframe the way in which they understand things, and imagine new ways of doing them. Furthermore, this process of challenging approaches and practices leads people to

the creation of new action strategies that allow them to solve old problems in a new way. This process, which demonstrates concretely the human capacity to be creative, can be conceptualised in terms of the Theory of Action (Argyris 1991). The Theory of Action argues that there are two main types of learning. While single-loop learning refers to the incorporation of new strategies in order to solve practical problems, double-loop learning refers to changes in the rules and approaches used to address problems, based on the fact that previous interpretative models were not able to do so (Landini, Brites, and Mathot 2017). In this context, the first impact of the workshop (gathering among extension agents) could be understood as a social satisfaction, the second one (incorporating knowledge and tools) would be an example of single-loop learning, and is characteristic of conventional training activities, and the third impact (rethinking one's own practices and changing how one positions oneself as an extension agent) would be an example of double-loop learning.

Thus, it becomes apparent that the exchange of experiences and reflection on practice methodology tends to generate different types of learning, including high quality ones (double-loop learning), which in turn is connected to changes in extension approaches and ways of relating to farmers. Interestingly, these changes took place so as to address the practical problems that were not able to be resolved using pre-existing approaches, something that is particularly valuable in the context of the historical changes that are taking place within extension and innovation paradigms, and of the (new) challenges extension agents and institutions are facing.

Research results have also shown the potential that the exchange of experiences among extension agents and the reflection on extension practices have as strategies for training and for developing practitioners' capacities. This contrasts with the more common framing of training courses for extension workers, which are mostly structured in terms of a hierarchical relationship between a trainer (seen as expert) and the trainees. Two implications for extension institutions can be drawn from this. Firstly, that they should test the usefulness of implementing trainings for their personnel focused on horizontal exchange of experiences and reflection on extension practice. And secondly, that they should explore alternatives in order to facilitate the exchange of knowledge and experiences between extension workers beyond, or outside of, training events.

Although the authors of this article's efforts will be placed on obtaining solid research results, it is important to highlight the limitations of the study. In particular, it is clear that the research results are derived from the assessment of only one case. This implies that the results should not be considered to be definitive, and that other researchers should reassess its potentiality and usefulness in the context of its practical use. Besides, it is also important to note that the researchers were the ones that implemented the training-workshop and conducted the assessment interviews, which could have contributed to making it more difficult to identify the factors that contributed to the results described in the article.

In brief, our final recommendation is to implement trainings for rural extension practitioners focused on exchange of experiences and reflection on practice, but also to continue researching their effects and underlying dynamics. Moreover, we highlight the importance of exploring new, creative training strategies that are based on processes of reflection on practice, but that break the traditional idea of 'training', and support the development of reflective extension institutions.

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