SUPERVISED PROFESSIONAL PRACTICE IN ANIMAL HUSBANDRY: A LEARNING TOOL AND THE EFFECTS OF THE COVID-19 PANDEMIC

Érica de Oliveira Araújo 1
Danieli de Sá Neiva Cardoso 2
Jose Vanor Felini Catânio 3
Wagner Viana Andreatta 4
Nélio Ranieli Ferreira de Paula 5

ABSTRACT

Objective: With a quantitative approach, this research analyzes whether the supervised professional practice in the technical course in Agribusiness meets the purpose of work as an educational principle.

Theoretical framework: The research problematizes the teaching-learning relationship in the context of supervised professional practice.

Methodology: The research was conducted at the Federal Institute of Education, Science and Technology of Rondônia, Campus Colorado do Oeste, in the year 2022, with the application of a questionnaire through the Google Forms platform, and subsequent verification of Cronbach's Alpha coefficient, to test the reliability index.

Results and conclusion: The supervised professional practice presents itself as an important tool in contributing to the initial technical education at mid-level; the interdisciplinarity used as a tool in the teaching-learning process provides a clear and objective perception of the disciplinary interrelationships; the way of guiding and supervising the professional practice can influence for a reflective practice, diversifying and developing a significant learning; and the Covid-19 pandemic caused several consequences and damages, directly affecting the education of the students when related to the practices and the attainment of competencies and skills of the area of actuation.

Implications of the research: The research contributes from its theoretical and applied review with reflections to evaluate, reassess and plan ways of teaching and learning articulated to the educational principles.

Originality/value: The results obtained in this study are unpublished and relevant to the scientific community, contributing to the training of educators and the development of learners, especially in the area of agricultural and environmental sciences.

Keywords: Medium Level Technical Education, Interdisciplinarity, Agribusiness, Pandemic.

1 Instituto Federal de Educação, Ciência e Tecnologia de Rondônia (IFRO), Porto Velho, Rondônia, Brazil. E-mail: erica.araujo@ifro.edu.br Orcid: https://orcid.org/0000-0003-1996-4849
2 Instituto Federal de Educação, Ciência e Tecnologia de Rondônia (IFRO), Porto Velho, Rondônia, Brazil. E-mail: danieli.cardoso@ifro.edu.br Orcid: https://orcid.org/0000-0002-5221-5092
3 Instituto Federal de Educação, Ciência e Tecnologia de Rondônia (IFRO), Porto Velho, Rondônia, Brazil. E-mail: vanor.catanio@ifro.edu.br Orcid: https://orcid.org/0000-0001-9400-5555
4 Instituto Federal de Educação, Ciência e Tecnologia de Rondônia (IFRO), Porto Velho, Rondônia, Brazil. E-mail: wagner.andreatta@ifro.edu.br Orcid: https://orcid.org/0000-0002-7070-1086
5 Instituto Federal de Educação, Ciência e Tecnologia de Rondônia (IFRO), Porto Velho, Rondônia, Brazil. E-mail: nelio.ferreira@ifro.edu.br Orcid: https://orcid.org/0000-0001-5348-0392
PRÁTICA PROFISSIONAL SUPERVISIONADA NA AGROPECUÁRIA: FERRAMENTA DE APRENDIZAGEM E OS REFLEXOS DA PANDEMIA COVID-19

RESUMO

Objetivo: Com abordagem quanti-qualitativa, a presente pesquisa analisa se a prática profissional supervisionada no curso técnico em Agropecuária atende o propósito de trabalho como princípio educativo.

Referencial teórico: A pesquisa problematiza a relação ensino-aprendizagem no contexto da prática profissional supervisionada.

Metodologia: A pesquisa foi conduzida no Instituto Federal de Educação, Ciência e Tecnologia de Rondônia, Campus Colorado do Oeste, no ano de 2022, com a aplicação de questionário por meio da plataforma Google Forms, e posterior verificação do coeficiente de Alfa de Cronbach, para testagem do índice de confiabilidade.

Resultados e conclusão: A prática profissional supervisionada apresenta-se como uma importante ferramenta na contribuição para a formação inicial técnica de nível de médio; a interdisciplinaridade utilizada como ferramenta no processo de ensino-aprendizagem proporciona a percepção clara e objetiva das interrelações disciplinares; a forma de orientar e supervisionar a prática profissional pode influenciar para uma prática reflexiva, diversificando e desenvolvendo uma aprendizagem significativa; e a pandemia Covid-19 causou consequências e prejuízos diversos, afetando diretamente a formação dos acadêmicos quando relacionadas às práticas e a obtenção de competências e habilidades da área de atuação.

Implicações da pesquisa: A pesquisa contribui a partir de sua revisão teórico-aplicada com reflexões para avaliar, reavaliar e planejar formas o ensino e aprendizagem articulados aos princípios educativos.

Originalidade/valor: Os resultados obtidos neste estudo são inéditos e relevantes para a comunidade científica, contribuindo para a formação de educadores e desenvolvimento de educandos, especialmente na área de ciências agrárias e ambientais.


1 INTRODUCTION

According to the National Curriculum Guidelines, Professional Practice is understood as a curricular component and is an articulating activity between teaching, research and extension, which provides guidance for an integral training of subjects to act in the world in constant changes and challenges, and therefore indispensable for obtaining the diploma of Technician of High Level.

The Supervised Professional Practice (PPS), in the institutional framework, guided by Resolution No. 17/Rectory - Cepex/IFRO, of May 09, 2018, provides for the approval of the Reformulation of the Pedagogical Project of the Technical Course in Agriculture and Livestock Integrated to the High School of the Federal Institute of Education, Science and Technology of Rondônia - IFRO, Campus Colorado do Oeste handles the possibility of adding practical knowledge to the theoreticians built in the classroom, characterizing themselves as a pedagogical action which enables learning by performing functions inherent to the medium level technical profession. However, the PPS represents the moment of training in which the technician in agriculture and livestock farming experiences and consolidates the skills and competences required for professional exercise in different fields of intervention within the areas of plant production and Animal production, allowing to infer that direct contact with
professional reality in addition to enriching the knowledge and strengthening the teaching-learning process allows to face the challenges related to the attributions, and stimulate the development of the mechanisms of action and innovation (Araújo et al., 2020).

Thus, PPS can be understood as the complementary field of knowledge, and this activity should be given an epistemological status indissociable from practice, conceiving it as praxis, which defines it as an investigative attitude that involves reflection and intervention in educational issues (Silva e Gaspar, 2018). Seen in this way, the PPS presents a singularity for being in the institutional scope and extending to the world of work, providing support for the establishment of the relationship between theory and practice, allowing reflection on learning in the institutional context, and on the teacher trainers, inviting them to review their conceptions about teaching and learning (Araújo et al., 2020).

The construction of skills in the design of new educational scenarios, leads us to transform the conception of school and professional education and to impart new quality to their daily practice (Arantes, 2003). It is important to infer that, for the realization of this component, all the disciplines that involve the curriculum are fundamental, since they work knowledge and methods (subsidies) to be developed during practice and throughout the professional career (Silva e Gaspar, 2018), that is, interdisciplinarity. It is important to highlight the great recognition among professionals regarding the importance of this component for the technical training curriculum at the high level, because it enables both the dialog between theory and practice, and the intersecting view has a close relationship with the way of understanding the formative dimension of the component, the disquiet of those who practice, think and theorize education and learning. It is by thinking critically about today’s or yesterday's practice that the next practice can be improved (Freire, 2002).

In the light of the above, with a qualitative approach, the present research analyzes whether the supervised professional practice in the technical course in Agriculture at IFRO-Campus Colorado do Oeste fulfills the purpose of work as an educational principle, in what concerns the articulation and integration between theory and practice, interdisciplinarity, professional identification, and the impacts of the COVID-19 pandemic.

2 THEORETICAL FRAME

According to the resolution of the National Council of Education CNE/CEB No 4/99, which establishes the National Curricular Guidelines for Professional Education of Technical Level, the expected profile after the conclusion of the Technical course in Agriculture and Livestock, requires a professional who responds to the changes in demand of the market, flexible, and who integrates with the different forms of aggregation and mobilization, since there are several areas that the technician in cattle raising can act, attending the needs of organization and production of the various segments of the productive chain of agribusiness, aiming at quality and economic, environmental and social sustainability.

When dealing with the construction of these professionals supervised professional practices are of extreme relevance in the configuration of the profile of the graduation from the technical course in agriculture and livestock, so that the pedagogical action allows the development of the theory-practice, potentiating the learning by the exercise of inherent functions of the profession, which tend to contribute to the employability, growth of the country and especially in the development of skills and values, promoting the reflective knowledge of the student.

In addition to technical training skills, there is also a need for the development of other skills such as responsibility, discipline, creativity, motivation to learn and seek solutions, and that have socio-affective, cognitive and psychomotor skills that are not restricted to the productive character, but encompass behavioral, humanistic and intellectual dimensions,
capable of promoting actions that sustain a career throughout life, so as to allow as a citizen to actively participate in the process of social transformation (Cardoso, 2022).

In this construction of knowledge and skills professional practice plays a fundamental role, since several authors consider that the purpose of the internship and/or professional practice "is to provide the student with an approximation to the reality in which they will act". According to Pimenta e Lima (2004) "the internship has to be theoretical-practical, that is, that the theory is inseparable from the practice". Thus, the professional practice of a course can be considered as an experience of maturing and growth of students, even more so when it comes to technical courses integrated to high school, in which it usually has a young audience and with little or no professional experience.

Referring to vocational training in high school and this maturing and growth, author Frigotto (2014) describes that it is naturally the phase that young people are "shaping their horizons" in terms of citizenship and economically active life. The educational experience in this stage, then, should provide the intellectual development and the understanding of cultural elements that make it possible to configure these horizons. Among these elements are the characteristics of the world of work, including those that contribute to making professional choices (Frigotto, 2014).

It is understood that it is necessary to provide academics with an environment and/or space in which they become the protagonists of their learning process, and thus allow them an active attitude, combined with appropriate professional practices and methodologies that foster creativity, innovation, the development of skills and competences, having a better result and the promotion of active learning seeking a monilateral training, capable of developing the individual in its entirety.

From this perspective, Cardoso (2022) and Araújo et al. (2020) agree that there is a strong need to be concerned about the process of targeted and reflective training, so that professional practice contributes to the critical training of academics, following the pillars of vocational and technological education and the work strands as an educational principle, as well as there should be a more accurate and critical understanding of professional practice in the institutional framework, aiming to develop a more attentive look at the singularities of professional educational training of medium level.

Concerning the development of a critical and reflective professional, author Kuenzer (2004) describes that it is not restricted to the mere accomplishment of tasks, but "a reflected, thought-out doing", is a new form of relationship between subject and object, which leads to the idea of the movement of thought that transits from the objective world to its representation in the plane of consciousness, that is, thought is nothing other than a subjective image of the objective world, which is constructed from human activity. It could summarize by bringing "meaning" to the action, from the moment the individual feels included in the production process and manages to visualize their role in this process. In this way, the formation process should not only be aimed at productive purposes, but also allowing students to improve other skills, among them social development.

3 METHOD

Scientific research is the search for information on a given subject for which no explanations can be obtained based only on the use of data collections (Prodanov and Freitas, 2013). Therefore, all research is based on theories that help it to a starting point for investigation. In this sense, this research was undertaken in qualitative-quantitative, since there was numerical analysis for collection, classification of the obtained data and organization and qualitative interpretation of the answers (Silveira and Córdova, 2009). When dealing with research classification, Souza and Kerbauy (2017), considers that quantitative and qualitative
research is not totally dissociated, believing that reality is multifaceted, the combination of two approaches can make possible two different looks, providing a broad view of the investigated problem becoming complementary.

The method used was the field survey, which according to Gil (2019), is the modality of research characterized by the direct interrogation of people, whose behavior is desired to know and allows the researcher to obtain information from a significant group of people, about the problem studied.

In order to achieve the objectives of the research and consolidate the bibliographic review, the research was conducted at the Federal Institute of Education, Science and Technology of Rondônia, Colorado Campus do Oeste, in the year 2022, with the application of a questionnaire through the Google Forms platform to 105 academics of the Technical Course in Agriculture and Livestock, duly registered in the activities of Supervised Professional Practice, specifically in the areas of plant and animal production.

As a data collection tool, the questionnaire was composed of 20 closed questions, applied at the end of the teaching activities of Supervised Professional Practice in character of unidentified and with the free and informed consent term duly signed.

According to Gil (2019), the questionnaire is a fundamental tool for the collection of data in field survey, due to its several advantages, among them the possibility of reaching large numbers of people, even if they are in different geographical areas. Thus, the questionnaire was organized in order to verify the degree of agreement, and the alternatives were organized according to the Likert scale, which deals with a measurement most used in the social sciences, especially in surveys of attitudes, opinions and evaluations (Gunther, 2003).

After receiving the questionnaires and tabulation of the data, the Cronbach's alpha coefficient was checked, to test the reliability index. Subsequently, it led to the elaboration of representative graphs for the presentation and discussion of the results obtained.

4 RESULTS AND DISCUSSIONS

From the verification of the questionnaires, the calculation of the Cronbach's Alpha Coefficient was carried out, which according to Pereira (2004), is an interpretation that looks at the results of the test from the perspective of reliability analysis. About the confidence analysis of the test, authors Gaspar and Shimoya (2017) describe that the reliability of Cronbach's Alpha Coefficient can vary between 0 and 1, considering that the minimum acceptable value for alpha is 0.70 below this value the internal consistency of the scale used is considered low. In contrast, the maximum expected value is 0.90, above this value one can consider that there is redundancy or duplication in the items of the questionnaire. The Cronbach's alpha coefficient obtained from the questionnaires was 0.76, considered moderate.

Hora and Monteiro (2010), point out that it is important to know that the alpha value is affected by the number of items that are going to make up a scale, besides the size of the sample, the larger the number of individuals that fill a scale, the greater the expected variance. This may have been a determining point for the result obtained, considering that the sample size is considered high. Based on these considerations, the analysis of the data is now carried out in a qualitative manner, observing the responses presented by the academics in the applied questionnaire.

The guidance received on the PPS objectives was between excellent and good, in the order of 47.6% and 46.7% respectively (Figure 01), and the activities developed during the PPS in accordance with the teaching project and in line with the established objectives, as stated by 78.1% of the sampled (Figure 02). About 57.1% of the activities programmed in the educational project to be developed during the PPS were exclusively in the planned areas of activity (plant and/or animal production), while 40% were developed partially in the planned area of activity.
(Figure 03), which confronts the meeting of specific needs of the agricultural and animal production sectors of the Federal Institute of Education, Science and Technology of Rondônia, Campus Colorado do Oeste, being these commonplace and intrinsic to each system of production and/or sporadic, since they occur at specific moments in the productive cycle, reproductive and/or in an unforeseen form. However, all the activities developed were characterized as significant to the teaching-learning process, since the percentage of activity developed outside the area of activity was not significant to the research project (Figure 03).

![Figure 01](image1.png)

**Figure 01.** The guidance received on the objectives of supervised professional practice.
**Source:** Prepared by the authors (2023).

![Figure 02](image2.png)

**Figure 02.** The activities carried out during supervised professional practice were as described in the teaching project.
**Source:** Prepared by the authors (2023).
Figure 03. The activities of supervised professional practice performed were exclusively in the area of performance, partly in the area of performance or entirely outside the area of performance. Source: Prepared by the authors (2023).

Around 86.7% of the respondents said they had found no difficulty in requesting guidance during PPS, and when asked for guidance and clarifications obtained were characterized as excellent and good (Figure 04A and 04B). About 81.9% of the activities developed during the PPS were compatible with the level of knowledge and the content addressed in the theory within the classroom (Figure 05A), of which 93.3% of the activities allowed to intensify the integration between theory and practice (Figure 05B) and 71.4% allowed to opportunize moments of interdisciplinarity (Figure 05C).

Araújo et al., (2020), state that PPS is a complex and at the same time dynamic training, in which trainees translate the confirmation that they can "put theory into practice", positively impacting their formative process and allowing to realize and understand disciplinary interrelations. By proposing to the student the interrelations of the disciplinary contents, a critical understanding of the existing relationships, of the systems involved and the conquests resulting from the knowledge acquired both inside and outside the classroom is allowed.

Thus, interdisciplinary activity prospects to understand and understand the parts of connection between the different areas of knowledge, uniting to transpose something innovative, open up wisdom, rescue possibilities and overcome fragmented thinking. It is the constant search for research, in which the student in the development of interdisciplinary activities does not build up knowledge alone, but rather together with others and has the figure of the teacher as an orientation. During the survey, only 1% of the trainees sampled stated that PPS did not provide opportunities for moments of interdisciplinarity (Figure 05C). This number probably refers to the complete ignorance of the meaning of the term interdisciplinarity or the lack of attention to the reading of the questionnaire.
Figure 04. He found it difficult to request guidance during supervised professional practice (A), when asked for guidance during supervised professional practice he obtained sufficient clarification (B).

Source: Prepared by the authors (2023).

Figure 05. The activities developed during supervised professional practice were compatible with the level of knowledge and content addressed in theory (A); the PPS activities allowed to intensify the integration between theory and practice (B) and allowed to opportunistically integrate moments of interdisciplinarity (C).

Source: Prepared by the authors (2023).

Regarding the acquisition of professional experience still in academic period, the PPS met the expectations in 73.3% of those sampled (Figure 06), allowing the expansion of the vision of the labor market in the farming sector in the order of 86.7% (Figure 07), confirming the relationship of acquisition of practical experience for their future professional performance and the entrance profile of the middle level academics to the technical course in farming, in which 79% of those sampled report that the PPS can influence the decision making to follow professionally as a technician in farming (Figure 08). Such a result may be directly related to the constant appreciation of the labor force as a Technician in Agriculture and Livestock in the
State of Rondônia, since there is a rise in the areas of agriculture and livestock, which have allowed the state to figure among the largest producers in the North Region.

And, as a future agricultural technician, 51.4% and 28.6% respectively, affirmed yes or perhaps, the expression of interest in following professionally in some undergraduate course in the area of agrarian sciences (Figure 09), which corroborates the data of technical training in agriculture and cattle raising with related areas, and the possibility of verticalization of education within the institutional scope. Sá (2022) states that professional practice is of extreme necessity in the construction of the profile of the return and will be linked to all action that allows the development of the theory developed throughout the course in practice, allowing to add practical knowledge to the theoretical knowledge learned in the classroom, being considered a pedagogical action, which enhances the learning through the exercise of functions inherent to the profession.

Figure 06. Supervised professional practice meets expectations regarding the acquisition of practical experience for your future professional performance.
**Source:** Prepared by the authors (2023).

Figure 07. The supervised professional practice expands the vision of the labor market in the farming sector.
**Source:** Prepared by the authors (2023).
Figure 08. The supervised professional practice allows to influence the decision-making to follow professionally as a technician in farming and livestock at the end of the course.
Source: Prepared by the authors (2023).

Figure 09. As a future agricultural technician he has an interest in following professionally in some undergraduate course in the area of agrarian sciences.
Source: Prepared by the authors (2023).

Regarding the progress of the PPS regarding the receptivity of supervisors and advisors (Figure 10A), and relationship with the advisor and supervisor of the PPS (Figure 10B), the data reveal excellent receptivity and relationship, remaining the percentages above the 70% acceptance, respectively. This allows us to affirm that the relationship between trainee, supervisor, teacher and the school unit is a relationship of healthy closeness, effective learning, allowing the academic to seek their autonomy in the educational process.

Araújo et al., (2020) confirm that these professional conduct precedents to supervisors and counselors contribute experiences and learning that will help future farm technicians in their professional career, directing their practices and even serving as a "mirror". When the supervisor and the supervisor act in this perspective of educational closeness, they are not seen as mere transmitters of knowledge, but as mediators, someone capable of leading them to reflect about their surroundings, taking on a more humanized role in their teaching practice, allowing advances and conquests of the internship in relation to professional learning. These results
corroborate the thinking of Vygotsky (1984), in which he defends the idea that social interaction and mediation is a central point of the educational process.

**Figure 10.** The receptivity of supervisors and supervisors (A) and the relationship with supervisors and supervisors during supervised professional practice (B).

*Source:* Prepared by the authors (2023).

The PPS as a teaching project ends with the preparation of the final report, and in the light of this assessment, 87.6% of those sampled stated that the preparation of the final PPS report contributed to academic training (Figure 11), and that the guidance for the elaboration of the PPS report was well organized, planned and substantiated by the advisor, according to opinions of 88.6% of those sampled (Figure 12). The guidance teacher makes all the difference in the face of quality supervised professional practice, because "the way of guiding can influence a reflective practice" (PIRES, 2012, p.932). In addition, a good advisor seeks to diversify and develop meaningful learning for academics, a fact noted in the responses of trainees. The number of scholars sampled who stated that the PPS report did not contribute to academic education and the absence of organization, planning and reasoning was insignificant, corresponding to the order of 1%, respectively.
Figure 11. The preparation of the supervised professional practice report contributed to the academic training. **Source:** Prepared by the authors (2023).

Figure 12. The guidance for the preparation of the report was organized, planned and substantiated by the supervisor. **Source:** Prepared by the authors (2023).

However, the executions of PPS activity in activity with other students contributed to broaden their social and interpersonal relations in the order of 85.7%, while 9.5% said that they eventually expanded their social relations and only 4.8% said that there was no significant effect of PPS in the social context (Figure 13). Oliveira (1997) states that face-to-face interaction between individuals plays a fundamental role in the construction of the human being, and that it is through the concrete interpersonal relationship with other men that the individual will come to internalize the culturally established forms of psychological functioning. Thus, social interaction with either the individual or the practical elements provide means for the development of higher psychological functions which, according to Vygotsky (1998), is the modification of psychological activity from the instrument-mediated activity.
Educational institutions, faced with the new reality imposed by the pandemic, needed to reinvent themselves to ensure continuity of the school year and activities such as professional practice, internships and projects, adapting to the changes caused by the COVID-19 pandemic by adopting new teaching methodologies that could minimize losses in the learning process (Charczuk, 2020). Teachers and pedagogical teams had the task of seeking, besides quality in training, new strategies for students to have their needs met in the midst of the new reality. These strategies have generated consequences in several areas, in particular in the academic training of professionals of the Technical course in Agriculture and Livestock who had their contact with practical activities in the area of plant and/or animal production made impossible.

In this scenario, the 2022 academic year under the impacts of the COVID-19 pandemic, at the Colorado IFRO-Campus of the West, started remotely, which allowed 57% of those sampled to assess as poor the development of activities during the pandemic, through the plan of joining [replacement of practice by theory] (Figure 14A), 69% did not feel prepared to enter the labor market as a Technician in Agriculture (Figure 14B), since for 56% of those sampled the professional practice remotely failed to achieve the objectives proposed to their Training as a Technician in Agriculture and Livestock (Figure 14C). Thus, even if remote teaching is considered in the pandemic reality as an urgent reaction for the maintenance of teaching and learning processes, it is evident from the results of the research the impacts and difficulties for the academics, who until then had not been confronted with the atypical epidemiological and social reality, and, one cannot, automatically, propose a formation of Technician in Agriculture and Livestock exclusively at a distance, since the differences in teaching are significantly negative when related to practices and the obtaining of skills and competences own area of activity. According to Pereira et al., (2022) the COVID-19 pandemic demonstrated our educational weaknesses by questioning our curricula, pedagogical projects and didactic strategies, and we are faced with the need for a curriculum and didactic strategies that prioritize the reality of everyday life.

Figure 13. The executions of PPS activity in joint action with other students contributed to broaden their social relations.
Source: Prepared by the authors (2023).
Figure 14. Evaluation of supervised professional practice during the pandemic (A); supervised professional practice worked during the pandemic made it possible to prepare to enter the labor market as a Technician in Agriculture (B); the activities proposed for PPS during the Pandemic and remotely reached the objectives proposed to his training as a Technician in Agriculture (C).

Source: Prepared by the authors (2023)

5 FINAL CONSIDERATIONS

Supervised professional practice presents itself as an important tool in contributing to technical initial training at the secondary level, and should continue to be investigated in order to enrich the teaching-learning process at the institutional level.

The interdisciplinarity used as a tool in the teaching-learning process provides a clear and objective perception of disciplinary interrelations.

The way to guide and supervise professional practice can influence a reflective practice, diversifying and developing meaningful learning, and reinforcing that the affectivity and quality of the mentor-supervisor-student-object relationship are essential in the process of internalizing concepts and developing students.

The COVID-19 pandemic has caused diverse consequences and losses, directly affecting academics’ training in practice and attaining competencies and skills in the field.

The research contributed from its theoretical-applied review with reflections to evaluate, reassess and plan the forms of teaching and learning articulated to educational principles in professional educational training of technical level.

REFERENCES


