

ACTION RESEARCH IN PHYSICAL EDUCATION TRAINING: COLLABORATIVE WORK PROMOTION

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ABSTRACT

The objective of this study was to analyse the potentialities of action research, anchored on the self-regulation of learning, in the promotion of collaboration among interns of a Physical Education course. Twelve undergraduates in Physical Education from a Brazilian public university participated in an action research group. The formation of this group was intended to provide the interns with a chance to investigate pedagogical practices and seek solutions to the challenges identified during the internship. We used for data collection: interviews, recall stimulation, triggering questions and discussions recorded in a virtual forum. Data were submitted to content analysis supported by Nvivo-10 software. From the results, it was identified that action research, based on the self-regulation of learning, was conducive to the development of teamwork skills and provided interns with self-regulation for their actions during the teacher-training course.

Keywords: Action Research; teacher training; collaboration.

Investigación-acción en la formación en educación física: promoción de la labor colaborativa

RESUMEN

El objetivo de este estudio fue analizar las potencialidades de la investigación-acción, anclada en la autorregulación del aprendizaje, en la promoción de la labor colaborativa entre practicantes en formación de un curso de Educación Física. Participaron 12 practicantes de un curso de Licenciatura en Educación Física de una Universidad pública brasileña, los cuales formaron parte de un grupo de investigación-acción. La formación de ese grupo tuvo la intención de proporcionar a los practicantes en formación la práctica pedagógica y buscar soluciones a los retos identificados en las pasantías. Se utilizó para la recolecta de datos: entrevistas, estimulación del recuerdo, preguntas detonadoras y discusiones registradas en un grupo virtual. Se sometieron los datos al análisis de contenido con apoyo del software Nvivo-10. A partir de los resultados, se identificó que la investigación-acción, basada en la autorregulación del aprendizaje, promovió el aprender a trabajar de forma colaborativa y proporcionó a los practicantes en formación la autorregulación de sus acciones para aprender a ser profesor en las pasantías.

Palabras clave: Investigación-acción; formación de profesores; colaboración.

Pesquisa-ação na formação em Educação Física: promoção do trabalho colaborativo

RESUMO

O objetivo deste estudo foi analisar as potencialidades da pesquisa-ação, ancorada na autorregulação da aprendizagem, na promoção do trabalho colaborativo entre estagiários de um curso de Educação Física. Participaram 12 estagiários de um curso de Licenciatura em Educação Física de uma Universidade pública brasileira, os quais fizeram parte de um grupo de pesquisa-ação. A formação desse grupo teve a intenção de proporcionar aos estagiários investigarem a prática pedagógica e buscarem soluções aos desafios identificados nos estágios. Foram utilizadas para a coleta de dados: entrevistas, estimulação da recordação, perguntas detonadoras e discussões registradas em um grupo virtual. Os dados foram submetidos à análise de conteúdo com apoio do software Nvivo-10. A partir dos resultados, identificou-se que a pesquisa-ação, alicerçada na autorregulação da aprendizagem, promoveu o aprender a trabalhar de forma colaborativa e proporcionou aos estagiários a autorregulação das suas ações para aprender a ser professor nos estágios.

Palavras-chave: Pesquisa-ação; formação de professores; colaboração.

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INTRODUCTION

The initial formation of teachers constitutes an important stage in the construction of knowledge and the development of necessary skills for professional practice. Thus, we must understand this stage as a starting point in the preparation of teachers for pedagogical practice and in the process of professional development (Flores & Veiga Simão, 2009).

Ever since the creation of the first university physical education course in Brazil in the 1930s until the insertion and appreciation of internships in elementary school as a means of developing professionals (resolution 03/87, 1987), changes in the formation of physical education teachers produced positive, significant transformations in the work of these professionals. However, in view of the limitations and prejudices observed in the school context concerning physical education, the lack of appreciation of its contents, and the predominance of traditional sports instead of other manifestations of physicality (Marinho, 2011; Freitas, Silva, Lacerda, & Leonardi, 2016), it is necessary to invest more in the initial formation of these teachers.

One of the alternatives to fix the problem would be investment in different opportunities for teachers to develop competences that will help them acquire knowledge in order to improve their contribution at school. Some proposals have already been realized by scholars in the area of Physical Education. One example is the case of Caldeira (2001), which has provided guidelines for practices within formation courses.

The proposal of Caldeira (2001) is the availability of opportunities for collaboration in the different activities realized in graduation disciplines. According to the author, moments for the discussion on study materials, the Exchange of practical experiences, reflections on problems found during internships and mutual help among students and teachers are examples of important collaborations during the initial formation of teachers. This type of work makes it possible to learn how to act and make decisions in collaboration with others in order to reach the objectives of learning. In addition, it is a means to mitigate the insecurities of young teachers in the beginning of their careers (Oliveira, Mourão, Terra, & Maroun, 2016).

Peer collaboration might be defined as a type of cooperation, which implies the realization of teamwork by people who wish to go deeper and help each other acquire new knowledge (Figueiredo & Veiga Simão, 2014; Cadório & Veiga Simão, 2013). The actions and decisions within a collaborating group make it possible for participants to have a non-hierarchic relationship, in which leadership and responsibilities are shared in the realization of activities, which generates learning

and mutual trust among the members of the group (Damiani, 2008).

The internship disciplines can produce a learning context by means of collaborative work (Caldeira, 2001). According to Neto, Oliveira and Guzzo (2017), the internships might generate learning opportunities that are built and shared collectively by means of the interaction of supervisors and interns, as well as among interns themselves, especially during the discussions on pedagogical practice and mutual help in order to fix problems.

In order to turn internship into a formative environment and maximize the learning of teamwork, teachers who are responsible for these disciplines in Physical Education graduation courses might employ the action research. The action research is a method of applied research which is often used in the education area as a strategy for the formation of teachers (Alarcão, 2011). The most important characteristic of this method is the availability to group participants of a participative and collaborative space for critical and reflexive analysis on educational practices in order to make them better by means of cycles of planning, action, observation and reflection (Cadório & Veiga Simão, 2013).

Results in the area of formation (initial and continuous) of Physical Education teachers reveal the potential of this method in order to promote teamwork. (Barroso & Darido, 2016; Oliveira, Martins, & Bracht, 2015; Rufino & Darido, 2014, and so on). We emphasize the formative value this type of research because it gives teachers the opportunity to reflect on and conceptualize their pedagogical practice with the help of other professionals engaged in the same process (Alarcão, 2011). At the same time, the development of action-research with teachers can also give them the opportunity to self-regulate their practice and actively search for solutions to pedagogical challenges (Cadório & Veiga Simão, 2013).

The self-regulation of learning can be interpreted as the process by means of which individuals handle their own learning in an intentional, autonomous and effective way (Zimmerman, 2013). The development of self-regulating competences such as planning, reflection, self-assessment and the use of learning strategies will be conducive to the formation of autonomous, motivated teachers who are really prepared to teach and learn (Capa-Aydin, Sungur, & Uzyntiryaki, 2009).

Thus, in view of the previously mentioned considerations, especially concerning the internship stage in teacher formation, this research had the objective to analyze the potentialities of action research based on the self-regulation of learning and the promotion of teamwork among interns in a Physical

Education course.

METHOD

Study context and participants

This study was realized in the context of internship for a graduation course in Physical Education at a public university located in the south of Brazil. The study observed 12 interns from the 7th and 8th semester¹. Five interns were female (EA, ED, EE, EI, EL) and seven were male (EB, EF, EG, EJ, EM, EN, EO). The average age was 22 years. The 12 interns were in their first graduation. Most of them started their course in 2011. Only one of the interns started her course in 2012. Most of the interns (8) dedicated their time exclusively to internship activities, two of them had jobs (ED; EJ). Since it was mandatory in the curriculum of their course, all of them had already realized the first internship, which focuses on Child Education and the initial years of Elementary School. In addition, interns had the opportunity to participate in research, pedagogical or extension projects. Eight interns (EA, EB, EE, EF, EG, EI, EL, EM) were already participants in the Project for Teaching Initiation, or “Projeto de Iniciação à Docência” (PIBID), which allowed them to have different teaching experiences.

In the beginning of the 7th semester, the interns, in order to find solutions for challenges throughout the internship, set up a collaboration with a researcher (the first author of this article) and created a group of action research, which was anchored on the self-regulation of learning. It was named Team for Research and Formation in School Physical Education, or “Grupo de Pesquisa e Formação em Educação Física Escolar” (GRUPESF). During the research process, the group realized on-site meetings in order to promote discussions, assessments and reflections on relevant practices and issues concerning the challenges of the internship.

The stages of the research were organized by means of the basic model for action-research by Tripp (2005). In this model, the action research is developed in four stages: (1) planning improvement for practice, (2) action in order to establish improvement, (3) monitoring and description of the effects produced by the action and (4) assessment of the obtained results. Likewise, the cycles of action research with the GRUPESF were divided into four stages: (1) formation of the collaboration group and planning of actions; (2) development of activities with the GRUPESF; (3) assessment of activities by the GRUPESF, their practical effects and the search for new action strategies; (4) assessment and analysis of changes

¹ The objective of the internship is to provide future teachers with the opportunity to get some experience in the work with students in child education or in the initial years of elementary school (6th semester), in the final years of elementary school (7th semester) and High School (8th semester).

and its reflections on the formation of interns.

Stage (1), formation of the collaboration group and planning of their actions, was a moment for the participants of the GRUPESF to get to know each other. Initially, an interview was realized with each one of the participants and, by means of a meeting, objectives and planned actions were defined for the following stages of the GRUPESF. In the interview, the interns were asked to describe their teaching experiences up to the moment of formation including difficulties faced in the previously realized internships.

Stage (2), development of activities, of the GRUPESF took place by means of different strategies chosen by the group in order to facilitate the accomplishment of established objectives. In this stage, the interns participated in different sessions for recall stimulation, meetings, trigger questions, and the creation of a page for discussion on Facebook.

In stage (3), assessment of activities of the GRUPESF, of their effects in practice and the search for new action strategies, the group analyzed, reflected on and discussed, by means of the meetings and discussions on Facebook, the pedagogical strategies used in practice with the students, their effectiveness in the overcoming of challenges and the necessity to come up with different strategies in order to reach the objectives of education.

At last, stage (4) was the moment at which the interns and the researcher realized assessments on the results obtained in the internships. At the end of this stage, the interns participated individually in a final interview. The researcher had the chance to identify, in their behaviors and actions, the transference of knowledge and all the changes that took place during the internships.

It is important to emphasize that the four mentioned stages did not invariably happen in a linear manner. The group observed and assessed the decision-making process and the implemented actions. Depending on necessity, the group would return to previous stages. The researcher, during the developed stages, played the role of mediator and manager of actions according to the necessities identified by the interns. Such mediation was realized by means of different activities. Among the realized activities, the highlights were the recall stimulation and the analysis of critical points, when the students, in collaboration, had the opportunity to reflect on their performance by revisiting recorded sessions. These reflections led to awareness of the aspects involved in the pedagogical practice and motivated participants to create new strategies in order to overcome the obstacles they found in the internships.

In order to show respect to the ethical principles underlying the execution of a scientific research, the

present research was submitted to and approved by the Committee of Ethics of The Medical School of The Federal University of Pelotas; Brazil. Decision no. 136.565.

The gathering and treatment of data

In order to analyze and develop the results of this study, we have gone over the transcriptions of the final interviews with interns, the recollection stimulation sessions, the on-site discussions, the interns' answers to trigger questions, and the discussions on Facebook.

Even though we have realized interviews with each intern at the beginning and at the end of this investigation, in this research we have decided to analyze the testimonies and, later on, the transcriptions of the final interviews reviewed by the students. For example one of the questions was: "Do you recognize the effects of the work realized by the GRUPESF in your formation as a teacher? If your answer is yes, describe the effects".

The trigger questions were proposed in order to give interns the opportunity to think over and write about the discussions of the group. These questions were asked at the end of the meetings and the interns had, on average, 30 minutes to answer the questions and hand them in to the teacher. Other examples of questions are: "What have I actually managed to change in my pedagogical practice after the recall stimulation?" and "What are your main reasons for the continuation of the GRUPESF next semester?".

The on-site meetings of the GRUPESF happened throughout all stages of the action-research, a total sum of 17 meetings. The purpose of the meetings was to discuss, assess and reflect on the pedagogical practices realized in the stages and the issues underlying these practices in a collaborative way.

The recollection stimulation is a technique with the purpose of investigating the teachers' and the students' thought processes in addition to assessing self-regulating competences during the process of teaching and learning (Amado & Veiga Simão, 2013). The recollection stimulation consisted of recording in video the lessons taught by the interns in order to provide them with material for reflection over the decisions they made during the recorded lessons.

The creation of the Facebook group was an initiative by the interns of the GRUPESF themselves and the objective was to allow the discussions to go on even after the end of the on-site meetings. By means of this tool, the interns and the researcher were able to communicate on a daily basis in order to discuss matters related to internship practices and share materials for the production of lesson plans. All interactions registered in this space were saved in a file in the

personal computer of the researcher by means of the Microsoft Word program.

Before the use of instruments for gathering the referred data, the interns signed an informed consent form, in which they authorized the use of data, under the condition of guaranteed anonymity and confidentiality of the information provided.

The collected data were analyzed by means of content analysis (Bardin, 2011). Based on the propositions of this method, we initially transcribed the whole material obtained in the final interviews, in the recollection stimulations and in the meetings. The transcriptions, the answers to the trigger questions and the discussions on Facebook were imported into the Nvivo-10 software in order to facilitate and organize the content analysis of this material. Next, we realized a dense, careful analysis of the data and created register units. We took the testimonies (statements or parts of statements) from the interns' speeches, which made proper sense and corresponded to the objectives of this investigation, as units of register. Grouping up the units of register helped the process of category creation. In order to create categories, we selected an open procedure, in which the system of categories was induced by means of an analysis of excerpts from the units of register. In order to verify the consistency of the category-creation process, we invited an external judge who was a specialist in the theme of the investigation. The degree of agreement between the classifications of the investigators and of the external judge corresponded to 77 percent. Due to this validation, the categories were reformulated so that we could obtain greater validation and reliability for the data found in this study.

RESULTS

After analyzing the different documents collected by the GRUPESF, we created three categories: (a) solution for pedagogical practice problems; (b) aid in the identification of unnoticed aspects of practice; (c) contribution for professional development as a teacher.

Concerning the solution of pedagogical practice problems, we have observed that some interns (EA, ED, EE, EF) emphasized the importance of group support for a good execution of the lessons: "with the help of other colleagues, it was possible to come up with a whole set of solutions for the same problem. That makes us rich in possibilities" (ED – 12th trigger question); "all the conversations, all the sharing of experiences, activities, plans, suggestions and tips with my colleagues really helped me face the internship stage more easily" (EE – 6th trigger question); "all the problems I had we managed to solve together" (EF – final interview). Intern EA commented on the GRUPESF experience: "... I realized that I was not alone (in my internship practice) we all shared similar feelings" (EA – final interview).

EG and EM highlighted the fact that, after sharing experiences with their GRUPESF colleagues, they managed to find solutions to their pedagogical practice problems during the internship:

In the GRUPESF we learned that no college student has a perfect internship experience. We all have and will always have problems. Some will be simple, some will be more complex. In a group, there is always the possibility of discussing matters and looking for solutions in the experiences of colleagues who have gone through similar difficulties. (EG - 12th trigger question)

...In the group, we had support to solve problems. We shared experiences and researched the literature. We would always come up with something to help. (EM – final interview).

According to the interns, one of the most important factors in their search for solutions concerning internship problems was the creation of pedagogical strategies:

In the beginning, when I faced difficulties for the first time I thought: “- What am I going to do now?” I didn’t even know how to think of strategies. With conversations and observations of the reality of other interns [GRUPESF colleagues] and of the ways they were adapting to that reality and the strategies they were using. (EB - Facebook).

Concerning my colleagues, they gave me feedback, by telling me that I could do this and that, and they also shared with me details of their internships... the sharing of experiences and the dialogues really encouraged me to come up with strategies in order to proceed with the contents of each lesson. (EM – recollection stimulation).

As we have observed before, the help provided by the GRUPESF took place at different moments in the realization of action research. Below, we have highlighted the reflections by interns in a conversations that took place during the on-site meetings on the importance of teamwork in the elaboration of planning for internship practice in High School.

EF: It was quite clarifying [the elaboration of planning]. EM: *having the company of the group is always better. We can talk things through during the whole process.* EG: *right. We can remind each other of things we might forget about.* EF: I believe our planning is going to be complete. (on-site meeting).

Concerning the identification of unnoticed aspects of practice, there is evidence that teamwork, which happens at the GRUPESF, has helped interns realize aspects of their pedagogical practice that they were not aware of yet. EG argued that the help of colleagues was

of vital importance because:

“... at the first moment of the internship, I kept thinking I was doing the wrong thing. However, with the help of the group I came to the conclusion that I was really making an effort to give good lessons. I was just not getting enough collaboration from the students” (EG – final interview). EJ observed: “... the group gave me much more concrete feedback on my performance as a teacher” (EJ – final interview). EL added: “... I managed to learn a lot with the group. There are many things you cannot see when you are engaged in practice. It helps a lot when you have someone to point out the things you can do better. It really helps” (EL – final interview).

Concerning professional development, we have observed that the interns recognize the positive effects of the GRUPESF teamwork in their formation.

the effects were super positive. I was able take advantage of the internship to sharpen my skills by means of the discussions and activities carried out by the group. It was a unique opportunity to reflect on some of my own behaviors and flaws. (EA – 5th trigger questions).

Likewise, they all point out that awareness of other educational realities and the exchange of ideas were providential in their teacher training.

Certainly, this experience has made a huge difference, getting to know realities, exchanging ideas, helping, getting help. It is a powerful tool to have people with the intention of helping each other improve their performances. Those who did not participate in this experience missed out on something truly beneficial and we will always remember the things we have learned. (ED - Facebook/ 1st semester).

[...] I am really improving myself with the discussions and the observation of the experiences of my colleagues and the way each person overcomes challenges. I will certainly remember these practices in my professional career... The group played a fundamental role in my development in teacher training (EE – 12th trigger question).

The moments for studying and discussion with the group were considered very important in order to identify different ways of handling problems related to pedagogical practices in Physical Education, which will contribute to the development of professional competences such as autonomy.

The study and the discussions amplified my visions on the themes and helped me develop new ways of thinking. Like I have already said many times, it is great to be able to exchange ideas with friends

and get to know other opinions from people with different backgrounds (E1 - 5th trigger question).

I believe the GRUPESF was important for our formation as teachers. Our discussions on relevant themes produced many solutions for our professional challenges (EM - 12th trigger question).

I believe that participating in the group has really helped me develop as a teacher... in a nutshell the most important effects and advancements were: autonomy, the planning of different strategies for my practice, reflections on my own performance as a teacher, the planning of lessons, and finally the belief that the future holds good things for teachers who get ready. (EN - 6th trigger questions).

DISCUSSION

The analysis of results in this study has made it clear that the methodological choices of the action research were significant elements in the development of teamwork among interns. The action research, because it is an applied research method, is conducive to teamwork among investigators and the investigated for the solution of problems experienced (Alarcão, 2011).

At the same time, we have observed that learning how to work collaboratively and enjoying the benefits of teamwork were aspects frequently mentioned by the interns. They mentioned that the help from group colleagues, especially in the solution of internship problems and in the identification of unnoticed practical aspects, were of vital importance in order to rethink and change behaviors that were producing a negative interference in the pedagogical practice.

The context of collaborative formation allowed the interns to produce together a plan of interventions and different pedagogical strategies in order to overcome everyday challenges at school. This type of work seems to have led the future teachers into learning about mutual respect and the sharing of thoughts. According to Veiga Simão (2013), learning how to work in collaboration is one of the most efficient ways to make people respect each other. In addition, teamwork might have mitigated lots of insecurities of the interns regarding their practices. It also provided interns with better pedagogical devices that will strengthen the status of Physical Education as a discipline at school (Oliveira et al., 2016).

The interns pointed out that the teamwork gave them the chance to learn things that they were unlikely to learn by themselves. According to Figueiredo and Veiga Simão (2014), peer-supported learning can be understood as a formative strategy that contributes to professional development, especially because it helps

overcome challenges that are often considered too hard without the help of others.

It is important to highlight the fact that the discoveries of this study, concerning teamwork, are quite similar to the ones produced in the research by Cadório and Veiga Simão (2013). The proposal of the aforementioned research is a response to the necessity of teachers of Portuguese to fix problems concerning pedagogical practices in the teaching of the contents of the discipline. The authors, consequently, used the action research as a means to provide interns with a teamwork environment where future teachers and investigators can work together towards the solution of such problems. In the end of the actions and investigation stages, the results of the study demonstrated that the teamwork context benefitted the professional growth of the students involved. According to this study, the teachers came to the conclusion that the collaboration led to significant learning regarding teamwork, experience exchange, collective reflections and the feeling of confidence in their performance.

We have observed that, in the context of development of the stages of the action research with the GRUPESF, there was no hierarchy between investigator and interns, as well as among the interns themselves. Nevertheless, the investigator took the responsibility to mediate the learning process of the interns on their formation as teachers, thus collaborating to the development of superior psychological functions (Oliveira, 2010). One of these functions was greater awareness and self-regulation of actions during internship classes. That way, the interaction between investigator and interns seems to have constituted itself as an important formative strategy, especially because it has triggered the development of self-regulating competences (Boekaerts & Cascallar, 2006).

We have observed that, during the research, the interns availed themselves of the strategy of looking for help from GRUPESF colleagues, especially in order to overcome challenges at school by means of pedagogical practices. According to the self-regulating perspective on learning, asking for help does not mean that the individual is dependent on other to reach objectives. It means that this individual is aware of the right time to ask for assistance. Self-regulating students benefit from the help of other students when it comes to handling difficulties they encounter during their formation (Serafim & Boruchovitch, 2010).

By analyzing the discoveries of this study, we notice that the teamwork experience produced by the action research has generated transformations in the pedagogical practices of interns. We consider that the internship experience, because it consists of the initial contact between the future teachers and their

workplace, must have the development of teaching skills as their most important objective. Thus, we believe that these experiences promote the formation of competent Physical Education teachers. They also contribute to deeper appreciation of the internship stage in the curricula of graduation courses.

FINAL CONSIDERATIONS

Considering that the objectives of this research are to analyze the potentialities of action research anchored on self-regulation in learning and on the promotion of teamwork, we can infer that the collaboration experiences made possible by the GRUPESF really contributed to the professional development of the future teachers. There is evidence that they learned how to strike the right balance between autonomy and asking for help in order to overcome the challenges presented by internship practice.

Despite the results of the study, we have identified a few limitations that need to be described for the benefit of new studies on the same theme. First, we wish to highlight the fact that some interns seemed to have more difficulty than others when it came to accepting different opinions coming from peers on matters related to their practices in the internship classes. We have observed that some interns displayed higher levels of commitment to the actions developed by the GRUPESF. Although participation in the activities planned by the group was voluntary, the level of interest by some of the interns in their collaboration was not enough to produce measurable transformations or advancements in the realization of their pedagogical practices. Also, not all of the interns were able to adapt themselves to the teamwork model. They would rather just listen to the group's discussions in order to make decisions.

At last, we suggest that more studies on the same theme be realized. However, we also recommend the analysis of other aspects that involve the continuous and initial formation of Physical Education teachers and the intervention environment of these professionals while investigating other experiences made possible by the action research and its benefits for education.

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