

International Journal of Human Sciences Research

Acceptance date: 03/12/2024

CONTINUING TEACHER TRAINING IN SCIENCE AND TECHNOLOGY THROUGH THE LIFE-TEC INTERDISCIPLINARY LABORATORY

Natalia de Lima Bueno

Federal Technological University
of Paraná, Brazil



All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-No-Derivatives 4.0 International (CC BY-NC-ND 4.0).

Abstract: The aim of this work is to contextualize the activities developed through the LIFE-Tec extension and research project, in order to point out the alternatives that the Interdisciplinary Laboratory for the Training of Educators has been developing with the organization and dissemination of face-to-face and virtual events, which aim to provide continuing and interdisciplinary training for educators and teachers. Through an interdisciplinary approach in dialogue with humanized conceptions of science and technology, with principles of social technology, solidarity economy, mental health, liberating pedagogies and progressistas. Promoting outreach activities to help teachers and educators with themes that dialogue with critical science and technology. It seeks to clarify the importance of interdisciplinary laboratories in public universities for the continued training of teachers and educators.

Keywords: Education, continuing education, technology and science

INTRODUCTION

The Interdisciplinary Laboratory for the Training of Educators and Technology (LIFE-Tec) at the Federal Technological University of Paraná (UTFPR) Ponta Grossa *campus*, as an extension project, has the main objective of developing continuing training, in person and virtually, for educators and the community in general. Developing an interdisciplinary approach with dialogue on humanized conceptions of Science and Technology, with principles of science, social technology, solidarity economy as highlighted in BUENO (2019,2020).

Continuing education for teachers aims to improve professional activities and the necessary knowledge, with the aim of improving teaching for students, future teachers. Therefore, educators should always seek information regarding the context in which they are

inserted, and update themselves regarding the pedagogical knowledge described in the National Common Curricular Base (BNCC) and National Curricular Parameters (PCN) (CHIMENTÃO, 2009).

LIFE has been offering face-to-face continuing education in science, technology and society every year since 2017, promoting courses, themed seminars, meetings, debate cycles, etc. to discuss contemporary issues that involve the intersection between science, technology and society in the training of educators in general and specifically in the training of basic education teachers.

In addition to virtual activities, they have been extended to teaching work, as extension activities have also been adapted to form a schedule of previously planned projects. It's important to note that events which, *a priori*, would have been offered in person began, due to the pandemic, to be organized remotely, and it's in this context that LIFE continued with its outreach activities.

Corroborating the importance of offering virtual training, Geraldo, Bonassina and Banas (2016, p. 12161), describe that activities and events developed with virtual interaction help in the process of educational growth, enabling people who are often not inserted in the social relations that involve the local community. Based on this assumption, LIFE- UTFPR, Ponta Grossa *campus* also promoted virtual meetings from 2019 to 2021, with a focus on teacher/ continuing education. During this period there were reports of experiences involving the school environment and teaching methods. In the following years, LIFE reshaped its work by also offering hybrid meetings, but without forgetting the importance of face-to-face activities for training educators.

Analyzing the context of other Brazilian universities, it was found that there are different objectives when it comes to LIFE-type projects, but in general they all have the gene-

ral objective of the importance of interdisciplinary teacher training. Therefore, the work of LIFE in universities and local communities, in person or virtually, becomes essential, as it aims to promote interaction between different teacher training courses to stimulate development aimed at: innovation in teaching practice; interdisciplinary undergraduate training; development of interdisciplinary teaching materials; use of information and communication technologies (ICT). (QUEIROZ; MACHADO. 2015)

The actions formulated by LIFE- UTFPR, Ponta Grossa *campus* are intended to provide critical and interdisciplinary training so that the educators participating in the project become concrete subjects, questioning and seeking alternative solutions to help resolve social, technical, technological and environmental issues, based on local knowledge and co-participation in the construction of this educator knowledge.

CONTEXTUALIZING LIFE

In 2012 and 2013, Capes, through the Basic Education Directorate, launched the LIFE program - Interdisciplinary Laboratory for Educator Training - with the aim of cross-communicating with other programs such as PIBID, Prodocência, Parfor, among others, for continuing teacher training: Offer teachers the opportunity of training with technological knowledge; promote an environment open to interdisciplinary dialog; master the equipment and new technological languages present in society; create interdisciplinary laboratories for training educators.

According to the CAPES document (2012)¹ The guiding principles of Lifes are linked to the theories that currently discuss the complexity of teacher training, namely: a) Interdisciplinarity as the foundation of the teacher training process and teaching and learning; b)

The need to reconfigure teaching work based on a concept of digital literacy that involves: i. the ability to search for and work with information that is distributed in numerous media (books, magazines, internet, TV and others); ii. mastery of the use of media and their languages; iii. the ability to organize technologically motivating learning environments; iv. the competence to produce knowledge and develop teaching and learning methodologies and practices in different media and languages; v. the ability to critically analyse ethical issues arising from the use of the Internet; c) Offering teacher training based on research, teaching and extension; d) Raising the quality of degree courses.

Therefore, based on these principles, LIFE has the following objectives:

- a) To provide interdisciplinary training for undergraduate students;
- b) Stimulate the articulation between knowledge, practices and educational technologies in different degree courses;
- c) Promote the mastery and use of new languages and information and communication technologies in teacher training courses;
- d) Enable learning, socialization and the collective development of practices and methodologies, taking into account the knowledge of different disciplines;
- e) Expanding opportunities to create a space that encourages and fosters the development of research and investigations into teaching activity;
- f) Promote the creation of a space for the development of pedagogical activities involving students from public basic education schools, undergraduates and teachers from HEI training programs, fostering autonomous training attitudes;

1. <https://deg.unb.br/images/Diretorias/DAPLI/cil/1892014-relatorio-LIFE.pdf>

Following this perspective, LIFE-Tec (Interdisciplinary Laboratory for the Training of Educators and Technology) was created on the Ponta Grossa campus, as a result of the demand for training in degree courses, starting in 2018, with activities beginning in 2019. LIFE is a teaching, research and extension laboratory used to develop projects linked to this area. The focus of LIFE-UTFPR Campus Ponta Grossa is teacher training, so priority is given to projects involved in this initial and continuing training activity, helping to discuss and improve the work of educators in general for this task.

LIFE participants are primarily part of the research group: GENTES (Group of Studies and Research: Education, Social Technology and Training of Educators), whose objective is: To develop interdisciplinary studies and research in the field of education and inclusion, social technology and the training of educators with dialog between teaching, research and extension, enabling community and university integration from the perspective of democratic, emancipatory, critical, supportive and inclusive education. In order to develop social technology projects in dialogue with concrete reality and considering the role of educators in formal and non-formal education spaces. Its participants also collaborate with research groups: GEPEI (Interdisciplinary Research and Studies Group on Technology and Society) and CONEA (Nature Conservation and Environmental Education Research Group). The lab has partnerships with the city's Municipal and State Education Networks, as well as with the Regional Education Center of Paraná, in the city of Ponta Grossa, and with LIFE's from other public institutions.

It also establishes partnerships with companies that contribute to the training of educators and the production of teaching materials in the region. Its work has already been

exhibited at extension and research events. The Research and Extension projects linked to LIFE are registered on UTFPR's specific Plataforma. Its space is also used for internship activities at times made available by the internship supervisors, and it interacts with curricularization subjects such as Interdisciplinary Projects. It also hosts the Lienciando/MEC Teaching Training and Support Extension project. It is concerned with the study and research of New Technologies and organizes events and courses on this subject.

LIFE is concerned with the development of initial and continuing training activities for educators as long as they are linked to research and extension projects approved by a specific UTFPR body and related to the activities of the coordinator, vice-coordinator and collaborating teachers. Through its research and extension projects, LIFE creates pedagogical alternatives in which educators can obtain critical and interdisciplinary training that dialogues with contemporary themes and can find a connection with concrete reality. Integrated into the Extension Program: IETEC (Educational Incubator for Social Technology and Sciences) UTFPR, Ponta Grossa Campus.

Since their inception, laboratories with characteristics such as LIFE have been national projects linked to degree courses at public universities and have sought to provide training for educators in line with current legislation on teacher training policies in the country and in dialog with science and technology.

EDUCATOR TRAINING AND THE LIFE PROPOSAL

The question of in-service, continuing and initial training for educators is a contemporary issue and one that increasingly requires universities to create spaces for articulating their scientific knowledge with the tacit knowledge of the internal and external community. However, how can we create pedagogical al-

ternatives in which educators can obtain critical and interdisciplinary training that dialogues with contemporary issues in science and technology and can find a connection with concrete reality?

This is the question that translates into the research problem of this extension project, which enables this continuous training so that educators can take these reflections and practices to their objective work realities. Therefore, the actions to be developed by LIFE have this intention, which is to provide critical and interdisciplinary training so that the educators taking part in the project can become concrete subjects who problematize and seek innovative and concrete alternatives to help solve social, technological, environmental, educator mental health and socio-educational inclusion problems using a problematizing critical pedagogical methodology. Working endogenously with the training of future educators who can take the courses, mini-courses and workshops exogenously to universities in the project's partner spaces.

These educators will be multipliers in the transformation of a technological, environmental, sustainable, socio-educational inclusion and mental health culture that is more in line with the reality of each community. LIFE collaborates with the Interdisciplinary Project I (Sustainable Technologies) articulating and extension discipline in the Biological Sciences degree course at UTFPR, as well as starting to collaborate in the Computer Science degree course in the distance learning modality, proposing themes related to new technologies at the Ponta Grossa campus.

Encouraging and valuing the training of educators in Brazil (INEP, 2003) is a matter of urgency and all public universities need to address this issue as fundamental to the evolution of science and technology in the country, since all scientific training is necessarily guided by teacher training.

2. See: http://www.revistaeducacion.educacion.es/re350/re350_09por.pdf. Accessed on 11/04/2019.

In these terms, we can say that it is not possible to think about scientific and technological education, the issue of sustainability, socio-educational inclusion, mental health and social technology without considering that these reflections need to be part of the training of educators in the country.

Gatti (2010, p. 1359), when researching the training of basic education educators in Brazil, states that: "Today, due to the serious problems we face with regard to school learning in our society, which is becoming more complex by the day, there is growing concern about undergraduate courses, both in terms of the institutional structures that house them and their curricula and training content. Still reflecting on professionalism and professionalization, he points out that: There is no consistency in a professionalization without the constitution of a solid base of knowledge and forms of action. With these conceptualizations, we are moving away from improvisation, from the idea of the missionary teacher, the workmanlike teacher, the artisan teacher, or tutor, the merely technical teacher, to the conception of a professional who is able to confront complex and varied problems, being able to construct solutions in their action, mobilizing their cognitive and affective resources. Therefore, when referring to the research in 2003, he clarifies that: "Professionalization is accompanied by growing autonomy, by an increase in the level of qualification, since the application of rules requires less competence than the construction of strategies" (2003, p. 61).

Nóvoa² in his article on teacher training built within the profession highlights at least five proposals that can serve as elements in the organization of teacher training programs:

- It has a strong practical component, centered on student learning and the study of concrete cases, with reference to school work;

- Moving “inside” the profession, based on acquiring a professional culture and giving more experienced teachers a central role in training younger ones;
- Pay special attention to the personal dimensions of the teaching profession, working on that ability to relate and communicate that defines pedagogical tact;
- Valuing teamwork and the collective exercise of the profession, reinforcing the importance of school education projects;
- To be characterized by a principle of social responsibility, favoring public communication and professional participation in the public space of education.

This shows that teacher training, by bringing in elements from concrete reality, becomes a determining factor for these professionals to find meaning in what they learn. Creating spaces to think about a culture of valuing education professionals in which endogenous and exogenous elements of training in the profession are discussed is the subject of study in interdisciplinary teaching laboratories. Considering the human dimension necessary to qualify the work of educators, considering the necessary training to improve human relations in the work environment and this reverberates in the formation of a culture of collective work and thus valuing the collective projects that educational spaces need to organize. Not forgetting the necessary reflection on the social function of teaching work, of the educator, that which reveals the liveliness of educational spaces as social contexts for human formation; these themes guide proposals for work such as LIFE.

Perrenoud (1997) highlights the knowledge needed for teaching practice, including the importance of critical and transformative training to act in their workplaces. In line with this concept of knowledge, Freire (1996) in his book *Pedagogy of Autonomy* points out that teaching is not possible without teaching and

that the continuous training of teachers, their updating to reflect on education as a practice of freedom and democracy, is a determining factor for dialog with contemporary and emergency issues in each society. It places teachers as subjects of the educational process and in this sense dialogues with the concept of EVANGELISTA, Olinda. SHIROMA, Eneida Oto (2007) when they demonstrate the importance of educators being protagonists in their workplaces and not obstacles to the implementation of a contemporary educational project.

Bringing all these reflections to the training of educators in both school and non-formal education, there is a constant need for continuing and in-service training to problematize issues that can help qualify teaching practice and transform their workspaces with more innovation, creativity, flexibility and autonomy. With these aspects in mind, LIFE develops actions that translate into immediate and ongoing benefits for the qualification of educators in their work spaces in the region. Offering courses, workshops, mini-courses and other actions that make it possible to problematize reality and help positively transform the local reality.

Considering the need for continuous valorization of teachers in the country, as well as the work of educators in spaces of non-formal education, this project meets the needs of in-service, initial and continuing training of educators to qualify their work in service, helping them to become subjects of transformation and multipliers of knowledge in their work spaces.

By offering actions that discuss, problematize and plan concrete projects, the educators taking part in LIFE engage in dialogue and help to transform their workspaces and improve the quality of education by improving the practice of educators in their region. From a social point of view, it's possible to

think that offering courses that help educators reflect on social technologies and sustainability could help them find viable alternatives to implement in their communities. By offering training courses in the area of mental health, LIFE helps educators to rethink their pedagogical work in a more critical and constructive way, considering the need to invest in their health, thereby creating fairer spaces and healthier working environments for the community. By proposing to develop activities in the area of socio-educational inclusion, it allows educators to think about their social inclusion processes and what tools and adaptable technologies they are creating in their spaces.

By proposing interdisciplinary training, LIFE seeks to relate themes that dialog in the areas of Human, Health, Natural, Exact and Computer Sciences, bringing reflections and paths of interrelations to these sciences from a dialectical and critical perspective, as highlighted by Janstsch (2011) and Japiassu (1976). In this sense, the articulation with the proposed curricularization of extension (MEC/Resolution CNE/CES No. 7, of December 18, 2018) demonstrated by disciplines such as Interdisciplinary Interdisciplinary Project also meets the need for initial, in-service and continuing teacher training, as undergraduate students interacting in the field with in-service teachers will be able to prepare and understand the context of their future profession.

The extension project also meets the SDGs (Sustainable Development Goals/ <https://www.undp.org/pt/brazil/objetivos-de-desenvolvimento-sustentavel>) in a number of ways: Training educators in environmental education; Training educators in sustainable and social technologies; Training future educators to work in the area of environmental sustainability.

The educators participating in the LIFE Training Program become multipliers of the knowledge acquired in the extension actions and help in the process of sustainable transformation in their region.

This project is fundamental to the training of in-service educators and future educators through the active participation of undergraduate students, through the proposed events and exchanges between students from other universities and between LIFE's from other public institutions.

LIFE WORK METHODOLOGY: A BRIEF EXPERIENCE REPORT

The work proposal is based on action research, the historical-critical and dialectical approach to research in education, in the work of continuing education for educators in the community. It uses the Freirean methodology of training with techniques from the Theatre of the Oppressed, group dynamics and the practice of the Solidarity Exchange Club. The research methodology used is the dialectical approach of Education Research to investigate the contradictions in the context of social intervention and teachers' pedagogical work. Therefore, to understand the infrastructure and superstructure from the proposed object, Nosella and Buffa (2005, p. 362) point out: "Dialectics is not a mechanical relationship that reveals, beyond appearance (school), a metaphysical essence (society), but rather a reciprocal condition of existence.[...] for the dialectical method, the fundamental thing in research on school institutions is to relate the particular (the singular, the empirical data) to the general, that is, to the social totality.

In this sense, "the dialectical method proposes that the problem arises from concrete reality, since it requires the tracing of empirical data, their various forms of evolution and their mutual connections" (Nosella and Buffa, p. 366). According to THIOLENT (1980, p.63) "action research is part of the socio-political communication between intellectuals and the masses with the effects of investigation and explanation. It is therefore very important from the perspective

of social and cultural transformation. Action research can be a scientific instrument aimed at obtaining information that is not generated in more conventional situations of passive investigation". The project is evaluated during the execution process on the basis of reports, the systematization of activities carried out in the field and compliance with the proposed objectives. The theoretical basis of emancipatory evaluation is used.

Each activity proposed by LIFE is evaluated by the participants and how they can apply the content in their workplaces is monitored. The proposed evaluation is emancipatory and the instruments used are collective work and projects presented at the end of each extension action so that the participants become multipliers of the knowledge they have learned. LIFE students present their experience reports at institutional research and extension events every year. Therefore, the subjects place themselves as participants in the processes of social change by applying the knowledge received in each extension action provided by courses, workshops and short courses.

This project is integrated into the Interdisciplinary Projects I subject in the degree courses, namely: Degree in Biological Sciences and Degree in Computing, Degree in Natural Sciences also integrated with disciplines of pedagogical training and as a discipline of curricularization of Extension, as it provides reflections on methodology of work of educators in their concrete realities. This subject is considered in the pedagogical project of the degree courses as an articulating subject and offers students a pedagogical basis for organizing the teacher's initial interdisciplinary work.

Through its training work, LIFE is also linked to the Teaching Practice and Supervised Internship disciplines in undergraduate courses, as well as specific projects linked to the MEC as a graduate student. In order

to evaluate the actions offered by LIFE, data collection instruments such as interviews and questionnaires are used with the participants.

As the work methodology involves action research, whose approach is dialectical research in education, it is considered that the participation of the executing team involves monitoring *in loco* the application of the knowledge learned in the extension actions, by at least one of the participants in their community. In this sense, the actions extend into concrete activities offered by LIFE to the participants' communities

One of LIFE's activities is organizing events and, as a result, analyzing the public served, obtaining significant information about the teacher profile and the topics needed for continuing education. One example was that in 2019 LIFE offered the First Teacher Training Meeting in person, which consisted of lectures, workshops, and conversation circles that prioritized enabling contexts related to the valorization of education, together with the teaching experience and the role of the teacher in solidarity and inclusive education.

Since 2017, a total of eight events have been held, six of which were entirely face-to-face (Educators' Training Meeting) and two virtual (Cycle of Debates and II Teachers' Training Meeting). The program included workshops, round tables, conferences and lectures. As a result of the events, a virtual questionnaire was created with the aim of collecting results relating to the virtual meetings, in order to critically analyze the organizers and improve future events.

And as a result of the pandemic, events were held entirely *online*, including the Cycle of Debates via the *Google Meet* Platform, together with publicizing the event through *posts* on the project's social media channels: *Instagram* and *Facebook*, sharing the necessary information on the topics covered. Five virtual meetings were held, each lasting an average

of two hours. Students from the Biological Sciences, Natural Sciences and Bioprocess Engineering courses took part in organizing the events, and participation was significant, establishing communication with teachers and students from various regions of the country. The proposal for an *online* offer taught the team a lesson so that in subsequent years they could adapt the hybrid offer of LIFE events to ensure the widest dissemination and participation, avoiding a large financial burden to enable greater participation and taking into account the displacement of educators in various regions of the country.

In 2020, the 2nd Teacher Training Meeting was held, also virtually, following the same principles as the first Teacher Meetings and transmitted via *GoogleMeet* with the support of social media. All the events offered generated certification, and served to instigate the teacher/disciple in critical training based on scientific methods and, in keeping with the general purpose of LIFE, to offer continuing training in the area of the intersection of science, technology and society.

As part of the extension activities and the analysis of LIFE's work, a questionnaire was used as a data collection tool via the *Google Forms Platform*, with the aim of investigating the training of educators based on interdisciplinary laboratory work in dialogue with humanized conceptions of Science, Technology and Society, which was then sent to the participants of the events. The results of this field research were systematized and analysed in the light of critical theories of education, and presented at the following event.

THE DYNAMICS OF LIFE'S ACTIVITIES

At this point, it is worth briefly contextualizing the activities for 2019 and 2020. The planning was based on meetings held with the LIFE project's team of fellows and volunteers, who analyzed the lack of events aimed at undergraduates and suggested organizing face-to-face and/or virtual events, with the aim of valuing teachers. Thus, corroborating the research, the authors Lacerda; *et al* (2008) describe that:

Scientific events are an essential source in the search for and apprehension of new knowledge, their purpose is to bring together professionals or students of a particular specialty to exchange and transmit information of common interest to the participants. (p. 130)

In this way, scientific educational meetings have multiple functions: to improve scientific work, to reflect the state of the art and to provide members with a means of informal communication. As such, they play a very important role for the community affected by the events offered. (LACERDA; *et al* 2008apud CAMPELLO 2000)

At the 2019 meeting, the team organizing the events, made up of UTFPR, Ponta Grossa *campus* professors and students from the Biological Sciences, Natural Sciences and Bioprocess Engineering courses, met monthly to define objectives and analyze the real demand for topics concerning teacher training in the region. They also designed and discussed how the events would be held, as well as choosing the dynamics of the activities and themes to be presented during the meeting days.

In addition to publicizing the project, there was a division of tasks to be carried out. After planning, the preparation of the meetings began. To publicize the events, the new communication and information technologies were used through social networks, where folders

were made on the *Canva* platform, which were disseminated using *Instagram*, *Facebook*, *e-mail* and *WhatsApp* as support.

As a cultural program for the 2019 events, it was decided to develop activities such as: solidarity coffee, tribute to teachers, exchange club/theater, practices such as *Tai Chi Chuan* and pollination trail, ending the event with talent shows, being held in the university's conviviality center, with the participation of teachers, students and the general community.

Also noteworthy were the theater workshops, which developed practices of trust and freedom of expression for a better understanding of the performing arts, offered by a student representing the student protagonism of the UTFPR, Ponta Grossa *campus*. At another time, the *Tai Chi Chuan* practice was offered by the *campus* psychologist, promoting mental and physical health, in line with the balance of body and mind.

As a tribute to Teachers' Day, the "Teachers' Lives" exhibition was organized, in which memories and objects that are significant to each teacher were displayed, showing a little of their personal side that exists outside the university, such as: paintings, photographs, books, musical instruments, personal objects, among others. This activity aimed to demonstrate that it is necessary to establish a dialogue between teachers and students, showing that pedagogical work is constituted by the trajectory of the construction of teachers' work based on their realities.

In 2020, as a result of the COVID-19 pandemic, the LIFE team chose to develop the Cycle of Debates, offered virtually via the *Google Meet* platform with the main objective of providing dialogues and social interaction, together with the local community and the university. The topics covered in the lectures were education, democracy and teacher training, discussing issues related to the reality of teaching work in the face of the most emerging technological issues.

In this context, the II Teacher Training Meeting was offered virtually, focusing on the remote experiences of the invited teachers, contemplating the appreciation of teachers in times of pandemic, with the systematization of content and the elaboration according to the reality of the educator being essential, proposing to be open to new teaching methods and challenges. Figure 1 below shows the *folders* for the events organized by the LIFE project.

At the end of the organization of the events, a virtual questionnaire was sent via *e-mail* to all the participants in the events held, with the aim of collecting results in relation to what is being offered and, from this, analyzing each piece of constructive criticism in a motivating way, thus improving the results in the course of the next events organized. Figure 2 shows the eighth question in the questionnaire.

The answers to question 8 of the questionnaire show that the issue of technology is in evidence, partly because of the pandemic and its impact on teachers' work, partly because of the immediate need for teachers to be trained in this area, and also because of the inclusion of new technologies in the school environment, which are necessary for better educational development.

In addition to the extension activities, LIFE also has a research project entitled 'Interdisciplinary Laboratory for Educator Training: a study in science, social technology and teaching work', which aims to investigate the pedagogical practices of educator training based on interdisciplinary laboratory work in dialogue with humanized conceptions of science and technology and society. Students from degree courses are taking part in the research as voluntary scientific researchers.

8. Of the topics below, please select the options that interest you and are most suited to the reality of educator training and practice today

19 answers

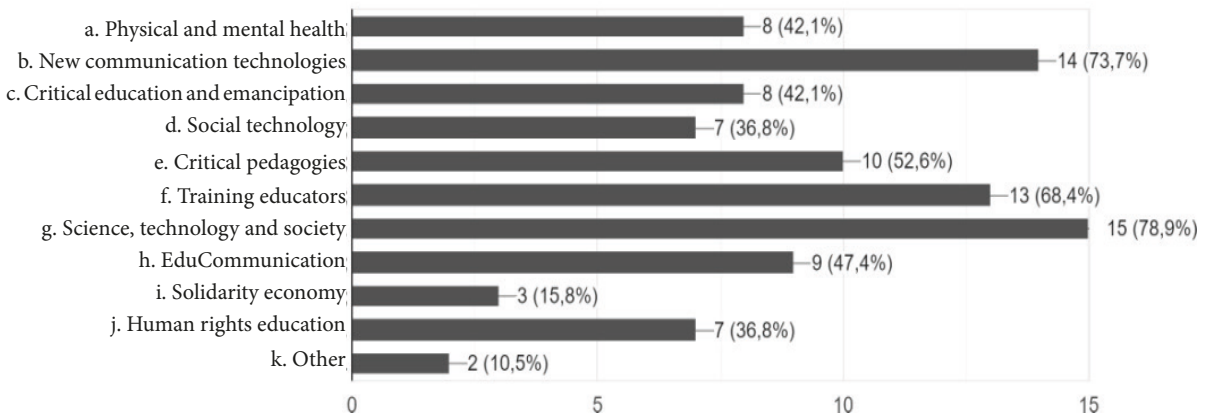


Figure 2-Graph with answers obtained in the questionnaire sent by *email* to participants in the LIFE/2021 events. Source: *Google Forms*.

FINAL CONSIDERATIONS

The activities and events carried out by the extension project are developed by teachers and students from the UTFPR Ponta Grossa *campus*. In all the face-to-face and virtual meetings, the importance of spaces in academic circles that dialogue with the local and university community on various subjects such as education, valuing the profession and current affairs is noted. Thus, considering the need for continuous teacher development in the country, as well as in the virtual environment as a result of the pandemic, it became necessary to use technologies as the main teaching and support environment for the teacher.meeting the objective of LIFE which is to develop continuous training, in person and virtual, for educators and the community in general. Through an interdisciplinary approach with dialogue on humanized conceptions of Science and Technology, with principles of social technology, solidarity economy and mental health.

The proposal developed for teacher training takes place through face-to-face events and virtual or face-to-face conversation circles

to dialog, re-reflect, through the themes mentioned in this article, with the analysis in the developed questionnaire it was observed that the objective of proposing continued training was met in the proposed period of the years 2019 and 2020 in the lectures in addition to the interaction and dialogue between the community and the university. And so in subsequent years LIFE has continued to incorporate the theme of technology as a foundation for continuing and in-service teacher training. LIFE's research permanently dialogues with extension and qualifies the work of future teacher researchers.

Finally, it can be concluded that the educational events organized and offered are essential, whether for continuing training or for valuing the profession through the participants' reports of their experiences, serving as inspiration for those who are in the process of training and support for those already working in the field of education. That continuous training in the themes of science, technology and society are important factors in contemporary times, giving educators the opportunity to re-think their workplace as active subjects in the process, not as mere observers.

REFERENCES

BRASIL. INEP (Instituto Anísio Teixeira). **Estatística dos Professores no Brasil**. 2003

BUENO, Natalia de Lima. **LIFE (Laboratório Interdisciplinar de Formação de Educadores – Ciência e Tecnologia)**. Projeto de Extensão apresentado em Edital UTFPR/DIREC-PG, 2019/2020.

CAPES. Diretoria de Formação de Professores da Educação Básica – DEB. **RELATÓRIO DE GESTÃO LIFE** Brasília, 2013. <https://deg.unb.br/images/Diretorias/DAPLI/cil/1892014-relatorio-LIFE.pdf> acessado em 2019.

CHIMENTÃO, Lilian. **O significado da formação docente continuada docente. 4º CONPEF. 2019**. Disponível em:

EVANGELISTA, Olinda. SHIROMA, Eneida Oto. **Professor: protagonista e obstáculo de reforma**. In.: Educação e Pesquisa, São Paulo, v. 33, p. 531-541, set/dez. 2007.

FREIRE, Paulo. **Pedagogia da Autonomia: saberes necessários à prática educativa**. São Paulo: Paz e Terra, 1996.

GERALDO, A.; BONASSINA, A.; BANAS, J. **Inclusão escolar: uma realidade inacabada. XIII Congresso Nacional da Educação**. 2016 Disponível em: https://educere.bruc.com.br/arquivo/pdf2017/22932_12450.pdf. Acesso em: 09 ago. 2021.

<http://www.uel.br/eventos/conpef/conpef4/trabalhos/comunicacaooralartigo/artigo.comoral2.pdf> Acesso em: 03 set. 2021.

JANSTSCH, Ari Paulo. BIANCHETTI, Lucídio. **Interdisciplinaridade: para além da filosofia do sujeito**. 9ª edição. Atualizada e ampliada. Petrópolis, RJ: Vozes, 2011.

JAPIASSU, Hilton. **Interdisciplinaridade e patologia do saber**. Rio de Janeiro: Imago, 1976.

LACERDA, Aureliana Lopes de et al. **A importância dos eventos científicos na formação acadêmica: estudantes de biblioteconomia** Importance of scientific meetings at the academic formation: library science students. **Revista ACB**, [S.l.], v. 13, n. 1, p. 130-144, mar. 2008. ISSN 1414-0594. Disponível em: <https://revista.acbsc.org.br/racb/article/view/553/678>. Acesso em: 03 set. 2021.

MEC/ CNE. **Resolução CNE/CES nº 7, de 18 de dezembro de 2018**. Estabelece as Diretrizes para a Extensão na Educação Superior Brasileira e regimenta o disposto na Meta 12.7 da Lei nº 13.005/2014, que aprova o Plano Nacional de Educação - PNE 2014-2024 e dá outras providências.

NETO, Josapha tSoares et al. **Tecnologias de ensino utilizadas na Educação na pandemia COVID-19: uma revisão integrativa**. **Research, Society and Development**, v. 10, n. 1, p. e51710111974-e51710111974, 2021.

NOSELLA, Paolo. BUFFA, Ester. **As pesquisas sobre instituições escolares: o método dialético marxista de investigação**. **Ecos Revista Científica**, São Paulo, V.7, N.2, P. 351-368, jul./dez.2005.

NÓVOA, António. **Vida de professores**. 2 ed. Portugal. Porto Editora LDA, 1995.

ODS - **Objetivos do desenvolvimento sustentável** - (<https://www.undp.org/pt/brazil/objetivos-de-desenvolvimento-sustentavel>). Acessado 2019.

PERRENOUD, Philip. **Práticas pedagógicas, profissão docente e formação**. Perspectivas sociológicas. 2 ed. Lisboa. Publicações Dom Quixote. Instituto de Inovação Educacional, 1997.

QUEIROZ, Gloria Regina Pessoa Campello; MACHADO, Alan Freitas. **O LABORATÓRIO INTERDISCIPLINAR EDUCAÇÃO EM CIÊNCIAS (LIEC): APROXIMANDO ATORES NA FORMAÇÃO DE PROFESSORES NA UERJ**. **Revista Aproximando**, v. 1, n. 2, 2015.

TARDIF, Maurice. LESSARD, Claude (org.). **O ofício do Professor: história, perspectivas e desafios internacionais**. 5 ed. Petrópolis, RJ: Vozes, 2013.

THIOLLENT, Michel. **Comunicação e Sociedade: pesquisa-ação no campo da comunicação sócio-política**. São Paulo: Cortez, 1980.

VIGOTSKI, L. S. **A construção do pensamento e da linguagem**. São Paulo: Martins Fontes, 2000.