

SECTION: ARTICLES

## Charles Maguerez Arc: reflective enhancer in health education in the stricto sensu postgraduate program<sup>1</sup>

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Arco de Charles Maguerez: potencializador reflexivo na educação em saúde na pós-graduação stricto sensu

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Arco de Charles Maguerez: potenciador reflexivo en educación para la salud en el programa de posgrado stricto sensu

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### ABSTRACT

The objective of this article is to report the experience of postgraduate students when using the Charles Maguerez Arc as a methodology that problematizes and enhances critical-reflective and creative thinking in a health education discipline. The method is experience report on the construction of the Arch developed in the Postgraduate Course in Health and Rurality. This study addresses the theoretical aspects of education as a promotion tool. The problematizing learning proposal, together with the theoretical-conceptual convergences supported by Freire's theory, allowed reflections and connections between pedagogical practices and the dialogue of health processes experienced by master's students. This enabled

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disaccommodation and critical reflection on ideal-real practice. The development of the Charles Maguerez Arc as a tool for promoting health education showed that it is possible to use educational theories and active methodologies in the field of health, as the critical-reflective approach gives those involved the opportunity to become protagonists in your teaching-learning process.

**Keywords:** health education; problem-based learning; graduate education; competency-based education; public health education.

## RESUMO

O objetivo deste artigo é relatar a experiência de pós-graduandos ao utilizar o Arco de Charles Maguerez como uma metodologia que problematiza e potencializa o pensamento crítico-reflexivo e criativo em uma disciplina de educação em saúde. O método é o relato de experiência da construção do Arco desenvolvido no curso de Pós-Graduação em Saúde e Ruralidade. Este estudo aborda as vertentes teóricas da educação como uma ferramenta de promoção. A proposta de aprendizagem problematizadora, juntamente com as convergências teórico-conceituais sustentadas pela teoria freiriana, permitiu reflexões e conexões entre as práticas pedagógicas e a interlocução dos processos de saúde vivenciados pelos mestrandos. Isso possibilitou a desacomodação e a reflexão crítica sobre a prática ideal-real. O desenvolvimento do Arco de Charles Maguerez como ferramenta para a promoção da educação em saúde evidenciou que é possível a utilização de teorias da educação e metodologias ativas no campo da saúde, pois a abordagem crítico-reflexiva oportuniza aos envolvidos tornarem-se protagonistas no seu processo de ensino-aprendizagem.

**Palavras-chave:** educação em saúde; aprendizagem baseada em problemas; educação de pós-graduação; educação baseada em competências; educação em saúde pública.

## RESUMEN

El objetivo de este artículo es reportar la experiencia de estudiantes de posgrado al utilizar el Arco de Charles Maguerez como metodología que problematiza y potencia el pensamiento crítico-reflexivo y creativo en una disciplina de educación en salud. El método es relato de experiencia sobre la construcción del Arco desarrollado en el Postgrado en Salud y Ruralidad. Este estudio aborda los aspectos teóricos de la educación como herramienta de promoción. La propuesta de aprendizaje problematizador, junto con las convergencias teórico-conceptuales sustentadas en la teoría de Freire, permitieron reflexiones y conexiones entre las prácticas pedagógicas y el diálogo de los procesos de salud vividos por los estudiantes de maestría. Esto permitió el desalojo y la reflexión crítica sobre la práctica ideal-real. El desarrollo del Arco Carlos Maguerez como herramienta para promover la educación en salud

demonstró que es posible utilizar teorías educativas y metodologías activas en el campo de la salud, ya que el enfoque crítico-reflexivo brinda a los involucrados la oportunidad de convertirse en protagonistas de su proceso de enseñanza-aprendizaje.

**Palabras clave:** educación en salud; aprendizaje basado en problemas; educación de postgrado; educación basada en competencias; educación en salud pública.

## INTRODUCTION

Health education aims to develop in individuals, families and communities the sense of care for individual and collective health. A review study on the concept of health education considers that this is a multidisciplinary teaching-learning process centered on the subject and also that professionals recognize its importance and health as a priority of people in life, so that they may assist in the expansion of knowledge, skills and attitudes of behavior, improvement in health, and social and economic impact (PUEYO-GARRIGUES *et al.*, 2019).

In Brazil, in the 80s, there is a movement towards more horizontal approaches in educational practices guided by dialogical and problematizing bases, for the development of personal and emancipatory capacities, in the transformation of reality and collective actions, that is, an education that values knowledge, cultures, needs and expectations, assumptions that converge with the principles of the Unified Health System (UHS) and Freire education. In this sense, there are challenges in the health area, giving rise to the need to reconfigure educational actions in which the subject is central in the process. In addition, there is a need for alignment between the management of services and training institutions (FERREIRA *et al.*, 2021).

In this context, it is recommended that collective educational practices take place in environments with exchange of knowledge directed to the interests and experiences of the community, and adopting active methodologies as a strategy, so that the individual becomes co-responsible for self-care, through a reflective, participatory and political learning (BARRETO *et al.*, 2019).

The active methodologies, which allow flexibility and dynamism in the elaboration of knowledge, and the Charles Maguerez Arc, which can be developed at different levels of learning due to the freedom to build and improve knowledge, building of collective knowledge. In vocational training, this instrument drives towards improving critical thinking about reality, identifying the challenges and potentialities as triggers of the process of change and thus, the participants become protagonists of their own learning (PRADO *et al.*, 2012; SILVA *et al.*, 2020). An international study with postgraduate students revealed better learning

outcomes when students had high levels of satisfaction and ability to solve group problems (BI *et al.*, 2019).

Therefore, we highlight the use of the arc developed by Charles Maguerez and presented by Bordenave and Pereira (2004) as a problematizing methodology, as it enables the acquisition of knowledge and intellectual skills to develop critical-reflective thinking in problem solving (SOARES; ILHA; COPETTI, 2021). In this sense, postgraduate students can be stimulated in the active teaching-learning process with this powerful tool that is able to awaken engagement and commitment in the process of change (BARRETO *et al.*, 2019; MACEDO *et al.*, 2018). In addition, it can promote transformations through content reflection, through the promotion of interdisciplinarity and contributing to the training and qualification of future professors (SANTOS, 2020).

In pedagogical practice, whether consciously or not, the professor adopts a theory. The Freirean dialectic matrix signals a horizon of emancipation of subjects committed to an education concerned with social transformation, in places marked by strong power relations and oppressions (PEREIRA; CERDA CERDA, 2018). The theories of education convergent with active methods opportune and sustain teaching-learning processes that instigate students to disseminate active practices, in educational institutions, in the field of health education, such as Permanent Education in Health and care practice (MELO *et al.*, 2022). Likewise, health professionals, by promoting educational actions, also assume a theoretical basis, and giving visibility to active educational experiences can contribute to professional training aimed at health promotion (BARRETO *et al.*, 2019) and user participation in obtaining better living and health conditions.

Based on these assumptions, the objective of this study is to report the experience of postgraduate students with the Charles Maguerez Arc. This problematizing methodology enhances critical-reflective and creative thinking in a health education discipline.

## METHOD

This is an experience report on the construction of the Charles Maguerez Arc, from the proposal of the discipline of Health Education, linked to the Postgraduate Program in Health and Rurality (PPGSR) of the Federal University of Santa Maria (UFSM), Palmeira das Missões campus/RS. This is an observational method of reality, which does not aim to prove hypotheses, but rather to constitute relationships between the results experienced and the existing theoretical precepts and related to this reality (DYNIEWICZ, 2009).

The PPGSR is an interdisciplinary master's program in the area of Nursing. The classroom was the scenario of experiences. Classes were held in person, with weekly meetings of two hours,

from April to August 2022. These were mediated by three professors and had the participation of 10 students: seven nurses, one physiotherapist and two nutritionists.

The mediation of professors was essential in the development of activities, as it ensured that the constructions and reflections proposed were aligned with the objective of the activity, thus avoiding that the master's students departed from the problem.

The class was divided into four working groups. Next, the professors presented several pedagogical theories, namely: Critical-Social Pedagogy of Contents; Pedagogy of Skills - Learn to Learn; Neo-Scholavism Pedagogy; Critical-Reproductive Pedagogy. These theoretical currents subsidize educational actions (at any level of training).

The master's groups were free to develop their reflections and discussions on the proposed theme and, according to the theory chosen, elaborated their projects. At the end, a compiled with the result of the learning process was built, as presented in this text.

Furthermore, they identified the theory of Paulo Freire (Liberating Learning) in the whole process of discussion and construction of individual and collective knowledge proposed by the discipline, by (re)knowing its potentialities.

As for the ethical aspects, since this is an experience report, this study did not need to be submitted for approval by the Research Ethics Committee (REC).

## **RESULTS AND DISCUSSIONS**

To present the discussions in this study, we opted for the organization of the reflections in two units, namely: 3.1 Building the Charles Maguerez Arc in the discipline of Health Education and 3.2 Theoretical-conceptual convergences for health education and the axes of education projects.

In the first unit, the results built in the classroom based on the steps of the Charles Maguerez Arc will be presented, aiming at its methodological proposal of construction. And, in the second, the projects elaborated by the master's students linked to the convergence of pedagogical theories will be presented.

### **3.1 Building the Charles Maguerez Arc in the discipline of Health Education**

After the presentation of all and the approach to the problematizing method, the students were proposed to, in the course of classes of the discipline, create the Charles Maguerez Arc, following the five stages: (1) Reality observation/Problematization, (2) Key Points, (3) Theorization, (4) Hypotheses and Solutions and (5) Application to reality (BERBEL, 2012).

In the first stage [(1) Reality Observation/Problematization], the professors explained about the method of the Charles Maguerez Arc, illustrating the phases. The Arc was designed in the frame and the work/reflections began through the inducing question: "How is health education in Primary Care presented in your experience?". At this time, the students started a reflective dialogue about their previous experiences, and speeches related to difficulties in the field of educational practices of health teams emerged, as represented in Figure 1.

This movement allows the group to dialogue with each other, think and reflect from previous knowledge, conquered in personal and professional experience. Here, we can observe the investigation of the thematic universe through dialogue and respect for different knowledge (SOUZA *et al.*, 2021).

In the second stage [(2) Key points], after reflecting, discussing and signifying the experiential reality, the priority problems were found, highlighting: the interdisciplinary and multiprofessional action of the teams in the educational process in collective health in the UHS.

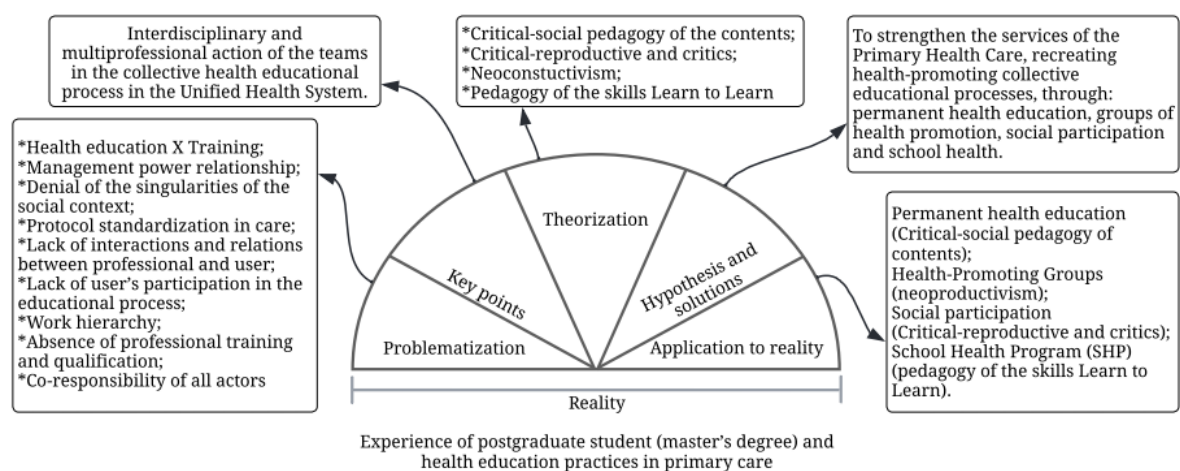
In the third stage [(3) Theorization], the master's students organized themselves into working groups (WGs) and each group began the research of a theory, relating it to the priority problem (identified in the second stage), seeking to answer the question: "How is it possible to promote health education in primary care based on an education theory?". In the sequence, three of the groups presented their theories through concept maps, while the fourth group opted for an exhibition and dialogue presentation. The consensus of the groups, at the end of socialization, was that the critical-social theory of content is the educational strand that aligns with the proposition of solutions for health education.

In the fourth stage [(4) Hypotheses and Solutions], there were projects with the themes: Permanent Health Education (PHE), Health Promotion Groups, Social Participation and School Health Program (SHP), based on pedagogical theories. And, in the fifth stage [(5) Application to reality], the WGs presented the projects in the discipline, a moment of (re)knowing that the different theories of education can contribute to more effective collective educational practices, strengthening the health user as the protagonist of their care and the search for better living conditions and health.

The National Curriculum Guidelines state that the educational process should be based on the construction of critical-reflective, generalist and humanistic professional profiles; characteristics that can be explored through problematizing methodologies that allow a permanent learning process (SILVA *et al.*, 2022).

In this line, the Charles Maguerez Arc brings with it the possibility of reflection from an experience, with the appreciation of the knowledge of the actors involved, in order to validate their speeches and experiences, in order to understand a reality, list weaknesses and (possibly) solve them or minimize them at the end of the process (BERBEL, 2012), as shown in Figure 1.

**Figure 1** – Charles Maguerez Arc built by the group of postgraduate students and professors in the Health Education discipline, in the Postgraduate Program in Health and Rurality of the UFSM, Palmeira das Missões /RS campus, in the year 2022.



Source: Created by the authors.

With the learning strategy used by the Charles Maguerez Arc, it is observed the applicability in teaching and construction of knowledge in various areas, professionals and knowledge. As an example, in the area of nutrition Silva *et al.* (2023) and Vitorino *et al.* (2022) used the method to train health professionals. The first addresses food and nutritional insecurity and the second, the feeding and immunity. While, in the area of education, the study of Soares *et al.* (2022) analyzed the knowledge of teachers of municipal schools about the problematizing methodology.

In this experience, the previous training of teachers in relation to the methodologies that activate the student protagonism allowed the increase in the autonomy and creativity in the production of collective works, as well as to boost the engagement of students in the teaching process, points considered by Colombo and Berbel (2007) as fundamental for the construction of knowledge.

The course executed within each stage also allowed a critical reflection, through the elucidation of the guiding axis listed on the difficulties of the inter and multiprofessional work of the teams in collective health. At each stage, the level of knowledge built and the



convergence between the possibilities and limits presented by the theories were deepened. The relationship that is built around learning ignites a growing curiosity, making it more creative (FREIRE, 2004), which provides the epistemological maturity for the development of the second point addressed in this study.

### 3.2 Theoretical-conceptual convergences for health education and the axes of education projects

Chart 1 presents the proposals of the projects to apply the transformative reality of educational practices in collective health in the UHS.

**Chart 1** – Projects prepared by postgraduate students in the stage of application to reality, in the Health Education discipline in the Postgraduate Program in Health and Rurality of the UFSM, Palmeira das Missões campus /RS, in the year 2022.

<b>Axes of Health Education Projects</b>	<b>Pedagogical Theory</b>	<b>Convergences between active theory and method</b>	<b>Objectives</b>	<b>Participants</b>	<b>Method</b>
Permanent Health Education	Critical-Social Pedagogy of Content	Associated with Paulo Freire's problematizing theory.	To discuss and reflect on the health education practices of UHS PHC teams.	Family Health Teams.	Maguerez Arc – Problem Situation created by the teams based on the realities experienced as a trigger for problematization.
School Health Program	Competence Pedagogy – Learn to learn	Associated with Paulo Freire's problematizing theory.	To bring health teams, educators and students closer together in the health education process, with a view to qualifying the SHP.	Family Health teams, educators and students (children and adolescents).	Maguerez Arc – Triggering Problem Situation, considering learning technologies (games, theater, board, fishing, among others).



Health Promotion Groups	Neo-Scholavism Pedagogy	Associated with Paulo Freire's problematizing theory.	To discuss with teams, users' and communities' limits and possibilities in forming health groups.	Family Health Teams, users and the community.	Problem tree – represented through root (investigation of the problem/topic), stem (theme investigated) and leaves (viable solutions).
Social Participation	Critical-Reproductive Pedagogy	Associated with Paulo Freire's problematizing theory.	To discuss the problem with the actors involved in the solution process.	Family Health Teams and Lead Users Community.	Culture circles – thematic investigation, coding and decoding, and critical unveiling.

Authors' note: The axes presented in Chart 1 were built in the development of the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> stages of the Charles Maguerez Arc. After defining the axes, the master's students were divided into working groups and chose a project to guide their reflections. Master's students were free to choose the forms of discussion for each axis.

Source: Created by the authors.

When analyzing the aspects of education studied, the critical-social theory of content is highlighted as a pedagogy that considers the historical context of the learner, with the aim of making education a facilitator of the processes of social transformation, because the characteristic of mediator of education can promote the transformation of consciences and provide the democratization of society (ARANHA, 1996). This pedagogy is related to the proposal of applying the Maguerez Arc to professionals to think about Health Education, because it seeks a critical reflection that considers the existing social context and the scenario of action as a way to highlight a portion of reality, transformation (BERBEL, 2012).

Thus, the PEH project is understood as a recovery of the policy itself, because it attributes to education the hope of change through the meeting of professionals and the improvement of the work process, taking into account the problems arising from the place, with a view to transforming professional practices and local (re)organization (UBESSI *et al.*, 2021).

This occurs considering work as a developer of knowledge linked to daily life and the learning process, in addition to potentiating inter and multiprofessional actions in an articulated and intersectoral way. In this sense, pedagogical practices can be effective in the qualification and significance of learning processes and professional practice (ALMEIDA *et al.*, 2016; UBESSI *et al.*, 2021).

PEH is focused on the training of professionals in order to improve comprehensiveness and equity in access and health care (UBESSI *et al.*, 2021). This process envisions inaction or that the learning path is not exhausted, because the more one exercises the ability to learn, the more critical and creative subjects are built and developed (FREIRE, 2004).

The pedagogy of the skills of learning to learn can be used as the basis for the actions of the SHP. According to Rezer (2020), this theory values content and knowledge, but prioritizes the ability to solve a problem in an immediate, useful and replicable way. In this context, it emphasizes that good knowledge is applicable, which can also be a limiting factor when one wants a critical, human, reflective, creative, deep and collaborative learning.

Regarding the pedagogy adopted in the actions of the SHP, when education and health professionals know the objectives of the program and feel whether they are more confident in the development of activities and recognize the interdependence between sectors and of joint work between the different professionals and people in the community, it is possible that this could develop with more concrete effects on health promotion; however, it is considered the difficulty of including the community in the actions of the SHP and a local agenda that facilitates meetings between professionals and users (SAKAI *et al.*, 2021).

Therefore, by denying the complexity of health production in the territories, initiatives lose the power of transformation and, thus, reinforces the need for integration between education and local health systems with active learning (learning to learn) involving students, professors, health workers (FERLA, 2021) and the community.

Still on actions of the SHP, the study shows a higher frequency of actions of the component "I - Clinical and psychosocial evaluation" and to a lesser extent those of the component "II - Promotion and prevention of diseases and complications". It should be noted that the places where the SHP is deployed may have specific demands of the territories. In addition, it is recommended to reflect on the planning of actions between education and health, with the sharing of knowledge (MEDEIROS *et al.*, 2021; SAKAI *et al.*, 2021).

The Neo-Scholavism strand (present in 1991 and 2001), with a traditional and technical theoretical basis, proved to be exclusionary, as it imputed to the individual all the responsibility of learning and being in school (SAVIANI, 2008, 2013). By associating the pedagogical idea of neo-scholavism with health education, it is understood that, when the problem/content is focused solely on the disease and the biomedical view seems more appropriate, however, it ignores the knowledge and culture of the individual, family and community.

When one thinks of comprehensiveness in the UHS and in health groups as a potential for mobilizing forces capable of managing self-care with greater autonomy of the participants, this current is limiting. And, in this sense, social critical pedagogical aspects are mentioned. An integrative review study shows greater adoption of Paulo Freire's theoretical framework, the National Health Education Policy, Health Belief Model, Kurt Lewin's group dynamics, hermeneutic interpretative paradigm and integrated model of change (SEABRA *et al.*, 2019). Coherence and articulation of thinking, doing and rethinking what is done happens in the dialectical process of awareness that drives action and, without it, there is no possibility of transformation (FREIRE, 2015). To do so, there will have to be the strangeness of the concrete and lived reality in order to be able to review and recreate conditions for changing health in groups.

The critical-reproductive aspect is associated with the idea that the existence of a dominant socioeconomic structure uses the school as a space for communication and maintenance of domination (CAMARGO *et al.*, 2017). This perspective of education, when associated with social participation, leads to domestication, contrary to the principles of popular education and social participation in the UHS.

The problematizing and libertarian education of Paulo Freire, through culture circles, promotes the debate of professional practice in Primary Care. It is possible to carry out a respectful, loving and horizontal dialogue in groups of people who wish to share experience and knowledge, and in this way one can learn from each other and produce new horizons (SOUZA *et al.*, 2021).

Nevertheless, there is little space for users to participate in the management of services, due to the absence of a democratic attitude of professionals and managers, and little availability to include users in the system. In addition, there is a discredit of user participation in health councils, because "it is believed" that there is an inability in articulation and decision-making, being this function in charge of technicians and bureaucrats.

Thus, the need to expand society's participation in public health policies is reiterated, through the organization of conversation circles, to contribute to the construction and strengthening of active subjects that approach social rights (MALVEZZI *et al.*, 2021).

In addition to the obstacles, successful experiences in the organization of popular participation reveal that there is interest in acting on local health needs and their improvements, and thus develops a better understanding of the demands of health professionals and services in strengthening links between users and teams, as well as inclusion in the health care process (VIEIRA *et al.*, 2020). Here, the recognition and acceptance of the educational role of health professionals fit.

The educational conceptions of Paulo Freire list several essential elements for a critical-reflective, participatory and liberating education, including: the availability to create possibilities to produce/build knowledge (epistemological curiosity), in the recognition and assumption of the cultural identity (context/reality) of the subjects and the dialogical promptness, which can be used as important instruments for a participatory and emancipatory health education (FREIRE, 2004).

Therefore, the theorization and the proposal of the discipline were positive as a strategy of reflection and application to reality, and as a tool of analysis and transformation. Hypotheses of solutions to the problems were generated based on the theory of education, which the students, after discussion, reaffirmed that it is possible its use in professional practice as a strategy to potentiate health education within the territories, care and social participation.

Considering the use of education theories to solve the problems mentioned, it was possible to apply the four theories described above (Critical-Social Pedagogy of Contents; Pedagogy of Skills - Learning to Learn; Neo-Scholavism Pedagogy; Critical-Reproductive Pedagogy), understanding that all, in their apogee, responded to social, political and economic questions. It is also recorded that they sought to expand perspectives and presented limits, even with the feasibility of converging them, addressing and assisting, each, in a differentiated way in the reflections, aiming to solve problems and create strategies for health education. It should be noted that the problematizing and libertarian education of Paulo Freire was seen by the group as the one that best aligns with the public policies of Permanent Health Education, School Health, Health Promotion Groups and Social Participation.

In this plot produced, tensioned and conducted by an active methodology around theories, the processes triggered from the reflections and connections between the pedagogical practices and the interlocution for the improvement in the health processes enabled the critical reflection on the ideal and real practice, and the theory-practice relationship, making unfeasible what Paulo Freire called "activism". These assumptions lead to dialogue about a democratic education, where the subjects understand themselves as agents of change capable of deciding and intervening in reality (FREIRE, 2004).

The purpose of this structure is to enable critical reflections on teaching and professional practices. The use of active methodologies with problematizing theoretical bases can expand the dialogue, insert the subjects in the discussions and increase their autonomy and these, in turn, are established in the understanding of emancipation, coming from a liberating education.

## FINAL THOUGHTS

The methodological approach used in the discipline provided the active participation of master's students in the reflection and development of the stages proposed by the Charles Maguerez Arc, which allowed the critical analysis of the practices developed in the professional field, theories, leading to realize the connection and complementation between theory and practice.

In this process, it was possible to (re)visit the strategic use of active pedagogical methodologies in the health field, in order to enhance health promotion, expansion of access and qualification of comprehensive care; this to improve the (inter)professional training process with the subject as protagonist and not mere spectator. It is understood, thus, the importance of reflection in front of the professional look towards the demands of health in the field of action, as well as the protagonism of the actors in the process of individual and collective learning.

However, educational training, derived from a traditional and reproductive basis, brings little scope for the expansion of critical-reflective consciousness. This report is the product of the possibility presented by professors, where there was opportunity to (re)create, (re)live (re)produce and (re)build knowledge, seeking a new (old) form of education, where students are conscious subjects of social transformation.

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