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SECTION: ARTICLES

Phenomena-Based Learning in Medicine teaching: how to treat blind patients?[1]

Aprendizaje Basado en Fenómenos en la enseñanza de Medicina: ¿Cómo tratar a pacientes ciegos?

Aprendizagem Baseada em Fenômenos no ensino de Medicina: como atender os pacientes cegos?

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ABSTRACT

In Phenomenon-Based Learning, the starting point for learning considers the holistic context in which real-world phenomena occur. This study aims to report the experience of using this methodology applied in a project with blind individuals, conducted by medical students from Blumenau Regional University within the Community Interaction course (from the first to the fourth phase). Four health education activities were developed: the creation of pamphlets, theatrical performances, discussion circles, and awareness activities such as walking

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blindfolded to reproduce the experience. The project also resulted in the establishment of institutional partnerships. The thematic analysis of the insights gained from these experiences generated five categories: spatial perception; social responsibility; institutional partnerships; feelings and values; and scientific production. It is concluded that Phenomenon-Based Learning, by promoting a holistic and contextualized approach to learning, encourages students to engage more deeply with the phenomenon under study. It also proves to be an effective tool for attitude change and the strengthening of social skills. The application of this methodology proved to be both challenging and complex, requiring continuous engagement and teacher training.

Keywords: phenomenon-based learning; medical education; blind patients; inclusion in medical care; active teaching methodologies.

RESUMO

Na Aprendizagem Baseada em Fenômenos, o ponto de partida para o aprendizado considera o contexto holístico em que os fenômenos do mundo real acontecem. Este estudo objetiva relatar a experiência do uso dessa metodologia aplicada em uma vivência com pessoas cegas, realizada por estudantes do curso de Medicina da Universidade Regional de Blumenau, no contexto da disciplina Interação Comunitária (da primeira à quarta fase). Foram desenvolvidas quatro atividades de educação em saúde: criação de folders, encenação teatral, rodas de conversa e atividades de sensibilização, como a locomoção com vendas a fim de reproduzir a vivência. A vivência também resultou no estabelecimento de parcerias institucionais. A análise temática dos insights proporcionados por essas experiências gerou cinco categorias: percepção espacial; responsabilidade social; parcerias institucionais; sentimentos e valores; e produção científica. Concluiu-se que a Aprendizagem Baseada em Fenômenos, ao promover uma abordagem holística e contextualizada do aprendizado, instiga os estudantes a se envolverem de maneira mais profunda com o fenômeno em estudo, além de ser uma ferramenta eficaz para a mudança de atitude e fortalecimento de competências sociais. A aplicação dessa metodologia revelou-se desafiadora e complexa, exigindo engajamento contínuo e capacitação docente.

Palavras-chave: aprendizagem baseada em fenômenos; ensino de medicina; pacientes cegos; inclusão no atendimento médico; metodologias ativas de ensino.

RESUMEN

En el Aprendizaje Basado en Fenómenos, el punto de partida para el aprendizaje considera el contexto holístico en el que ocurren los fenómenos del mundo real. Este estudio tiene como objetivo relatar la experiencia del uso de esta metodología aplicada en una práctica con personas ciegas, realizada por estudiantes de la carrera de Medicina de la Universidad Regional de Blumenau, en el contexto de la asignatura Interacción Comunitaria (desde la

primera hasta la cuarta etapa). Se desarrollaron cuatro actividades de educación en salud: creación de carpetas, representación teatral, círculos de debate y actividades de sensibilización, como la locomoción con los ojos vendados, reproduciendo la experiencia. La vivencia también resultó en el establecimiento de asociaciones institucionales. El análisis temático de los conocimientos obtenidos a partir de estas experiencias generó cinco categorías: percepción espacial; responsabilidad social; alianzas institucionales; sentimientos y valores; y producción científica. Se concluye que el Aprendizaje Basado en Fenómenos, al promover un enfoque holístico y contextualizado del aprendizaje, incentiva a los estudiantes a involucrarse de manera más profunda con el fenómeno en estudio, además de ser una herramienta eficaz para el cambio de actitud y el fortalecimiento de competencias sociales. La aplicación de esta metodología se advierte desafiante, compleja, y requiere de un compromiso continuo y formación docente.

Palabras clave: aprendizaje basado en fenómenos; educación médica; pacientes ciegos; inclusión en la atención médica; metodologías activas de enseñanza.

INTRODUCTION

Phenomenon-Based Learning (PhenoBL), considers the authentic context in which the world's phenomena occur and uses students' natural curiosity to stimulate learning, enabling a real phenomenon, which is the starting point for learning, to be studied holistically (Silander, 2019). To achieve this, PhenoBL uses the principles of Piaget's constructivism, Vygotsky's sociocultural theory, Freire's emancipatory education, and Husserl's phenomenology (Nguyen, 2018).

This approach has been disseminated throughout the Finnish education system and has spread to other countries. Even though PhenoBL is not new in educational research, Finland has become a relevant case and has attracted media attention due to its excellent learning results and teacher engagement (Wakil *et al*., 2019; Kangas; Rasi, 2021).

In PhenoBL, phenomena are real-world events related to various contexts. Their study begins with questions, from which students are invited to understand and study the phenomenon (Silander, 2019). This allows phenomena to be viewed from the perspective of various courses and, consequently, from different points of view, enabling students to explore a phenomenon in its complexity (Drew, 2020). A meaningful learning environment stimulates curiosity, creativity, the development of critical thinking, and autonomy (Nguyen, 2018).

Its applicability is not restricted to any audience, subject or age group, and it is used, for example, in teaching agroecology, reading skills, teaching thermochemistry, representations of sexuality and digital literacy on social networks (Francis *et al*., 2013; Valanne *et al*., 2017; Pratiwi; Copriady; Anwar, 2021; Kangas; Rasi, 2021; Ang; Huan; Ng, 2022).

Grusche (2019) points out five criteria for applying PhenoBL: subjectivity, affectivity, mediation, exploration and the use of a restricted model, in which, at the moment of subjectivity, the phenomenon is experienced as an interaction between the perceiving subject and the perceived object; in affectivity, the teacher transforms the experience into something exciting, inviting students to become emotionally immersed in the phenomenon so that they can then express their feelings; in mediation, the teacher asks the students to carefully observe the phenomenon to fill in the gaps between the everyday world and the world of the phenomenon under study and, based on Socratic dialogue, the students' perceptions are scientifically grounded; while exploration is a moment of experimentation and practical demonstration, this being an inductive moment, in which reasoning allows students to observe various forms of the phenomenon.

Following these criteria, the pedagogical path derived from the study by Kangas and Rasi (2021) stands out. They used PhenoBL to teach Multiliteracy and created *Phenomenon-based Learning of Multiliteracy (PLM*), in portuguese: *Aprendizagem Baseada em Fenômenos de Multiletramento*. The pedagogical design of PLM considers eight stages for its implementation, namely: co-design; kick-off; planning; checkpoint; exploration-search and analysis of information; analysis and production of reports; lessons learned and teacher reflection.

At the co-design phase, the teacher finds other collaborating teachers or cross-cutting themes, requiring that they relate to the curriculum and the students' lives, including the definition of learning objectives, methods, and assessment criteria. In the kick-off stage, the students study the phenomenon and related themes, and in the planning stage, the students outline their work and choose the relevant sources of information on the phenomenon. At the checkpoint, teachers and students evaluate the analysis to ensure that the learning objectives, the understanding and exploration of the phenomenon from different courses, are achieved. In the exploration stage, students critically evaluate and analyze the information collected. After exploring and evaluating the content, students produce a report based on their analysis of how the phenomenon has been portrayed in the different sources of information. In the lessons learned stage, students present the final format of the report, reflect on the multiple dimensions of their learning processes, and evaluate it. The final stage, reflection, involves the teachers' pedagogical thinking to collect feedback from the students for the co-development of the method and improvement of the curriculum, enabling students and teachers to reflect on and evaluate the journey together (Kangas; Rasi, 2021).

Operationally, there are no rigid rules for the development of PhenoBL, only the guidelines for its pedagogical path that must involve the active method and its specificities listed in this brief presentation of the method, which places the student as the protagonist of their learning process, with the teacher as a mediating figure in the construction of knowledge.

PhenoBL can be used in different learning contexts. In the present study, it was used in the practical activities of the Community Interaction I to IV course in Medicine at the Regional University of Blumenau (FURB). A technical visit was made to an Association that serves blind and low-vision people, whose specific needs are often neglected by society and educational institutions, especially in the health sector.

In Brazil, 3.4% of the population over the age of two has some kind of visual impairment, totaling 6.9 million Brazilians (IBGE, 2021). Among the main causes of blindness in adults are cataracts, glaucoma, age-related macular degeneration, and diabetic retinopathy (Brasil, s.d.). Worldwide, diabetic retinopathy is responsible for 4.8% of the 37 million cases of blindness (CBO, 2019).

The large number of visually impaired people, therefore, requires teaching that sensitizes students to how to meet these needs. In this context, the visit to the Association enabled students to take part in an experience organized by the professor, together with the institution's social worker. The students got to know the physical structure and were able to talk to some of the members to strengthen medical practice and recognize the demands of this public.

As a result of the activity, the students prioritized the theme of blindness and its relationship with medical care, defined as the phenomenon under study. This choice was fundamental to the organization of the health education activity planned in the course since PhenoBL encourages the exploration of real and complex situations, enabling students to gain a deeper understanding of the challenges faced by people with visual impairments. Thus, this study aims to report on the experience of using PhenoBL, based on the experience of undergraduate medical students from the Regional University of Blumenau, held at an Association of the Blind.

The choice of blindness as the phenomenon under study not only aligns with PhenoBL guidelines, but also allows students to meaningfully explore the complexities and challenges faced by this population, promoting deeper and more contextualized learning. Through this approach, it is hoped that future doctors will develop a more empathetic and grounded understanding of the specific needs of visually impaired patients, thus contributing to a more inclusive and aware medical practice.

METHOD

This is an experience report with a qualitative approach, using PhenoBL as a methodological teaching strategy. It results from the activities of the Community Interaction I to IV course of the Medicine program at the Regional University of Blumenau (FURB), which involved 160 participants, including professors and students. The activity took place on the premises of the Association of the Blind and FURB in May and June 2023.

During the basic cycle, the syllabus of the Medicine program at the Regional University of Blumenau provides students with valuable experience of integration with the community through the Community Interaction course, offered in the first four semesters of the program. The course alternates theory and practice in Basic Health Units (BHUs), to enable students to connect with the local community and understand how the Unified Health System (*Sistema Único de Saúde*, SUS) works and the specific health and social issues of the regions covered by the BHU (FURB, 2022).

To accomplish this, the course has three professors and three BHUs for practical classes, during which the students are divided into three groups that stay for the entire semester, associating theoretical content with practice. Integration takes place gradually, taking into account the information obtained during the territorialization process, a tool used to map, observe, and track health demands (SES, 2019).

During the process, the students observe and analyze the difficulties and potential of the local population and the health team by carrying out territorialization activities and home visits, accompanied by Community Health Agents (CHA). In this situational diagnosis exercise, a health demand is prioritized so that a health education activity can be carried out (one of the products of the course), to promote health, which is considered a fundamental strategy for the work of primary care teams.

These activities help students to develop an analytical view of the SUS, and they also have the opportunity to apply the knowledge acquired in the four phases of the course, related to the theoretical framework of the SUS, public policies, public administration, basic epidemiology, biostatistics and health surveillance, to understand the health problems faced by the community (FURB, 2022). Thus, by combining theory with practice, this immersion in the real context strengthens academic training and prepares students to face the challenges of the medical profession in a more comprehensive and aware way.

One of these territorialization activities was a visit to the Association for the Blind and People with Low Vision, located in the area covered by one of the professors of the course. For this study, data was collected based on observations of the proposed activity, the planning, and the reports of the students and professors involved. From the professor's perspective, the emphasis was on planning, observations related to student reactions, and the products of the course. From the student perspective, the emphasis was on the insights generated and the learning generated by the proposed activity.

To organize and analyze the data, a theme analysis was selected, following Minayo's (2015) operative proposal, with its phases of pre-analysis, material exploration and treatment of the results obtained/interpretation.

The study did not need to be assessed by the Ethics Committee because it was a description of an academic experience resulting from an educational activity linked to the activity of an undergraduate course, as guided by Resolution 510/2016 of the National Health Council (Brasil, 2016).

EXPERIENCE DESCRIPTION

At the beginning of the first semester of 2023, during a practical lesson on territorialization in the surrounding area, teacher A, accompanied by the CHA and three students, visited the physical structure of the Association of the Blind, with a brief presentation by the social worker on the activities carried out at the institution. This visit gave rise to the idea of holding an experience so that the students could get to know the structure and services offered and connect with the members who attend the institution.

The choice of the phenomenon of blindness and its relationship with medical care stems from the absence of this theme in the program curriculum (there is only the course of Libras); few scientific publications related to the topic; the uncertainties reported by students on how to assertively conduct a medical consultation, in addition to the social relevance of bringing them closer to this public to know their demands and their feelings, and also to know the importance of intersectorality, considering the context of the SUS.

After agreeing with the service and defining the phenomenon, the students in Professor A's small groups, from the four phases, on four different dates (according to the schedule for each phase), carried out the experience at the Association, with each meeting lasting approximately 2h30.

Upon arrival, the students were divided into three sub-groups and blindfolded in the outside courtyard so that they could get to know the physical structure. Two blind associates and the service's social worker guided them (Figure 1).

Figure 1 – Students getting to know the physical structure, guided by associates.

Source: the authors' collection.

The students had access to ramps and stairs, handled musical instruments and craft materials, and visited the library, cafeteria, reiki room, and gym. In this context, the members taught them how to dodge obstacles, use a cane, go for a guided run, and receive guidance on how to help a blind person to walk on public roads. Afterwards, the students removed their blindfolds and went to explore the physical structure and get to know the space again. After a collective snack, in a conversation circle, the learning triggers were questions related to the reason for the loss of sight, the difficulties they encountered in medical consultations, with suggestions for improvements and their concept/perception of health.

RESULTS

Among the participating members, diabetic retinopathy was the main cause of vision loss. They commented on the loss of autonomy, coping with prejudice, as well as the arduous path to acceptance of limitations, and strategies used to optimize safe mobility on public roads and other daily activities.

As for medical care, they cited disrespect for autonomy, devaluation of complaints, ableism, and unequal and/or indifferent treatment. Suggestions for improvement include a spatial description of the office and self-description, prescribing liquid medication (as they can hear the drops when they put them in a container), maintaining an appropriate tone of voice (their disability is visual and not auditory), affection and smiling (they can feel emotions), prior communication of touch, the right to the absence of a companion and that instructions be given to the patient and not to their companion when present. They also stressed the importance of the professional making themselves available to help the blind person walk along the route, emphasizing the correct way to guide the blind person, which consists of asking if they need help and only then offering their arm (the blind person holds the companion's arm, not the other way around), or the blind person can rest their hand on the companion's shoulder (so that, when walking, they can follow the movement and notice changes in the route, such as steps, stairs, obstacles, etc.). Concerning the presence of a guide dog,[7] one of the precautions to be taken is not to distract the animal, as it is trained to guide its guardian.

Regarding the health-disease process, they reported feeling healthy and welcomed at the institution, happy to be able to help other people and with new meanings in their lives as a result of the limitations imposed by blindness. In a very emotional way, one of the members said that the biggest difficulty they face is people due to prejudice, misinformation, and the difficulty of respecting limitations, which caused a stir among the students.

All the students' reflections and insights were shared in the classroom afterwards, mediated by Professor A. Next, to meet some of the course's objectives (to carry out a health education activity), the students were instructed to search the scientific literature and

current legislation to find out the specificities of this public in terms of their rights and the relationship between blindness and medical care (the phenomenon under study).

At a later meeting, the findings were shared, and the health education strategy to be carried out with the other classmates who hadn't had the opportunity to take part in the experience was defined, and this moment of sharing with the class characterized the health education activity. Each class chose an educational design according to the complexity of the phase, their knowledge, motivations, and interests. The choice was therefore free and autonomous, with the construction being mediated by the professor.

The 1st phase built a folder containing information on how to conduct medical care in a way that respects the autonomy and safety of blind people. They had a quick experience with their classmates and professors B and C in the classroom, blindfolding them and making it possible to have an experience similar to the visit to the Association, and ended with a play containing the inappropriate points related to medical care and a post on a social network, on the class profile.

The 2nd phase also opted for a folder, containing a QR Code that led to the *Política de Atenção à Pessoa com Deficiência Visual* (Policy of Care for People with Visual Impairments), among other information; while the 3rd phase organized, in addition to the folder, an experience for colleagues in the external environment of the Regional University of Blumenau, where, blindfolded and guided, they practiced running, accessing staircases, using canes and dodging obstacles. The folders were made available via a messaging app so that the information could be shared with different audiences, since, in addition to information related to medical care, they contained useful information for the whole society.

The 4th phase students organized an experience for their classmates, followed by a round table discussion addressing the topics related to care for the blind and the specificities of the legislation, besides emphasizing the lack of the theme in the academic curriculum, the impact on their training and the consequent social relevance of the topic (Figure 2).

Figure 2 – Experience for students at FURB, with a guided tour of the environments they normally access.

Source: the authors' collection.

To situate PhenoBL in the reported activity, Chart 1 presents the didactic sequence for conducting the activity, following the proposal by Kangas and Rasi (2021).

Feedback occurred at every stage, as the students were constantly encouraged to reflect on the phenomenon under study. From these reflections, various initiatives emerged that had an impact on the students. Thus, the theme analysis resulting from these insights made it possible to create categories, namely: spatial perception; social responsibility; institutional partnerships; feelings and values, and scientific production.

Chart 1 – PhenoBL Operative Proposal carried out with FURB undergraduate medical students.

Stage	Activity carried out
1. Co-design	Choose a cross-cutting topic: medical care for blind people.
2. Kick-off	Experience at the Association of the Blind.
3. Planning	Research into scientific literature and legislation, brainstorming possible strategies for carrying out the health education activity, aimed at classmates.
4. *Checkpoint*	Sharing research findings and encouraging reflective debate.
5. Exploration	Construction of the corpus under study.
6. Analysis and production of reports	Definition of the design (health action strategy) resulting from the research and organization of the final seminar of the course.
7. Lessons learned	Presentation of the final seminar of the course based on the reflective portfolio built collectively.
8. Professor's reflection	Feedback from the students and professors involved.

Source: survey data.

In the “spatial perception” category, the activity awakened new perspectives among the students, who had previously involuntarily ignored the presence or absence of podotactile flooring, the audible warning and the time available for the blind to cross the crosswalk, and the strategies used by the blind to find their way when traveling by bus, for example, by counting the number of turns and steps. Regarding the podotactile floor, the members reported that they do not feel safe at FURB, because the absence of the floor in certain places makes it difficult to move around safely and autonomously.

Based on these reports, and with “social responsibility” in mind, one of the students, a member of Liga Interdisciplinar de Diversidade e Sexualidade da FURB (FURB's Interdisciplinary League on Diversity and Sexuality), put the theme on the League's discussion agenda and invited the social worker and participating members to organize a discussion on this demand. Guidance was also given so that, in conjunction and partnership with FURB's Inclusion Center, coping strategies could be defined. Other invitations to encourage social responsibility were made by members, such as participation in charity events (pasta, bingo, feijoada, tolls), along with donations of clothes for the thrift shop that helps maintain institutional costs. Another partnership arose from the invitation of a parathlete who took part in the meetings and invited Professor A to be his running guide. After a few training sessions and guidance from the athlete himself, the professor ran her first street race, over a 5km course, and took part in receiving the parathlete's 95th medal.

Other “institutional partnerships” were made possible, such as the opening of internship fields or extension activities for the Physical Education and Physiotherapy pprograms, which are currently unattended by the Association. Professor A intermediated contacts for possible partnerships. In addition, the students, concerned about the difficulty in understanding medical prescriptions, thought about the possibility of creating and/or offering apps that read prescriptions out loud (digital prescription and audio-transcription app). In this regard, Professor A made contact with a professor from FURB's Department of Systems and Computing, who pointed out that the Program Conclusion Work should be extensionist, produced in partnership with an organization or service. The students' suggestion was shared with the professor to check the possibility of meeting this demand.

As for “feelings and values”, it was possible to identify a strong component of the awakening to humanization in care, the need for welcome, compassion, bonds of trust, empathy, ethics, love and giving to others. Some students shared how the activity made them value their own lives, the focus for new perceptions, the recognition of how well they live with their small, unappreciated daily joys, such as their autonomy and physical health, and experiencing the joy and love of life shared by the associates.

In terms of “scientific production”, the activity made it possible to produce this article, with the participation of four of the students involved, providing their scientific initiation, with the co-authorship of another FURB professor. In addition, the work was submitted to the

university's Integrated Exhibition as a product of teaching activities, so that two members took part in the presentation.

All these topics were presented and discussed at the final seminar of the course and the feedback from the other students and professors who did not take part in the action at the Association was positive. The significant learning provided generated empathy, respect, compassion and closeness to a theme that had hitherto been little known and explored. The students reported that they had enjoyed the activity and felt motivated to learn about the specificities of this public. As for the students, who, based on the BHU rotation schedule, would be going to this territory in the following semester, they were anxious and excited about the power of these meetings.

DISCUSSION

The phenomenon under study presented in this report contemplates the purposes of PhenoBL, as indicated by Opetushallitus (2018) and Ferreira (2021), since the topic was approached in a contextualized manner, without the perspective of a single curricular component, stimulating the students' analytical capacity.

PhenoBL, characterized by subjectivity, affectivity, mediation and continuous exploration, guides students from exploratory to more theoretical experiments, from inductive to deductive reasoning (Grusche, 2019). This active method puts the student at the center of their teaching-learning process so that they understand what has been learned and develop skills that allow them to apply it to the real world, contributing to the training of professionals with critical-reflective skills, the development of research skills, in addition to clinical reasoning and empathy in the doctor-patient relationship (Ribeiro; Albuquerque; Resende, 2020). Thus, PhenoBL is in line with the Diretrizes Curriculares Nacionais (*National Curriculum Guidelines*, DCN), which recommend that future doctors be trained to understand the patient within their biopsychosocial context in real healthcare scenarios (Gomes; Rego, 2011; Oliveira, 2019).

However, the DCN for Medicine does not specify explicit guidelines for caring for people with disabilities (PWD) but instead deals broadly with aspects of verbal and non-verbal communication aimed at proper communication with patients, family members, and coworkers (Brasil, 2014). What can be seen in practice is that few universities implement this in their curricula (Costa; Koifman, 2016; Freitas Júnior *et al*., 2021).

In this sense, the proposed experience provided several perspectives. The first is the view of the professor, who, through his role as mediator of the process, provided real-life experience for the students; another aspect is the student-subjects of the process, with the possibility of observing the reality of a context that is little explored in undergraduate courses, representing a potential for innovation in health teaching (Colares; Oliveira, 2020;

Costa; Koifman, 2016), in addition to promoting positive attitudes and commitment to caring for people with disabilities. Last but not least are the patients targeted by the action, who were able to value their own condition, contributing to the strengthening of pedagogical praxis and the training of future doctors in their clinical practice, considering the large number of PWD.

Currently, it is estimated that 16% of the global population has a significant disability, and one of these is irreversible blindness due to diabetic retinopathy (Corrêa; Eagle Júnior, 2005; WHO, 2022), same characteristic of the main public served by the Association, who are people with diabetes that developed blindness over the course of their lives. This type of disability requires specific medical, psychological, social and primary care services (Sociedade Brasileira de Diabetes, 2019).

In this context, regarding the members' perception of their health-disease process, it was found that they did not have an ableist view of their condition, but one of optimism and a rediscovery of the meaning of living. This same analysis was verified in the study by Dourado and Costa (2006), who identified a change in the subject's identity, since, as a result of blindness, it was possible for some to positively reconfigure their identity.

Mello, Fernandes and Grossi (2013) state that the term ableism refers to discrimination as a reflection of religious beliefs and the treatment of people with disabilities, which is still present in the current context. Despite the social changes that have already mobilized great achievements in the lives of the blind, proper conduct during medical care is little worked on in medical education. This learning gap is detrimental to clinical practice and the doctor-patient relationship, which, according to Sucupira (2007), are essential for a personalized and humanized appointment, important for adherence to treatment, and essential for the patient to be seen not only for their organic complaint. From this perspective, academic training should include specific practices for caring for this public, avoiding neglect of the principles of humanization, inclusion, and promotion of quality of life.

To assess these competencies and skills to be developed in the teaching process with the PhenoBL methodology, Nrich Educational Consulting – NEC (2021) provides a Learning Rubric that takes into account the following indicators: holisticity, authenticity, contextuality, learning from problem-based research and the learning process, with the dimensions: limited evidence, emerging, developing, accelerated and advanced.

Applied to the experience reported in this article, all the indicators were classified in the “Advanced” dimension. As for holisticity, from a 360° perspective, there was curricular integration with the real-world phenomenon under study, as the method made it possible to learn and teach, with an emphasis on team teaching; as for authenticity, as the learning took place in a real environment and not in a traditional classroom, the materials and content produced by the students contributed to their cognitive development, and was relevant as it

encompassed significant problems in society; as for contextuality, the students learned in the natural context where the phenomenon takes place, making it possible to structure the phenomenon from different perspectives; as for learning from problem-based research, the collaborative construction and study of the phenomenon was carried out on the basis of problem configurations, which were made collaboratively and reflected on together by the students; as for learning, this was guided and facilitated by tasks that guided the planning of their own individual and collaborative learning processes (NEC, 2021).

As the students are fully involved, they understand the evaluation process according to the phenomenon studied. In this way, the rubrics provide an effective means of observing the skills required in this methodological tool (Irala; Ribeiro, 2023).

FINAL CONSIDERATIONS

The experience report presented here was quite challenging since PhenoBL is a complex methodological strategy that requires the engagement of professors for its application, with countless possibilities of outcome, depending on the involvement of the students. On the other hand, it proved to be an empowering tool for changing attitudes, since the students were motivated and engaged in trying to minimize the daily difficulties of the blind, in addition to reflecting on the profession, the program curriculum, the weaknesses in their training and the conduct to be taken when they are working, considering that these students can become future managers and formulators of public policies, broadening the discussion and the inclusion of this group in society.

Another aspect was that the application of the active method provided a teaching training space for the other professors involved since PhenoBL is a strategy that can be applied in different contexts, not just in the training of health professionals. Thus, a new objective was achieved, one that was not initially envisioned, which was to share the results for use in teaching training and to strengthen the practice of other educators.

It can, therefore, be concluded that the active PhenoBL approach helped to break down communication barriers and stimulated holistic learning because by choosing to view a topic from various points of view, students were encouraged to confront contradictory ways of seeing and reflecting on complex concepts. They also recognized that the challenges of the profession must be addressed by multidisciplinary teams working together to solve these problems, and they were invited to accept diversity as a natural occurrence in life.

The authors suggest that the rubrics can be developed together with the students, so that they are co-responsible for their assessment process from the start of the activities, thus expanding the possibilities for self-regulation expected of them.

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