

EXPERIENCE REPORT

METHODOLOGY OF PROBLEMATIZATION: TEACHING STRATEGY FOR LEARNING THE PROCEDURE OF INTRAVENOUS THERAPY

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ABSTRACT

This study aimed to report the experience of using the methodology of problematization for teaching the procedure of intravenous therapy to undergraduate nursing students. Four of the five steps proposed by the Maguerez Arc were followed: observation of reality and definition of a problem, key points, theorizing and hypotheses of solution. After completion of the steps, the students completed an assessment tool identifying the facilitating and inhibiting points. As facilitators, the following points were raised: effective participation of students in the search for new knowledge; decreased anxiety; experience of the hospital environment for the first time; interaction with the patient; more dynamic classes; ability to think of solutions; and as inhibiting points: lengthy process; lack of clarity in explaining some steps; little time for the preparation of activities; development of clinical teaching without having the knowledge necessary for provision of assistance. The methodology of problematization, as an active strategy of learning was effective for teaching the procedure of intravenous therapy. It is up to the teacher to identify the needs of students as well as to implement new methods of teaching, in which students actively participate in their learning.

Keywords: Higher Education. Methodology. Nursing. Education.

INTRODUCTION

Nursing is a practical profession that directs its actions to the provision of care to individuals. In order that the team be able to ensure the safety of patients, that care must be taught and practiced since undergraduate instances.

Currently, universities have been seeking new teaching methodologies in order to increase retention of knowledge. Studies show that methods of active learning are most effective when compared to traditional classes^(1,2). Active methodologies are teaching proposals that enable learning to learn and are focused on the student⁽³⁾. However, working with active learning methodologies brings many challenges for the teacher, for planning lessons in ways that

make sense for students. It is about working within a mediating perspective, taking the student to feel responsible for its own learning, encouraging and stimulating a meaningful learning, development of skills and attitudes, critical and reflective thinking, seeking to promote dialogue and committed participation as important elements of learning to learn⁽⁴⁻⁶⁾.

Thus, this contributes to the intellectual autonomy of students, giving them challenges to learn. It is one goal to be worked by the teachers at universities, and this is directly related to teaching and learning strategies selected by teachers to teach a given content⁽⁷⁾.

There are many possibilities for learning strategies that place the student as the center of the learning process and, therefore, these are called Active Learning Methodologies. Among

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the possibilities, we highlight discussion of articles in class, seminars, case studies, simulations, conceptual maps and problematization⁽⁵⁾. In this perspective, problematization has been a teaching strategy used in health sciences, because, starting from the reality observed, and under the guidance of the teacher, students begin the process of construction of knowledge that goes beyond the acquisition of information, raising the "development of human abilities to think, feel and act in an increasingly broad and deep way, committed to the issues of the environment where the student lives", actively participating in the learning process^(5,6).

Understood from a perspective that encourages the student to actively participate in its learning process and construction knowledge, the Methodology of Problematization with the Maguerez Arc developed in five steps that should ensure some characteristics for the achievement of desired results: observation of reality and definition of a problem (the students are the ones who will problematize the portion observed from reality), key points (built from reflections about the possible problems in the study), theorizing (phase in which students seek the information they need about the identified problem), hypotheses of solution (the whole study should provide elements for the elaboration of possible solutions) and application to reality (step that clearly goes beyond the intellectual exercise, as the decisions taken should be executed or passed ahead)^(5,8).

This methodology can be applied for teaching many nursing procedures, such as intravenous therapy, which is widely performed by nursing students. Due to its complexity, this is considered one of the procedures that generates more stress to the student and this feeling can have a negative influence on their learning⁽⁹⁾.

In that context, the use of Active Learning Methodologies "has been proposed as an alternative for the training of professionals in the health area"⁽¹⁰⁾ within a logic that allows the student to build their knowledge, developing skills with the help of the tools offered by the teacher, with the possibility of increasing retention of knowledge. The aim of this study was to report the experience of using the methodology of problematization for teaching

intravenous therapy to students of undergraduate nursing course.

METHODOLOGY

This is an experience report on the use of the methodology of problematization⁽⁵⁾ for teaching intravenous therapy for students of the second year of the undergraduate nursing course of a federal educational institution, in the course Fundamentals of Nursing Care II, developed in the first semester of 2014, comprising a total of 16 hours of activity. The problematization was developed in 4 moments by 10 teachers and with 10 groups of 8 students.

Four of the five steps proposed by the Maguerez Arc were followed: observation of reality and definition of a problem, key points, theorizing and hypotheses of solution. The fifth step, the application to reality, was not performed on the content of intravenous therapy in this course. The impossibility of realization of this stage is due to the narrow time available for the course. However, it was suggested that students performed this step in the forthcoming practical trainings.

First, teachers involved in administering the course discussed the steps to be followed in relation to the problematization and how each of these would be performed. For this, weekly meetings were held during six months in order to build the schedule, the texts on serotherapy to aid students, the script with the topics that should be observed on patients containing data such as support, container, extension and insertion of the device, as well as the assessment tool of the teaching methodology. It is important to note that the text on serotherapy prepared by the teaching staff would serve as a driver to help students to "focus and not run away from the theme"⁽⁸⁾ - as this was a new topic to students, with which they have never had contact before.

The text and the assessment tool were prepared by teachers who taught theoretical and practical classes for students of the course Fundamentals of Nursing Care II, of the Department of Clinical and Surgical Nursing, along with the help of a pedagogue with experience in Active Learning Methodologies.

In that step, one of the main difficulties encountered by teachers to identify space in the

schedule of this subject, since the content as a whole was extensive and the problematization implies, necessarily, experience of some steps for its implementation. One of the alternatives to minimize the difficulty of space in the schedule of the course was to separate a few hours of other classes to implement this methodology.

Once the steps to be executed were defined, as well as when and how they should be implemented, the experience of steps determined in the Maguerez Arc was initiated. The first was the observation of reality.

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OBSERVATION OF REALITY

Prior to observation, a short text on intravenous therapy was handed to students, with the description of the case of a female patient who needed this procedure. In this text, the steps the nurse followed for the preparation, installation and maintenance of intravenous therapy were described and illustrations of the solution and equipment were also inserted, because the students had not had previous contact with this content. This text was distributed in order to make students familiar with names of equipment, such as an infusion pump, device and extension.

After this phase, in order to observe the reality on intravenous therapy, the students received a script containing topics that should be observed in patients that were receiving any kind of solution. The instrument contained information about support, container, extension and device, connections, insertion of device/connections, patient and registration, corresponding to a total of 26 items. For this phase, the students were divided into five groups, under the supervision of a teacher.

IDENTIFICATION OF KEY POINTS

After the step of observation, on the same day, students were taken to the classroom to reflect on what they had observed and what were the key points they considered to be a problem related to any of the items found. After two days, the group of students met again with the teachers presenting the key points identified in order to check whether they could be considered as

problems for the practice of intravenous therapy. At this point, students reported the identified key points and these were discussed and reflected together with teachers, which could be considered as a problem on the topic discussed.

The main key points identified were related to the identification of serum and device, the lack of occlusion cover in connections and the impurities of dressings. Similar results were also found in another study where the lack of identification of peripheral venous access, solution and device for intravenous infusion was observed, as well as issues related to the validity of venous access and infusion device, factors that compromise the safety of the patient⁽¹¹⁾.

THEORIZATION

After the step of identification and discussion of key points, teachers gave two references on intravenous therapy to the students and these were encouraged to seek other items considered relevant for discussion of the identified problems. At this step of the Maguerez Arc, students are encouraged to seek in literature "the contribution that science can make to the clarification" and better understanding of the subject⁽¹²⁾. It is noteworthy that, during the undergraduate course, students have a class on methodology with activities directed to the search of scientific articles.

HYPOTHESES OF SOLUTION

Nine days after distribution of the texts, the teachers met again with the students to discuss the solutions to the problems, and noted the student's commitment with this search. With the active participation of all, problems and solutions were related to courses already completed by students, such as anatomy (description of the best point to punch and details of veins) and physiology (description of fluid and electrolyte balance and composition of serums). In the undergraduate Nursing course, students see basic disciplines, such as anatomy, physiology, biochemistry and biophysics in the first year, and, from the second semester of the first year onwards, they start to see content related to nursing, such as measurement of vital signs and interview.

It was noticed that the previous steps helped in the dynamics of the class, once that students

actively participated by rising questions, discussing and reflecting on the reason of the problems encountered and possible solutions for them, based on references found in literature. Following this discussion, teachers reinforced the importance of the fifth step of the Maguerez Arc, the application to reality, and oriented students to apply it in the next practical trainings. We believe that the fact of not having performed this step will not interfere with the development of the teaching-learning process of students, because there was a commitment to implement the resolution of the problems in the practical trainings of the second semester of 2014. It is noteworthy that the majority of teachers who participated in the development of the four steps of the methodology of problematization are also responsible for the trainings of the second semester, which will facilitate the resumption of this step with the students.

After completion of the steps, the students completed an assessment tool identifying the facilitating and inhibiting points. The main points raised as facilitators were effective and active participation of students who are encouraged to seek more knowledge, decreased anxiety, experience of the hospital environment for the first time, interaction with the patient, more dynamic classes and possibility to think of solutions.

In relation to the hindering aspects, it was observed that the students found the following points: time-consuming process, especially the lack of clarity in explaining some steps; little time for the preparation of activities; going to the field of hospital practice without having the necessary knowledge for provision of assistance.

The perception of students on the use of this teaching methodology makes us reflect on the positive and negative aspects related to the use of this teaching methodology. Notably, these points have a close relationship with issues involving the students' relationship with their teacher, indicating the need to establish the role of the teacher more clearly and the need for effective participation of students in the teaching-learning process.

Studies claim that the application of that active teaching methodology gives evidence of conceptual meanings, which improves the learning, broadens horizons, creates

interdisciplinary knowledge and arouses interest in related learned subjects⁽¹³⁻¹⁶⁾.

Thus, the teacher needs to constantly perform various functions simultaneously and for this to happen, he should be able to assimilate the constant changes and adaptations before the new reality of teaching that currently is established in our academic environment⁽¹⁴⁾.

In this sense, it is observed that one of the functions that the teacher should invest in this context is to narrow the gap between theory and practice, on what the student should be encouraged to "learn to learn". Therefore, we believe that the interpersonal relationship between teacher who is already an experienced professional and the student, who is still in training phase, should be established in a facilitative manner, to contribute positively to their learning process and professionalization.

These data coincide with a study that notes that the teacher should be one of the most important subjects and must be present in the relations with students, being able to help them in some situations through welcoming and listening, as well as by building interpersonal democratic and welcoming relationships in the classroom. This suggests that the teacher must not only have the domain of specific expertise, or even pedagogical knowledge, but also a humane attitude⁽¹⁷⁾.

Among the benefits of problematization as active learning methodology, the fact of bringing students closer to real situations stands out, also allowing the "integration between basic and clinical cycles, between disciplines, between the biopsychosocial dimensions"⁽⁹⁾ and by preparing the future professional for teamwork. This way, students must carefully look for a reality whose relations must be discovered and built by them, through discussion of the recorded data, and reflecting on possible causes and determinants of the problem and proposed hypotheses of solution⁽¹⁸⁾, that is to say, the student seeks knowledge.

When discussing the complicating points, it is observed that the use of active methodologies still represents a challenge to be overcome, both in regard to bureaucratic issues of development of the curriculum of the course, as well as in relation to the preparation of teachers and

students to experience the process. In this sense, we observed that this is necessary to the development of skills, whether managerial or technical, both by students and teachers.

The theme of competence in the field of vocational training in health is becoming more popular, especially after the approval of the National Curriculum Guidelines for Nursing⁽⁹⁾. This concept gains momentum as the change in the standard of professional requirements occur. This standard is not only limited to the acquisition of technical expertise, but is also aggregated to the professional profile in which personal qualities that make the professionals agents of the change in their work environments are valued.

Therefore, it is believed that both the professor and the students, in addition to the specific knowledge of a particular area, must be encouraged to develop other kinds of knowledge, as for example, communication, interpersonal relationships, involvement, participation, commitment and autonomy⁽¹⁵⁾.

The development of health professional is a challenge that implies the need for change in various aspects of the training process, especially with regard to current teaching models. Today, it is necessary to teach methods that establish mutual relations, not simply allowing access to information, but it is also necessary to learn and teach how to organize and articulate such information.

The educational content with very specific knowledge does not generate the skill required for professional performance⁽¹³⁾. It is believed

that the methodology of problematization emerges as an important strategy for effecting this change of paradigm in nursing education.

FINAL CONSIDERATIONS

Exit commonplaces - here understood as a space of crystallized structures and traditional teaching models, was the motivation of the group of teachers responsible for this course in undergraduate nursing, which involves breaking paradigms that have dominated the education in Brazil, and especially higher education, in which students are passive subjects and the knowledge coming from the teacher is taken as absolute truth. It is believed that distribution of a text prior to observing the reality is not necessary, because made students made little use of it.

According to the perception and the satisfaction of students, the Methodology of Problematization was considered an effective active learning strategy for teaching intravenous therapy. Thus, it is up to the teacher to identify the student's needs as well as to implement new methods of teaching, in which students may actively participate in their learning.

Therefore, some challenges must be overcome, among them, the curricular restructuring, so that all steps may be applied, as well as it is necessary to train teachers on the new active methodologies and raise awareness among students that they are also responsible for their learning.

METODOLOGIA DA PROBLEMATIZAÇÃO: ESTRATÉGIA DE ENSINO PARA A APRENDIZAGEM DO PROCEDIMENTO DE TERAPIA INTRAVENOSA

RESUMO

Este estudo objetiva relatar a experiência da utilização da metodologia da problematização no ensino do procedimento de terapia intravenosa para alunos de graduação em enfermagem. Foram seguidas quatro das cinco etapas propostas pelo Arco de Maguerez: observação da realidade e definição de um problema, pontos-chave, teorização e hipóteses de solução. Após a finalização das etapas, os alunos preencheram um instrumento de avaliação identificando pontos facilitadores e dificultadores. Foram levantados como pontos facilitadores: participação efetiva dos alunos na busca de novos conhecimentos, diminuição da ansiedade, vivência do ambiente hospitalar pela primeira vez, interação com o paciente, aulas mais dinâmicas, possibilidade de pensar em soluções; e pontos dificultadores: processo demorado, falta de clareza na explicação de algumas etapas, pouco tempo para o preparo das atividades, desenvolvimento do ensino clínico sem ter o conhecimento necessário para a prestação da assistência. A metodologia da problematização, como estratégia ativa de aprendizagem foi efetiva para o ensino do procedimento de terapia intravenosa. Cabe ao docente identificar as necessidades do aluno, bem como implementar novas metodologias de ensino, em que os alunos participem ativamente do seu aprendizado.

Palavras-chave: Educação superior. Metodologia. Enfermagem. Ensino.

METODOLOGÍA DE LA PROBLEMATIZACIÓN: ESTRATEGIA DE ENSEÑANZA PARA EL APRENDIZAJE DEL PROCEDIMIENTO DE TERAPIA INTRAVENOSA

RESUMEN

Este estudio tiene como objetivo describir la experiencia del uso de la metodología de la problematización en la enseñanza del procedimiento de terapia intravenosa para los estudiantes de pregrado de enfermería. Fueron seguidos cuatro de los cinco pasos propuestos por el Arco de Maguerez: observación de la realidad y la definición de un problema, puntos clave, teorización y las hipótesis de solución. Después de cumplir los pasos, los alumnos rellenaron un instrumento de evaluación identificando los puntos facilitadores y los dificultadores. Se plantearon como puntos facilitadores: la participación efectiva de los estudiantes en la búsqueda de nuevos conocimientos, la disminución de la ansiedad, la experiencia del ambiente hospitalario por primera vez, la interacción con el paciente, las clases más dinámicas, posibilidad de pensar en soluciones; y como puntos dificultadores: el largo proceso, la falta de claridad en la explicación de algunos pasos, el poco tiempo para la preparación de las actividades, el desarrollo de la formación clínica sin tener los conocimientos necesarios para la prestación de la atención. La metodología de la problematización, como estrategia activa de aprendizaje, fue eficaz para la enseñanza del procedimiento de terapia intravenosa. Cabe al docente identificar las necesidades del estudiante, así como implementar nuevas metodologías de enseñanza, en las que los estudiantes participen activamente en su aprendizaje.

Palabras clave: Educación superior. Metodología. Enfermería. Enseñanza.

REFERENCES

1. Barzansky B, Etzel SI. Medical Schools in the United States, 2014-2015. *JAMA*. 2015; 314(22):2426-35.
2. Farias PAM, Martin ALAR, Cristo CS. Aprendizagem Ativa na Educação em Saúde: Percurso Histórico e Aplicações. *Rev Bras Educ Med*. 2015; 39 (1):143-58
3. Silva VO, Santana PMMA. Conteúdos curriculares e o Sistema Único de Saúde (SUS): categorias analíticas, lacunas e desafios. *Interface (Botucatu)*. 2015; 19(52):121-132.
4. Backes VMS, Moyá JLM, Prado ML. Processo de construção do conhecimento pedagógico do docente universitário de enfermagem. *Rev Latino-Am Enfermagem* [online]. [citado 2014 abr 14] . 2011; 19(2):[08 telas]. Disponível em: http://www.scielo.br/scielo.php?pid=S0104-11692011000200026&script=sci_arttext&tlng=pt
5. Berbel, NA. As Metodologias Ativas e a Promoção da Autonomia de Estudantes. *Semin Ciênc Soc Hum*. [online]. [citado 2014 abr 14]. 2011; 32(1):[16 p.]. Disponível em: <http://www.uel.br/revistas/uel/index.php/seminasoc/article/view/10326>.
6. Cotta RMM et al. Construção de portfólios coletivos em currículos tradicionais: uma proposta inovadora de ensino-aprendizagem. *Ciência Saúde Colet*. 2012; 17(3):787-96
7. Fernandes JD, Teixeira GAS, Silva MG, Florêncio RMS, Silva RMO, Santa Rosa DO. Expansão da educação superior no Brasil: ampliação dos cursos de graduação em enfermagem. *Rev Latino-Am Enfermagem*. 2013; 21(3):670-78.
8. Berbel, NAN. Metodologia da problematização: respostas de lições extraídas da prática. *Semin Ciênc Soc Hum*. 2014; 35(2):61-76.
9. Braga PCV, Souza LAF, Evangelista RA, Pereira LV. Ocorrência e prejuízos da cefaleia em estudantes universitárias de enfermagem. *Rev Esc Enferm USP*. 2012; 46(1):138-44
10. Marin MJS; Lima EFG; Paviotti AB; Matsuyama DT; da Silva LKD; Gonzalez C; Druzian S; Ilias M. Aspectos das fortalezas e fragilidades no uso das Metodologias Ativas de Aprendizagem. *Rev Bras Educ Med*. 2010; 34 (1):13-20: 2010.
11. Murassaki ACY, Versa GLGS, Bellucci Júnior JÁ, Meireles VC, Vituri DW, Matsuda LM. Avaliação de cuidados na terapia intravenosa: desafio para a qualidade na enfermagem. *Esc Anna Nery*. 2013; 17(1):11-16
12. Bordenave JD, Pereira AM. Estratégias de ensino-aprendizagem. 31ª ed. Petrópolis(RJ): Vozes; 2011.
13. Furlan PG, Campos IO, Meneses KVP, Ribeiro HM, Rodrigues LMM. A formação profissional de terapeutas ocupacionais e o curso de graduação da Universidade de Brasília, Faculdade de Ceilândia. *Cad Ter Ocup UFSCar*. 2014; 22(1):109-19.
14. Mezzari A. O uso da Aprendizagem Baseada em Problemas (ABP) como reforço ao ensino presencial utilizando o ambiente de aprendizagem Moodle. *Rev Bras Educ Med*. 2011; 35(1):114-21.
15. Santiago RF, Luz MHBA. Práticas de Educação em Saúde para cuidadores de idosos: um olhar da enfermagem na perspectiva freireana. *Rev Min Enferm*; 2012; 16(1):136-42.
16. Kleba ME, Vendruscolo C, Fonseca AP, Metelski FK. Práticas de reorientação na formação em saúde: relato de experiência. *Cienc Cuid Saude*. 2012; 11(2):408-414
17. Casate JC, Corrêa AK. A humanização do cuidado na formação dos profissionais de saúde nos cursos de graduação. *Rev Esc Enferm USP*. 2012; 46(1):219-26.
18. Conselho Nacional de Educação (BR). Câmara de Educação Superior. Resolução CNE/CES N. 3, de 07 de novembro de 2001. Institui as Diretrizes Curriculares Nacionais do curso de graduação em enfermagem. *Diário Oficial da República Federativa da União*. Brasília (DF), 09 nov. 2001. Seção 1, p. 37.

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