



Active Methodologies: An experience in Speech, Language and Hearing Sciences

Metodologias Ativas: Uma experiência na Fonoaudiologia

Metodologías Activas: Una experiencia en Fonoaudiología

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Abstract

In current times, where there is a need for critical and autonomous health professionals and greater social integration of the University, changes in teaching methods have been discussed. Therefore, the Federal University of Sergipe implemented a campus with structured pedagogic projects based on Active Learning Methodologies. In this innovate scenario, the Speech, Language and Hearing Course is the first in the country to use this pedagogical method. The aim of this communication is to describe a proposal of training based on Active Methodologies. According to the Political Pedagogical Project of the University, the Speech, Language and Hearing Course consists of four cycles. Cycle I is interdisciplinary and common to all courses. From Cycle II, the modules work on specific matters of Speech Pathology and Audiology and follow the steps of the life cycle. Contents of Cycle II relate to childhood and adolescence, and

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Cycle III deals with the issues of adult and elder. Cycle IV includes clinical practice and the completion of a final course study. All programmatic content is worked using three axes: Tutorials Sessions, Skill Practice and Practices for Teaching in the Community. Problem Based learning is the methodology used in the tutorials in which real problems are used for identification of teaching objectives. In Skill Practice, techniques of professional practice are developed, encouraging dialogue between theory and practice. The Practice of Teaching in the Community, initiated in Cycle I, contributes to greater social integration of the University with the society and it uses the Arc of Maguerez as a learning strategy.

Keywords: Speech, Language and Hearing Sciences; Education, Higher; Problem-Based Learning.

Resumo

Atualmente, com a necessidade de profissionais da saúde autônomos e críticos, tem-se discutido a necessidade de mudanças nas formas de ensino. Nesta direção, a Universidade Federal de Sergipe implantou projetos pedagógicos estruturados a partir do uso de Metodologias Ativas de Ensino. Dentre os cursos que adotaram essa metodologia, a Fonoaudiologia ganha destaque por ser o único no país que utiliza esse método pedagógico de forma integral. O objetivo desta comunicação é descrever uma proposta de formação em Fonoaudiologia baseada em Metodologias Ativas. De acordo com o Projeto Político Pedagógico o curso é formado por quatro ciclos. O Ciclo I é interdisciplinar e comum a todos os cursos. A partir do Ciclo II, há módulos que trabalham assuntos específicos da Fonoaudiologia e seguem as etapas de ciclos de vida. O Ciclo II trabalha, especificamente com conteúdos da infância e adolescência e o Ciclo III, do adulto e idoso. No Ciclo IV ocorre a prática em estágios e a elaboração do Trabalho de Conclusão de Curso. Todo conteúdo programático é trabalhado por meio de três eixos centrais: Sessões Tutoriais, Práticas de Habilidades e Práticas de Ensino na Comunidade. Nas Sessões Tutoriais utiliza-se a Aprendizagem Baseada em Problemas, em que problemas são disparadores para identificação dos objetivos de ensino a serem alcançados. Na Prática de Habilidades são desenvolvidas técnicas, favorecendo o diálogo entre teoria e prática. As Práticas de Ensino na Comunidade, iniciadas no Ciclo I, contribuem para a inserção social da Universidade e utiliza como estratégia de aprendizagem o Arco de Maguerez.

Palavras-chave: Fonoaudiologia; Educação Superior; Aprendizagem Baseada em Problemas.

Resumen

En la actualidad, con la necesidad de profesionales de salud autônomos y críticos, se discute la necesidad de cambios en las formas de enseñanza. La Universidad Federal de Sergipe implementó proyectos pedagógicos estructurados con base en el uso de Metodologías Activas de Enseñanza. Entre los cursos que adoptaron esa metodología, la Fonoaudiología ganó prominencia por ser la única en el país que utiliza este método pedagógico de forma integral. El objetivo de esta comunicación es describir un propuesta de formación en Fonoaudiología basada en Metodologías Activas. De acuerdo con el Proyecto Político Pedagógico, el curso consta de cuatro ciclos. El Ciclo I es interdisciplinario y común a todos los cursos. Desde el Ciclo II, hay módulos que trabajan cuestiones específicas de la Fonoaudiología y siguen las etapas de ciclos de vida. El Ciclo II trabaja específicamente con contenidos de la infancia y la adolescencia y el Ciclo III, del adulto y adulto mayor. En el Ciclo IV se da la práctica clínica y la elaboración del Trabajo de Conclusión del Curso (monografía). Se trabaja todo el contenido programático a través de tres ejes centrales: Sesiones con un Tutor, Prácticas de Habilidades y Prácticas de Enseñanza en la Comunidad. En las Sesiones con un Tutor se utiliza el Aprendizaje Basado en Problemas, en el que los problemas reales son disparadores para la detección de los objetivos de enseñanza que se deben alcanzar. En la Práctica de Habilidades se desarrollan técnicas que favorecen el diálogo entre la teoría y la práctica. Las Prácticas de Enseñanza en la Comunidad, iniciadas en el Ciclo I, contribuyen para la inclusión social de la Universidad y utiliza como estrategia de aprendizaje el Arco del Maguerez.

Palabras clave: Fonoaudiología, lectura, comprensión, voz, radio, televisión



Universidade Federal de Sergipe - UFS, in 2011, initiates an innovative proposal: to establish a campus in the state with the pedagogical proposal in Problem Based Learning (PBL) and Active Learning Methodologies. This proposal is built aiming to promote closer ties with the current social situation, with emphasis on the Unified Health System (SUS), and to encourage its faculty and students to weave new knowledge networks. There are eight courses in healthcare area which are part of this campus: Nursing, Pharmacy, Physiotherapy, Speech Therapy, Medicine, Nutrition, Dentistry and Occupational Therapy. From this date, began a new cycle in the learning process of health professionals.

BPL in Brazil is considered a new technology to higher education students' learning processes. It has been applied in several courses, especially in the healthcare area¹. The speech therapy course is the first in the country to use this teaching method exclusively. The speech therapist curriculum, historically, goes through a process of reflection about the context of this professional training in accordance with current policy. Thus, it is believed that undergraduate courses should be strategic in order to contemplate the education of the speech therapist as well as the skills required in the current world², not restricted to clinical expertise.

The purpose of this section is to describe a Speech Therapy proposal based on Active Teaching Methodologies.

The course structure consists of four cycles, corresponding to one school year each. Cycles consist of modules of the curriculum. Cycle I, also known as the Common Cycle, includes the basic content needed to common field and is offered to students of all courses on campus as interdisciplinary study. From Cycle II, the called professional cycles begins with modules targeted to the student's professional option. In Speech Therapy Course they follow the steps of life cycles and thus the Cycle II works related to childhood and adolescence contents and Cycle III issues of adult and elder. Cycle IV is focused on conducting clinical and institutional placements and the development of the completion of course work. Within each cycle's content, it is worked through the tutorials and practical skills sessions.

The Tutorials Sessions (ST) are the theoretical base for all the other practices³ because it is presented to the students the real-world problems as

triggering tools for learning objectives detection to be achieved at that time. Here the problem is presented to the student and he goes through seven steps. It starts by reading the problem proposed in groups; then words or unfamiliar terms are identified; the explanatory hypothesis are made by the students; then we investigate the probable foundations of such hypotheses and as the fifth step, the students do learning objectives that are the anchors of triggering individual study. At this part, the session is interrupted in order to the student research for references and explanations to solve the problem. The search is individual and free, which means that students can research on subjects in different news sources, and they can also hear the opinion of experts. The next session, the seventh step, the student returns to the tutorial session after their individual study for re-discussing the problem related to the new acquired knowledge and, consequently, the solution of the proposed problem.

The problem is the nucleus of PBL. Its function is generating questions, issues or intellectual disruptions⁴ in order to the student being able to outline the route needed to know different possible solutions. The problems of this methodology should simulate real professional situations. They must necessarily be open, do not involve a single correct solution, but one or more possible solutions to enable the student the opportunity to engage in a process of speculation, definition, information collection, analysis and the problem redefinition. The less specific the problem, the greater the possibilities of developing skills and self-study⁵ solutions.

As the problem is considered the nucleus of the methodology, its formulation is the teachers' responsibility for more knowledge about a certain subject, being constructed in accordance with the Educational Project and the proposed curriculum. During the formulation of the problem, the semester being coursed must be considered, the references available to address this issue, the intersection with the other units and, finally, it is worth highlighting the importance of the issue to contemplate the academic needs for the education of a contextualized and power solve professional. The problem should be integrated with other academic activities and be integrating with respect to the worked content⁶. It should also cover various areas of expertise in order to promote interdisciplinarity.

The student at ABP thus must take an increasingly active role, leaving the attitude of mere



receiver of contents for active and effective pursuit of knowledge relevant to the problems and learning objectives. For the student, the key features that should be developed in this course are: a creative initiative, scientific curiosity, reflexive critical thinking⁷, the capacity for self-evaluation, cooperation teamwork and a sense of responsibility, ethics and sensitivity.

The Practical Skills (PH) for professional practice are developed during the course of this academic course, and the technical and scientific instrumentation is provided when called for annual curriculum subunits Skills and Attitudes on Health (Cycle I with 120 hours annually), speech therapy and Skills Laboratory Practices (Cycle II - with 90 hours of workload) and Audiological and Clinical Practice (Cycle III - with a total of 360 hours per year), offered in small groups (maximum of ten students per group).

There is still a need for improvements on teacher training, designing practical activities and more effective ways for the realization of the dialectical movement between practice and theory⁸. The purpose is to enable students to the construction of knowledge committed to social and ethical training.

The challenge is to bring together theory and practice to foster the construction of a specific knowledge. Students do not need to master the theory to grasp the practice, but handling instruments and materials used in speech therapy practice, discussing its use, compare tools, techniques and protocols applied in each other, correlate the clinical manifestations with procedures such as interviews; analyze the limits and possibilities of the studied procedures, among others, building a professional practice based on scientific evidence.

The above modules therefore aim to observe and analyze the theoretical and practical assumptions of speech in their specialties (orofacial motor skills, language, speech and hearing, dysphagia). Also, regarding epidemiology of the cycles of life and its biopsychosocial aspects might focus on the factors involving the most frequent patterns, even the most prevalent speech pathologies. They can be considered complement modules, which take the principle of idealization construction as an educational strategy, not as a demonstration on "how it should be", but rather on how knowledge

can be modified and affirmed by literature⁹. The technical and scientific instrumentation does not concern the technical ownership of a practice, but in practice this analytical exercise, promoting a very intricately and dialogical relationship between theory and practice. We could say that the skills are spaces of questions of professional practice, allowing a vision that seeks to overcome the relation of cause and effect, favoring an expanded cultural, biopsychosocial concepts and practices that support such aspects.

Thus, this pedagogical practice integrates and complements the information studied, discussed and experienced in different teaching strategies and learning how the theoretical concepts are studied and discussed in tutorial groups.

Integrators spaces, as permitted by PH also possible that the process of teaching and learning is not fragmented into disciplines.

It is worth noting that some courses that use ABP Skills work, but with the naming Workshop, claiming that their offer is a teaching and learning strategy that also helps in decreasing the student's uncertainty to enter the practical activities and stages of the course graduation, and provide autonomy and interest in the discussed content, fostering a critical and reflective training¹⁰.

Ratified by the above Marsden¹¹, when he said:

(...) The best way of teaching is when the teacher intends to achieve integration of the subject matter to be taught in school to everyday life. It seeks to build on the student the habit of looking for existing bridges and mutual influences between theory and practice, between the experienced and learned (2009, p. 105).

There are conferences in which experts show the current trends on major aspects of a particular topic covered are performed. In skills labs technical and scientific aspects are experienced, discussed and even created by the students and the Teaching Practices in Communities (PECs), the acquired knowledge is shared with the community, which will be described below.

The course also has in its curriculum from I to III Cycle, the Teaching Practice in the Community (PEC) module that works with another important



concept of training in health, within the active methods of teaching, which is “learning by doing” which discusses the theory-practice sequence in the production of knowledge, bringing the idea that the teaching-learning process must be linked to practice settings and must be present throughout the whole degree.

The PEC is when the student comes into direct contact with reality and it happens since the first term at the University in order to prepare the student in making the world aware and intentional action to transform it. The activities of PEC can be developed in different environments, including the different levels of care to the population and the environment in this course of action is: Health, Daycare center, Maternity Hospital and Regional Reference Center for Occupational Health (CEREST) in Lagarto-SE.

The PEC happens from the use of the Arch of Charles Maguerez composed of the following steps: 1. Reality observation; 2 Key Points; 3 Theorizing; Hypothesis 4- and 5- Solution Application to reality. In the first stage, there is active participation of students, through the watchful eyes to the reality in which the group is inserted, identifying with the professor’s help, the main aspects that need to be worked out. In the second step it identifies the key points of the problem in question and determining variables. In theory, the group begins to realize the problem and question it, seeking its understanding through theoretical and practical principles. In the fourth stage viable alternatives are built to solve the problems identified, critically and creatively, and finally, the fifth and last phase takes place the construction of new knowledge to transform reality through the planned hypotheses (1,2,3).

To illustrate the use of the bow, we will quote the action at the daycare centers, which occurred with the students of Cycle II. The daycare centers are assisted by the course of the City of Lagarto and children from six to seven years old attended there. The group of PEC was formed by a maximum of eight students and the professor in charge, who spent over half of a period per week within the institution. In the first stage of the arch, the students had contact with children and nursery workers, following the routine developed and observed a high number of children with deleterious oral habits, some language and speaking issues. With the professor’s mediation managed to reach the

second stage of the arch, identifying key points for understanding the determinant of the problem as: genetics, heredity, lack of staff and parents’ information on child development and lack of preventive actions in health centers linked to the institutions.

After identifying these points, it is time to discuss the issues, noting that many punctuated issues were also being addressed in ST and PH simultaneously. At the moment of the discussion, the professor took the opportunity to work the content, assuming a mediator position, directing students in the quest for answers to solve the problems in that field.

From the discussions, the students developed proposals for activities that addressed the issues raised, such as theater and games for children, treating a playful manner, the contents to be worked; lectures and brochures for teachers and daycare workers and parents should bring activities to the institution. Many difficulties were encountered in the course of the semester, most of them related to cultural and psychosocial factors, and not the teaching methodology itself. Such difficulties have brought the growth of the students that learned to think in order to understand the reality that is embedded with reflective attitudes, and not just based on theory addressed. This directly affects the kind of professional he will be in the future. The conception is contextualized according to the environment in which the child is included and not just focusing on speech amendment.

It stands out in this methodology, the process of evaluation as an essential and formative role, which involves various subjects and should serve for the development and construction of new knowledge^{12,13}.

Based on this premise, several methodological changes, guided by a discussion of the necessity for curriculum restructuring on a methodology that is based on their learning problems^{14,15,16} were implemented.

In this scenario, both the Tutorial and Practice Skills activities, we use evaluative along the teaching-learning process, based on daily activities that can be used as a guide in the learning process strategies, and contribute to the reorientation and methodological adjustments in teaching^{17,18} process. This review, called formative relies on students’ observation, the questions, the answers



to the questions and the development of oral and written summaries, with the use of reflective portfolios, which are centered, mostly in the form of conceptual and mind maps^{18,19,20}. As a part of this formative assessment yet, this formative evaluation is used for self-assessment and peer review, which provides the student to make a more conscious performance and his colleague shape analysis before the final object of study, allowing for reflection practical learning.

In addition to this assessment strategy, it makes use of summative assessment, which occurs at the end of a process, with clear targets for measuring results through a theoretical containing objective and essay questions, both problems with contextualized so “simulate “real situations, which address the content discussed during the course of the modules. Thus, tests that require logical reasoning are used, not just activities that aim to analyze the memory content, which differs from traditional tests, widespread as the primary summative evaluation strategy^{21,22}.

Thus, the formulation of this course sought to capture the essence of the development of each student in their training process, allowing the expression of subjectivity and the pursuit of knowledge built, seized and reframed by the student, in a growing spiral of engagement and technical-scientific^{12, 22, 23}.

Finally, the proposed speech therapy course, using active methods of teaching and learning-based on the search for problems and its solutions, training speech therapists, contemplates a historical gap in the professional profile. The attempt to expand its operations with the population is not restricted to the rehabilitation process, but it can include other forms of health care, to use strategies for health promotion and disease prevention. From the perspective of public health policies, builds up a professional with instrumentation necessary for it to reflect the real needs and demands of the current context.

References

1. Berbel NN. “Problematization” and Problem-Based Learning: different words or different ways?. *Interface (Botucatu)*. 1998;2(2):139-53.

2. Silva DGM, Sampaio TMM, Bianchini EMG. Percepções do fonoaudiólogo recém-formado quanto a sua formação, intenção profissional e atualização de conhecimentos. *Rev Soc Bras Fonoaudiol*. 2010;15(1):47-53.
3. Oliveira LM, Carlino FC, Oliveira MM, Santos IMF. PBL como metodologia de ensino de Fonoaudiologia: uma experiência pioneira. *Revista Escrita*. 2012;(15).
4. Mezzari A. O Uso da Aprendizagem Baseada em Problemas (ABP) como Reforço ao Ensino Presencial Utilizando o Ambiente de Aprendizagem Moodle. *R Bras Educ Med*. 2011;35(1):114-21.
5. Ribeiro LRC. Aprendizagem Baseada em Problemas – Uma experiência no ensino superior. São Carlos: EdUFSCar; 2010.
6. Saliba NA, Moimaz SAA, Chiaratto RA, Tiano AVP. A utilização da metodologia PBL em Odontologia: descortinando novas possibilidades ao processo ensino-aprendizagem. *Rev Odonto Ciênc*. 2008;23(4):392-6.
7. Faustino AM. Aplicação da aprendizagem baseada em problemas na graduação de Enfermagem: revisão da literatura. *G&S*. 2013;4(1):1848-59.
8. Franco AC, Boog MCF. Relação teoria-prática no ensino de educação nutricional. *Rev Nutr [periódico na internet]*. 2007 [acesso em 2014 abril 10]; 20(6): [12 p.]. Disponível em: <http://www.scielo.br/pdf/rn/v20n6/a07v20n6.pdf>.
9. Santos LAS et al. Projeto pedagógico do programa de graduação em nutrição da Escola de Nutrição da Universidade Federal da Bahia: uma proposta em construção. *Rev Nutr [periódicos na Internet]* 2005 [acesso em 2014 abril 10]; 18(1): [12 p.] Disponível em: <http://www.scielo.br/pdf/rn/v18n1/23512.pdf>. Acesso em: 10 abr. 2014.
10. Gesteira ECR, Franco ECD, Cabral ESM, Braga PP, Oliveira VJ. Oficinas como estratégia de ensino-aprendizagem: relato de experiência de docentes de enfermagem. *R. Enferm. Cent. O. Min.* 2012 [acesso em 2014 abril 10]; 2(1): [6p.] Disponível em: <http://www.seer.ufsj.edu.br/index.php/recom/article/viewFile/33/264>.
11. Marsden M. A indissociabilidade entre teoria e prática: experiências de ensino na formação de profissionais de saúde nos níveis superior e médio [dissertação na internet]. Rio de Janeiro: Escola Nacional de Saúde Pública Sergio Arouca; 2009 [acesso em 2014 abril 10]. Disponível em: <http://pesquisa.bvsalud.org/portal/resource/pt/lil-535857.../Carla/Downloads/1948-Marsdenmm.pdf>.
12. Frota MMA, Menezes LMB, Alencar CH, Jorge LS, Almeida MEL. O portfólio como estratégia facilitadora do processo de ensino-aprendizagem para a formação em odontologia. Adequação de metodologias de ensino utilizando o ambiente virtual de aprendizagem. *Revista da ABENO*. 2011;11(1):23-8.
13. Wiliam D. What is assessment for learning? *Studies in Education Evaluation*. 2011;37:3-14.
14. Dochy F. A new assessment era: different needs, new challenges. *Learning and Instruction*. 2001;2:11-20.
15. Villas Boas BMF. O portfólio no curso de Pedagogia: ampliando o diálogo entre professores e aluno. *Educ Soc*. 2005;26(90):291-306.
16. Mendoza VLF. Avaliação da aprendizagem nos cursos da área da saúde. *Rev Matogrossense de Enfermagem [serial on the internet]*. 2011 nov [acesso em 2014 abril 10]; [8 p.]. Disponível em: www.portaldeperiodicos.uned.edu.br/index.php/REMENFE.



17. Ruiz-Primo MA. Informal formative assessment: The role of instructional dialogues in assessing students' learning. *Studies in Educational Evaluation*. 2011; 37: 15–24.
18. Gulikers JTM, Biemans HJA, Wesselink R, Van der Wel M. Aligning formative and summative assessments: A collaborative action research challenging teacher conceptions. *Studies in Educational Evaluation*. 2013;39:116–24.
19. Rolfe I, Mcpherson J. Formative assessment: how am I doing? *The Lancet*. 1995; 345(8953):837-9.
20. Birembaum M. Evaluating the assessment: Sources of evidence for quality assurance. *Studies in Educational Evaluation* 33 (2007) 29–49.
21. Mathematical Sciences Education Board, Measuring What Counts. A Conceptual Guide for Mathematics Assessment, Washington: National Academy Press; 1993.
22. Bennett RE. A critical look at the meaning and basis of formative assessment Princeton: Educational Testing Service; 2002.
23. Freire P. *Pedagogia da autonomia: saberes necessários à prática educativa*. 33 th ed. São Paulo: Paz e Terra; 2006.