

METHODS OF HEALTH EDUCATION AND TRAINING: LITERATURE REVIEW

Metodologias de ensino e formação na área da saúde: revisão de literatura

Carolina de Castro Barbosa Mello⁽¹⁾, Renato Oliveira Alves⁽¹⁾, Stela Maris Aguiar Lemos⁽¹⁾

ABSTRACT

The higher Health Education and the training of health professionals has been object of several debates. Therefore, there are eminent discussions on the new learning methodologies to train health professionals, with abilities and skills beyond the technical-scientific area and also able to create, plan, implement and evaluate health policies and actions and, at the same time, solve problems. Active learning methods, such as Problem-Based Learning, are used with the purpose of meaningful knowledge acquisition and not merely mechanical, as the traditional teaching for many year perpetrates. The aim of this study is to analyze the national and international production in the last five years in issues as scientific Health Education, Problem-Based Learning and Meaningful Learning. Most studies evidence positive effects of new teaching strategies and support the need for changes in higher health education. Furthermore, most publications is within the period 2007 to 2009 and have Problem-Based Learning as main theme.

KEYWORDS: Problem-Based Learning; Health Education; Public Health; Learning; Speech, Language and Hearing Sciences

■ INTRODUCTION

For some years, several discussions concerning the higher education in Health and the need for qualification of professionals in accordance with the principles recommended by the Single Health System (SUS)¹ are being held in education institutions and in the government's health sphere. Therefore, the Ministry of Health has invested efforts to integrate public policies to health services, seeking to relate the practice acquired during the undergraduate course with the assistance given to the population. In addition, the professionals inserted in the area of Public Health should expand their knowledge beyond the technical-scientific field of the profession for all aspects of social relevance

and interest, either through the health area itself, or integrating other governmental sectors^{1,2}.

Upon this premise, the academic institutions of the health area need to search new strategies in order to adjust the professional education of the graduates to the health system in order to ensure the delivery of quality healthcare to the population. Therefore, the health professional shall be able to create, plan, implement and evaluate policies and actions aimed at the general welfare of a particular community, and have skills that can transform technical practice in the provision of care to the several aspects of health requirements of people².

These skills of the health professional should be developed during the undergraduate course, so that the graduates become able to expand their competencies beyond the technical-scientific domain and allow the transmission and incorporation of the learned content by the citizens, in a continuous situation of empowerment of the population³.

For acquisition of such skills and competencies, the active learning methodologies are pertinent to foster the teaching-learning process of students, in which the learners assume the role of settlers of

⁽¹⁾ Universidade Federal de Minas Gerais - UFMG, Belo Horizonte, MG, Brasil.

Source: Bolsa do Programa Especial da Graduação concedida pela Pró-Reitoria de Graduação Universidade Federal de Minas Gerais

Conflict of interest: non-existent

their knowledge and not only information receivers as the conventional education recommends⁴. Among these methodologies, the Problem-Based Learning – PBL is highlighted, which is configured as an applicable method from a situation-problem in which the students will use prior acquired knowledge to reflect on this situation and, at the same time, to add new information to those already existing. Thus, through this process in which the subjects are the developers of their knowledge, the student is able to acquire the skills mentioned above, so needed nowadays with regard to practice in health⁵.

However, only the application of new teaching strategies does not guarantee that the student will really learn the new content. Two conditions are necessary to make it happen: willingness to learn and an interesting and significant content. Thus, when a subject acquires, incorporates e, at the same time, transforms a new knowledge, and acquire skills and competencies that did not exist before, there is a Meaningful Learning process, in which the student stores the new content and also produces new related meanings and allows for the construction of desirable professional attitudes^{5,6}.

Thereby, the active methodology known as “Problem-Based Learning” is constituted as a mean for the acquirement of knowledge by the students in a significant way. Such processes are configured as strategies in higher education to improve the quality of the Health Education and indirectly improve healthcare for the population.

Based on the above considerations and with the intention to deepen the contents about the thoughts and changes on the health academic education, the present study aims to analyze the national and international scientific production about Health Education, Problem-Based Learning and Meaningful Learning of the last five years.

■ METHODS

It is a systematic literature review⁷ carried out in two stages: the search for articles, which started in January 2012 and extended until April of the same

year, and the selection of the publications according to the inclusion and exclusion criteria.

The first stage has begun with the selection of the descriptors defined according to the DeCS list, which were “Problem-Based Learning” and “Health Education”, as well as the same associate to the descriptor “Speech, Language and Hearing Sciences”. The keyword “Meaningful Learning” was also used, which was not included in the DeCS list, but it was decided to select it in order to increase the number of specific articles found. The bibliographical references of the publications were also analyzed in order to incorporate new studies that were not in the results of the survey.

Thus, it was necessary to define the databases used in the study, which were LILACS, MEDLINE and IBECs, accessed through the Bireme Portal.

Therefore, in the second stage, article type publications, with male and female individuals, in Portuguese or English, from 2007 to 2012 were included and also those which main subject corresponded to the descriptor or keyword used and that were complete.

Articles that did not belong to the Health area and that, after careful analysis, did not meet the requirements of this literature study were excluded.

According to above-mentioned inclusion criteria, 277 articles were found, of which 66 articles were related to “Problem-Based Learning”, 195 to “Health Education” and 16 to the keyword “Meaningful Learning”. When these descriptors were associated to “Speech, Language and Hearing Sciences”, only the association with the descriptor “Health Education” presented two articles.

After careful analysis of the publications, 245 articles were not used according to the exclusion criteria. Most of them did not belong to the Health area, many were repeated because they contained two of the descriptors and, in the case of “Health Education”, the majority of articles dealt with the education in health as qualification of individuals in health and not as an analysis of the Higher Education in health, meaning education of the professional, which is the purpose of the present study. Therefore, after all this process, 32 articles could be used and analyzed in the present study (Figure 1).

Total 1st. survey (Descriptors: “ Problem- Based Learning”, “Health Education” and Meaningful Learning in the databases LILACS, MEDLINE, IBECS and Cochrane Library: 66.564 articles

Criteria for exclusion:
 1) Type: article;
 2) Limits: human;
 3) Period: 2007 to 2012;
 4) Main Subject;
 5) Complete Text;
 6) Language: Portuguese or English

66.287 articles excluded

277 articles included

Problem-Based Learning: 66 articles	Health Education: 195 articles	Health Education and Speech Therapy: 2 articles	Meaningful Learning: 16 articles
--	-----------------------------------	--	-------------------------------------

Exclusion Criteria:
 1) Articles that did not belong to the Health area;
 2) Articles that did not meet the requirements of this literature study

51 articles excluded	188 articles excluded	0 articles excluded	8 articles excluded
----------------------	-----------------------	---------------------	---------------------

Total Problem-Based Learning: 15 articles	Total Health Education: 7 articles	Total Health Education and Speech Therapy: 2 articles	Total Meaningful Learning: 8 articles
--	---------------------------------------	--	--

Used in the study: total 32 articles

Figure 1 - Description of the stages of survey and selection of the studies.

■ LITERATURE REVIEW

Following is the literature review proposed in this study. It was decided to separate the descriptors used in themes for better understanding of the subject.

Problem-Based Learning

The Problem-Based Learning – PBL is configured as a teaching-learning method created in the Sixties, in the McMaster University, Canada, which purpose is to approach the undergraduate students to the professional practice. Moreover, this methodology has demonstrated to be an instruction approach able to promote the construction of knowledge by the subject itself and also, to determine the acquirement of critical and analytical skills and the targeted professional attitudes by the student^{8,9}. Upon this prerogative, the undergraduate courses of the Health area have inserted the PBL as strategy of education in the curricula, in order to prepare the future professional to create, implement, exert and evaluate actions in health, rather than the method of conventional education that basically consists in the mechanical transmission of informations⁹.

According to 86,6% of the studies used related to PBL, the Problem-Based Learning shows to be efficient with regard to its application in undergraduate institutions of the Health area. It is noteworthy that all studies did not only use different teaching strategies but also the conventional education. However, the traditional education shows to be important in order

that the student already acquires a prior knowledge about the content that will be addressed in a PBL based tutorial group for example, which contributes for the Meaningful Learning.

Among the fifteen publications found on Problem-Based Learning, six articles are of the literature review type⁸⁻¹³, of which, five report positive effects regarding the application of PBL in the curriculum of courses of the health area⁸⁻¹². Two articles highlight the importance of curricular reforms with regard to the organization of the period of academic education, pointing out the necessity of insertion of a problem education, that fosters the construction of knowledge from the experience of significant experiences^{8,9}. Only one of publications emphasized the effect of PBL applied during the education in health after the graduation and evidenced benefits in relation to the cognitive and social dimensions in the professional field¹⁰. One of these studies reported the practice of PBL in the psychiatry education, relating the literature data with the acquisition of communication abilities, as well as professional attitudes with regard to team work, group leadership and humanistic position before situations of work during the training¹¹. Still in this context, two studies carried out a comparison between education with traditional education and with PBL^{12,13}. In one of these, the researcher pointed positive effects with the application of the PBL¹² and in the other the author states that recent studies did not point differences in learning performance between PBL and conventional education¹³ (Figure 2).

STUDY	PURPOSE	METHODS	MAIN FINDINGS
Nunes et al, 2008 ⁸	To carry out literature review concerning the education in psychiatry in relation to the communication ability for the relationship with the patient.	<ul style="list-style-type: none"> Integrative literature review; N: 15 articles 	PBL is an effective educational strategy in relation to the learning of skills and attitudes required in clinical practice.
Gomes, Brino, Avó, Aquilante, 2009 ⁹	To analyze studies that compare the use of PBL in the medical education with the development of the conventional curriculum of the Medicine course.	<ul style="list-style-type: none"> Integrative literature review; N: 10 articles. 	The results of the performance of the courses with PBL are more positive than the courses with the conventional curriculum.
Koh, Khoo, Wong, 2008 ¹⁰	To carry out a systematic literature review on evidences of the PBL effects after graduation in Medicine.	<ul style="list-style-type: none"> Revision of systematic literature: N: 15 articles. 	The study showed that the PBL has a positive effect in the acquisition of the necessary competencies after graduation.
Vignochi, Benetti, Machado, Manfroi, 2009 ¹¹	To carry out literature review about PBL versus conventional methods of education.	<ul style="list-style-type: none"> Integrative literature review; N: 34 articles. 	The implantation of PBL is necessary to organize the academic education and to generate a significant knowledge for the student.
Mitre et al. 2008 ¹²	To carry out literature review based on the main methodological transformations in the education process of the health professionals.	<ul style="list-style-type: none"> Integrative literature review; N: 70 articles. 	The methodological changes in professional education in health are necessary in order to enable professionals for the practice.
Junior et al. 2008 ¹³	To carry out literature review about the PBL dynamics.	<ul style="list-style-type: none"> Integrative literature review; N: 21 articles. 	Most recent studies do not show differences in the performance of graduates from PBL curriculum when compared to conventional curriculum.

Legend: N= number of articles

Figure 2 - Summary of the studies related to Problem-Based Learning of the literature review type.

In relation to the experimental studies, nine publications were selected, all of which consist as cross-sectional studies¹⁴⁻²².

Approximately 55.5% of these studies reported the experience of the use of PBL with the realization of directed and supervised activities, and the effect of this education strategy on students was verified later. Three researches reported the use of PBL with opposed contents of the Health area¹⁴⁻¹⁶. Two publications^{15,16} reported the vision of the educators in view of the application of PBL. One of these used the application of questionnaires and discussion forums to investigate the opinion of the educators in relation to the methodology described here¹⁵. Another publication studied the perception of the educators in relation to PBL based tutorial groups, carried out with Medicine students¹⁶. Both studies evidenced that the opinions of the educators corroborate the use of PBL as education strategy.

Other mentioned researches had positive effects in relation the PBL method^{17,18-22}. Some universities have already implanted disciplines in the undergraduate course that use the PBL strategy. Thus,

three studies have described the experience of students with disciplines according to it, considering that any extra-curricular activity was not carried out¹⁸⁻²⁰. A researcher concluded that there was no difference between the perception of students who had lessons based on PBL and those that have received only the approach of the conventional education¹⁸. Two of publications evidenced that the students have acquired deep knowledge regarding the worked contents^{19,20}. One of the studies reported the application of PBL in the web, using problem situations in the area of Public Health²⁰. In another study²¹, the discipline "Cardiopulmonary Resuscitation" of a Nursing course was used to carry out tasks that involved the resolution of problems related to the approached content.

Only one research²² did not emphasize the PBL directly, evaluating its effects in relation to the acquired knowledge, but carried out a comparison between the stressors of students who had lessons based on the PBL and students who had conventional classes. Thus, a questionnaire with several options of stressful agents was applied

and the researchers have verified that there are no significant differences between the opinions of the two groups and that the most marked options were personal and financial problems, i. e., these factors can affect the academic performance and the well-being of both groups (Figure 3).

Meaningful Learning

The Meaningful Learning Theory proposed by David Ausubel in 1980 states that subjects can meaningfully learn a content when they can incorporate and aggregate new information to those already present in their cognitive structure, named "subsumption items" by the author. Thus, for the meaningful learning, two conditions are required: willingness to learn and that the exposed content has a meaning for the learner. In this process in which the concepts are more comprehensive, the interaction between the new knowledge and the prior acquired knowledge makes that both modify themselves and become more consistent for the individual²³.

All studies²³⁻²⁹ related to the Meaningful Learning corroborate the use of active learning methodologies in order that the student acquires the necessary knowledge for the practical clinic. Thus, this theory is configured as an important pedagogical current to be addressed in courses of the area of health, so that the students can consolidate their knowledge and use it in their professional life in the future.

Four publications²³⁻²⁶ of the integrative literature review type were selected, being that all reaffirm the necessity of learning as a continuous process, in the academic environment as in the professional environment. One of these studies²³ highlights the need for greater participation of the students in their teaching-learning process, abolishing the mechanical transmission of knowledge by the teacher. Another study²⁴ presents a discussion

on narratives of the practical clinic carried out by Nursing students, in which it was evidenced that these reports have been efficient in the construction of knowledge by the students. Still in this context, a publication²⁵ stresses for the concept of empowerment, that means to have personal skills capable to acquire and to transmit knowledge, emphasizing the relation that must be established between health and education during the undergraduate course. Upon this prerogative of the Meaningful Learning, a study²⁶ approaches the importance of the Permanent Education, not only during the period of academic formation, but also during the entire professional life, so as to guarantee the veracity of the transmitted information, facilitating the learning of the health team, client, family and community (Figure 4).

In general, the experimental studies²⁷⁻³⁰ showed positive results in relation to the acquisition of knowledge by students according to the activities carried out. In one of these publications²⁷ the researcher observed the actuation of two physicians of a Family Health Team and verified that this actuation is far away from what is recommended by the Single Health System, indicating that the knowledge acquisition process by these professionals was not and is not being suitable. Two studies^{28,29} report the experience of students in the professional practice and so, it was evidenced that the students acquired knowledge in the involved area of each study and also skills to deal with unexpected situations of the practical clinic. There was a publication³⁰ where the teachers have created an instrument based on active learning methodology later applied to the students. The result of this experience was considered positive, since it concluded that the research subjects have acquired the Meaningful Learning about the approached contents (Figure 5).

STUDY	PURPOSE	METHODS	MAIN FINDINGS
Lewis et al. 2009 ¹⁴	To compare the differences between Medicine course-related stressors between students submitted to PBL and students not submitted to PBL	<ul style="list-style-type: none"> Quantitative, qualitative, descriptive and cross-sectional; N: 280 Medicine students. 	The greater stressors were personal and financial problems, which can affect the academic performance for both groups.
Tavakol, Denick, 2009 ¹⁵	To investigate the opinion of the educators of the undergraduate course of Medicine about the PBL methodology.	<ul style="list-style-type: none"> Qualitative, Descriptive and cross-sectional; N: 39 Medicine teachers. 	Many participants have valued the importance of the PBL methodology in the practice and theory of Medicine.
Paranhos, Mendes, 2010 ¹⁶	To characterize the perception of students in relation to the teaching-learning process in disciplines in the Nursing course.	<ul style="list-style-type: none"> Qualitative, descriptive, exploratory and cross-sectional; N: 62 Nursing students. 	The students have valued the disciplines so that they become integrators of the theory and of the practice.
Lira, Lopes, 2011 ¹⁷	To evaluate the application of the education strategy on nursing diagnostics based on PBL.	<ul style="list-style-type: none"> Qualitative, experimental and cross-sectional; N: 35 Nursing students. 	There was effectiveness of the education strategy on Nursing diagnostics based on the PBL, through pre and post tests.
Schlett et al. 2010 ¹³	To evaluate the differences comparing graduates that have received the PBL methodology in the curriculum and those that have received conventional education.	<ul style="list-style-type: none"> Quantitative, qualitative, descriptive and cross-sectional; N: 4821 physicians. 	The perception on the necessary competencies for the work in health are similar between professionals of the PBL and the conventional curriculum.
Machado, Bollela, Vieira, 2008 ¹⁹	To compare the different perspectives of the appraisers of the tutorial groups based on the PBL with students of the first year of Medicine from 2004 to 2007.	<ul style="list-style-type: none"> Quantitative, qualitative, descriptive and cross-sectional; N: 349 Medicine students. 	That was no significant difference between the self-evaluation of the students and the evaluation between their pairs. However, the evaluation of the appraisers demonstrated significant differences.
Spinello, Fichbach, 2008 ²⁰	To investigate the effectiveness of the use of a community in the web based on the PBL that simulates situations in Public Health.	<ul style="list-style-type: none"> Qualitative, Descriptive and cross-sectional; N: 21 students of courses of the health area. 	The use of web-based simulations promoted effectiveness in the learning regarding the worked issues.
Gomes et al, 2009 ²¹	To evaluate the results of the course of Medicine of the Famema, taking as reference the professional education anchored in the PBL.	<ul style="list-style-type: none"> Qualitative, Descriptive and cross-sectional; N: 10 physicians. 	The graduates demonstrate to be able to acquire the necessary skills for the medical practice.
Sardo, Sasso, 2009 ²²	To develop an educative practice of PBL in Cardiopulmonary Resuscitation/Basic Life Support with the students of the undergraduate Nursing course.	<ul style="list-style-type: none"> Qualitative, descriptive, exploratory and cross-sectional; N: 21 Nursing students. 	The PBL methodology of education demonstrated to be efficient in the knowledge acquisition process and solidified what the conventional education has already carried out.

Legend: N= number of subjects of the research

Figure 3 - Summary of the experimental studies related to Problem-Based Learning.

STUDY	PURPOSE	METHODS	MAIN FINDINGS
Gomes, et al, 2008 ²³	To carry out literature review of the main aspects of the Meaningful Learning Theory and its application in medical education.	<ul style="list-style-type: none"> · Integrative literature review; · N: 36 articles. 	The Meaningful Learning is an important pedagogic line in the process of education in Medicine.
Albuquerque, Moreira, Martins, 2010 ²⁴	To carry out literature review on the possibilities of use of narratives of the practice as strategy of health education.	<ul style="list-style-type: none"> · Integrative literature review; · N: 18 articles. 	The narratives of practice in health show to be an important strategy for the construction of knowledge.
Chiesa et al, 2007 ²⁵	To carry out literature review concerning the education process of the professionals in health under the perspective of the Health Promotion.	<ul style="list-style-type: none"> · Integrative literature review; · N: 10 articles. 	The education process of health professionals points out the need for experience in situations related to health and education during the undergraduate courses.
Oliveira et al, 2011 ²⁶	To carry out literature review on the continuous education process in health in relation to the nursing area.	<ul style="list-style-type: none"> · Integrative literature review; · N: 50 articles. 	The nurse must search the continuous education in order to promote the learning in health of its team, family, community and patient.

Legend: N= number of articles

Figure 4 - Summary of the studies related to Meaningful Learning of the literature review type.

STUDY	PURPOSE	METHODS	MAIN FINDINGS
Melo, Demarzo, Huber, 2008 ²⁷	To describe the performance of Medicine students in relation to the Meaningful Learning in the area of medical genetics.	<ul style="list-style-type: none"> · Descriptive, qualitative and cross-sectional; · N: 60 Medicine students. 	The students could acquire consistent knowledge in medical genetics by means of the performance in the ambulatory medical practice.
Lavado et al, 2007 ²⁸	To evaluate the work process of the physician in the Family Health Program.	<ul style="list-style-type: none"> · Qualitative, exploratory and cross-sectional; · N: 2 physicians of ESF. teams 	The actuation of the physicians is far away from the team work and healthcare humanization process, so recommended by the Single Health System.
Martin et al, 2007 ²⁹	To demonstrate the possibilities of teaching-learning by means of confrontation with the situations of the practice.	<ul style="list-style-type: none"> · Qualitative, exploratory and cross-sectional; · N: 3 Nursing students. 	The students have acquired new skills to deal with practical situations, promoting Meaningful Learning of the contents.
Tronchin et al, 2008 ³⁰	To report the experience of the construction of an instrument of evaluation of the learner.	<ul style="list-style-type: none"> · Qualitative, exploratory and cross-sectional; · N: 4 Nursing teachers. 	It was possible to construct an instrument of evaluation of students based in active learning methodologies.

Legend: N= number of subjects of the research

Figure 5 - Summary of the experimental studies related to Meaningful Learning.

Health Education

The Higher Education in Health has been discussed for two decades, mainly after the institutionalization of the Brazilian Educational Laws and Guidelines (LDB) in 1996 and of the regulation of National Curriculum Guidelines (DCN) in 2001³¹, in which the need for transformations regarding critical thoughts of the health professionals has been discussed in order to meet the current conformities of the Single Health System. Thus, the purpose is to educate competent professionals and citizens aware of their rights and duties and able to transform a given situation according to the reality in which it is inserted. Moreover, the institutions of Higher Education in Health must seek to implement teaching strategies and educators able to foster the aforementioned processes³².

All the literature review type publications³¹⁻³³ related to Health Education state the importance of the occurrence of transformations in the scope

of Higher Education health courses in general, however, each publication focuses a different aspect. One of these studies³¹ corroborates the implementation of pro-change policies in which there is the enrollment of the society, students, teachers and users of the Single Health System, being the support for new leaderships and a “qualifying stimulation” necessary for that. Another study³² discusses alternatives for the practical education in health and that the employed strategies foster the critical and reflective thought of the students. With that, the author reports that it is necessary to replace the conventional model by other models able to promote these processes. A publication³³ still focuses the interdisciplinary as an important factor for the health education, even if it is still worked in the academic environment. The author states that changes in the education have been already carried out, however, some factors, as the interdisciplinary of a health team is far away from ideal (Figure 6).

STUDY	PURPOSE	METHODS	MAIN FINDINGS
Gonzalez, Almeida, 2010 ³¹	To carry out literature review on the initiatives of changes of the higher education in health implanted in Brazil, through historical analysis.	<ul style="list-style-type: none"> · Integrative literature review; · N: 50 articles. 	New public policies of pro-changes must be collectively constructed in the education, focusing the involved subjects, educators, students and users of the Single Health System.
Ratto, Silva, 2011 ³²	To carry out literature review on health education with the interdisciplinarity between professionals, as well as its attitudes as a group.	<ul style="list-style-type: none"> · Integrative literature review; · N: 19 articles. 	The changes in the education in health have really occurred. It is not possible yet to know if these changes have been incorporated, if the teams already work as a group.
Rodrigues et al, 2008 ³³	To carry out literature review showing alternatives to the practical education in the undergraduate Nursing courses.	<ul style="list-style-type: none"> · Integrative literature review; · N: 19 articles. 	It is necessary to substitute the conventional model for models that demand critical thoughts in the professional practice and Nursing education.

Legend: N= number of articles

Figure 6 - Summary of the literature review type studies related to Health Education.

Four experimental studies³⁴⁻³⁷, which have also approached Health Education in different ways, were selected. The first publication mentioned³⁴ deals with the question of education and learning background in health and how this process influences the academic and professional education, and later the delivery of healthcare for the population. The author also reports that qualification requirements of educators is missing, what can compromise the quality of the education offered to the students and indirectly affect the rendering of services to the population.

Another study³⁵ presented the construction process and application of an instrument that evaluates the beliefs of the students before situations lived in the academic environment. This

instrument showed to be important to adjust teaching strategies in the undergraduate course, presenting adjusted psychometric qualities. A publication³⁶ also presents a research concerning the interest of the education of Human Rights in health to the students, in the higher education institutions, being that the great part of the subjects considered the approach of these aspects in the undergraduate course very important. Beyond these aspects, a national study³⁷ approaches the opinion of students about the education process for the professional life according to the rules of the Single Health System (SUS). According to the results, although there are other teaching strategies implanted, the students have considered fragile the ways by which these practices are carried out (Figure 7).

STUDY	PURPOSE	METHODS	MAIN FINDINGS
Almeida, Soares, 2011 ³⁴	To analyze how health education is being processed in undergraduate courses in Nursing.	<ul style="list-style-type: none"> Qualitative, descriptive, exploratory and cross-sectional; N: 13 Nursing teachers. 	The qualification requirements of the teaching staff contribute for an insufficient education regarding critical thoughts and Nursing practice.
Polydoro, Guerreiro-Casanova, 2010 ³⁵	To present the construction process and to search evidences of validity of the self-effectiveness scale in the higher education.	<ul style="list-style-type: none"> Quantitative, qualitative, descriptive and cross-sectional; N: 535 students of the courses of human, exact and health areas. 	It is shown that the data were adjusted for application of the instrument to measure the self-effectiveness in the higher education.
Cotter et al, 2009 ³⁶	To determine the nature, interests and extension of the health rights, according to human rights in the Schools of Medicine and Public Health	<ul style="list-style-type: none"> Quantitative, qualitative, descriptive and cross-sectional; N: 108 students of Medicine and Public Health. 	Most of the students of the Medicine and Public Health Schools believe that the education of human rights is important for the health practice.
Costa, Miranda 2010 ³⁷	To identify the opinion of the graduates about its education process for the Single Health System.	<ul style="list-style-type: none"> Qualitative, exploratory, descriptive and cross-sectional; N: 30 Nursing students. 	The implementation of education strategies that corroborate for critical actuation in the practice showed to be weak.

Legend: N= number of subjects of the research

Figure 7 - Synthesis of the experimental studies related to Health Education.

As well as in all the courses of the area of the health, the Speech Therapy has been inserted in the field of the health promotion, in the Primary Care. For that, the education of the speech therapist shall not be different from what has been described here, i. e., should include critical thoughts of the professional with regard to planning, implementation and evaluation of public health policies aimed not only at the biological health of a subject, but a physical and mental wellness³⁸.

Thus, the findings in literature corroborate, again, the implantation of alternative teaching strategies to conventional education, in order that this necessary critical thoughts in the professional performance are reached during the undergraduate courses.

A publication of the literature review type³⁸ that relates Health Education and Speech, Language and Hearing Sciences was found. This study³⁸ states the need for implantation of disciplines related to Psychology in the courses, pointing out the importance of the interdisciplinary vision in the undergraduate course.

Only one experimental study³⁹ was found in which students that have participated of the study report that they have considered the home visits of speech therapists important tools for the promotion of health of the families and, at the same time, excellent strategies for the learning (Figure 8).

STUDY	PURPOSE	METHODS	MAIN FINDINGS
Santos, Rodrigues, 2007 ³⁸	To carry out literature review about the need for inclusion of one discipline of psychology in the undergraduate course of Speech, Language and Hearing Sciences.	<ul style="list-style-type: none"> · Integrative literature review; · N: 12 articles. 	The speech therapist needs to have a multidisciplinary actuation in the practice, being necessary to include education of Psychology aspects in the curriculum.
Goulart, Henckel, Klering, Martini, 2010 ³⁹	Report the experience in speech therapy for health promotion based on home visits.	<ul style="list-style-type: none"> · Qualitative, descriptive and cross-sectional; · N: 30 home visits of speech therapists. 	The performance of speech therapists in home visits constitutes an important tool for the practice of health promotion, contributing for the meaningful learning of the students.

Legend: N= number of articles of the research

Figure 8 - Synthesis of the studies related to Health Education and Speech, Language and Hearing Sciences.

The Higher Education in Health has suffered positive changes throughout the time, aiming at the implementation of teaching strategies that place the student in the center of the learning, i. e., that the students become suppliers and detainers of their own teaching-learning process. Such changes are justified by the new conformity of the health situation not only in Brazil, but also internationally, what demands a general, reflexive and critical vision of the professional inserted in the area. This prerogative does not only insert itself in the point of view of the implementation of public policies or health actions but also encloses the vision of the health

professional for possible problems and plausible solutions for one specific situation.

■ CONCLUSION

Most of the studies were published between 2007 and 2009 and its main theme was the Problem-Based Learning. In addition, most of the publications showed positive effects with the implementation of new teaching strategies.

Therefore, most of the publications foster the need for changes in the higher education in Health in order to promote the Meaningful Learning of the graduates in the professional career.

RESUMO

A Educação em Saúde no Ensino Superior tem sido objeto de muitos debates acerca da formação profissional em saúde. Portanto, há a discussão eminente acerca da utilização de novas metodologias de ensino a fim de formar profissionais em saúde, com habilidades e competências além do domínio técnico-científico, que sejam capazes de criar, planejar, implementar e avaliar políticas e ações em saúde para a população e, ao mesmo tempo, solucionar problemas. Para isso, metodologias ativas de aprendizagem, como a Aprendizagem Baseada em Problemas, são utilizadas com o propósito de que estudantes da área da saúde adquiram o conhecimento de forma significativa e não meramente mecânica, como o ensino tradicional há muitos anos perpetra. Esse estudo tem como objetivo analisar a produção científica nacional e internacional acerca dos temas Educação em Saúde, Aprendizagem Baseada em Problemas e Aprendizagem Significativa dos últimos cinco anos. A maior parte dos estudos evidencia efeitos positivos com a aplicação de novas estratégias de ensino e ainda, corrobora a necessidade de mudanças na educação em saúde no ensino superior. Além disso, a maioria das publicações se encontram no período de 2007 a 2009 e tem como eixo temático a Aprendizagem Baseada em Problemas.

DESCRITORES: Aprendizagem Baseada em Problemas; Educação em Saúde; Saúde Pública; Aprendizagem; Fonoaudiologia

■ REFERENCES

1. Xavier As, Lilian K. Educação Superior no Brasil e a formação dos profissionais de Saúde com ênfase no envelhecimento. *Interface comun. saúde educ.* 2011;39(15):973-84.
2. Ceccim RB, Feuerwerker LCM. O Quadrilátero da Formação para a Área da Saúde: Ensino, Gestão, Atenção e Controle Social. *Physis.* 2004;14(1):41-65.
3. Saube R, Cutolo LRA, Wendhausen ALP, Benito GAV. Competência dos Profissionais da Saúde para o Trabalho Interdisciplinar. *Interface comun. saúde educ.* 2005;9(18):521-36.
4. Kuenzer AZ. A Educação Profissional nos anos 2000: A Dimensão Subordinada das Políticas de Inclusão. *Cad. CEDES.* 2006;27(96):877-910.
5. Figueira EJG, Cazzo E, Tuma P, Filho CRS, Conterno LO. Apreensão de tópicos em ética médica no ensino-aprendizagem de pequenos grupos. Comparando a aprendizagem baseada em problemas com o modelo tradicional. *Rev. Assoc. Med. Bras.* 2004;50(2):133-41.
6. Berbel NAN. A Problematização e a Aprendizagem Baseada em Problemas: Diferentes termos ou Diferentes Caminhos? *Interface comun. saúde educ.* 1998;2(2):139-54.
7. Pelizzari A, Kriegl ML, Baron MP, Finck NTL, Dorocinski SI. Teoria da Aprendizagem Significativa segundo Ausubel. *PEC.* 2002;2(1):37-42.
8. Braga R, Melo M. Como fazer uma revisão baseada na evidência. *Port Clin Geral.* 2009;25:660-6.
9. Nunes SOV, Vargas HO, Liboni M, Neto DM, Vargas LHM, Turini B. O ensino de psiquiatria, habilidades de comunicação e atitudes no currículo integrado do curso de Medicina da Universidade Estadual de Londrina. *Rev. bras. educ. méd.* 2008;32(2):210-6.
10. Gomes R, Brino RF, Aquilante AG, Avó LRS. Aprendizagem baseada em problemas na formação médica e o currículo tradicional de medicina: uma revisão bibliográfica. *Rev. bras. educ. méd.* 2009;33(3):444-51.
11. Koh GCH, Khoo, HE, Wong ML, Koh D. The effects of problem-based learning during medical school on physician competency: a systematic review. *CMAJ.* 2008;17(1):34-41.
12. Vignochi C, Benetti CS, Machado CLB, Manfroi WC. Considerações sobre Aprendizagem Baseada em Problemas na Educação em Saúde. *Rev. HCPA & Fac. Med. Univ. Fed. Rio Gd. do Sul.* 2009;29(1):45-50.
13. Mitre SM, Siqueira-Batista R, Girardi-de-Mendonça JM, Morais-Pinto NM, Meirelles CAB, Pinto-Porto C et al. Metodologias Ativas de Ensino-Aprendizagem na formação profissional em Saúde: debates atuais. *Ciênc. saúde coletiva.* 2008;13(2):2133-44.
14. Júnior ACCT, Ibiapina CC Lopes SCF, Rodrigues ACP, Soares SMS. Aprendizagem baseada em problemas: uma nova referência para a construção do currículo médico. *Rev. méd. Minas Gerais.* 2008;18(2):123-31.
15. Lewis AD, Menezes DAB, McDermott HE, Hibbert LJ, Brennan SL, Ross EE et al. A comparison of

- problema: uma avaliação qualitativa. *Interface comun. saúde educ.* 2009;28(13):71-83.
23. Sardo PMG, Sasso GTMD. Aprendizagem baseada em problemas em ressuscitação cardiopulmonar: suporte básico de vida. *Rev. Esc. Enferm. USP.* 2007;42(4):784-92.
24. Gomes AP, Dias-Coelho UC, Cavalheiro PO, Gonçalves CAN, Rôças G, Siqueira-Batista R. A educação médica entre mapas e âncoras: a aprendizagem significativa de David Ausubel, em busca da arca perdida. *Rev. bras. educ. méd.* 2008;32(1):105-11.
25. Albuquerque VS, Moreira COF, Tanji S, Martins AV. A narrativa da prática como uma estratégia de construção do conhecimento na formação superior em saúde. *Educar em Revista.* 2010;1(2):191-206.
26. Chiesa AM, Nascimento DDG, Bracciali AD, Oliveira MAC, Ciampone MHT. A formação de profissionais da saúde: Aprendizagem Significativa à luz da promoção de saúde. *Cogitare enferm.* 2007;12(2):236-40.
27. Oliveira FMCSN, Ferreira EC, Rufino NA, Santos MSS. educação permanente e qualidade da assistência à saúde: Aprendizagem Significativa no trabalho da enfermagem. *Aquichan.* 2011;11(1):48-65.
28. Melo DG, Demarz, MMP, Huber J. ambulatório de genética médica na APAE: experiência no ensino médico de graduação. *Rev. bras. educ. méd.* 2008;32(3):396-402.
29. Lavado MM, Benito GAV, Bitdinger C, Soares CLS, Silva TAV. Avaliação do processo de trabalho médico no Programa Saúde da Família: uma ferramenta para educação permanente. *ACM arq. catarin. med.* 2007;36(2):75-81.
30. Marin MJS, Caputo VG, Ishida E, Giovanetti JN, Pinto RT. Aprendendo com a Prática: Experiência de Estudantes de Fanema. *Rev. bras. educ. méd.* 2007;31(1):90-6.
31. Tronchin DMR, Gonçalves VLM, Leite MMJ, Melleiro MM. Instrument of student assessment based on nursing managerial competences. *Acta paul. enferm.* 2008;21(2):356-60.
32. González AD, Almeida MJ. Movimentos de Mudança na formação em Saúde: da medicina comunitária às diretrizes curriculares. *Physis.* 2010;20(2):551-70.
33. Ratto CG, Silva SCM. Educar para a “grande saúde” – vida e (trans) formação. *Interface comun. saúde educ.* 2011;15(36):177-85.
34. Rodrigues J, Zagonel IPS, Mantovani MF. Alternativas para a prática docente no ensino superior de enfermagem. *Esc. Anna Nery Rev. Enferm.* 2007;11(2):313-7.
35. Almeida AH, Soares CB. Educação em saúde: Análise do ensino na graduação em enfermagem. *Rev. latinoam. enferm.* 2011;19(3):1-8.
36. Polydoro SAJ, Guerreiro-casanova DC. Escala de auto-eficácia na formação superior: construção e estudo de validação. *Aval. psicol.* 2010;9(2):267-78.
37. Cotter LE, Chevrier J, El-Nachef WN, Radhakrishna R, Rahangdale L, Wiser SD et al. Health and human rights education in U.S. schools of medicine and public health: current status and future challenges. *Plosone.* 2009;4(3):1-6.
38. Costa RKS, Miranda FAN. Opinião do graduando de enfermagem sobre a formação do enfermeiro para o sus: uma análise da FAEN/UERN. *Esc. Anna Nery Rev. Enferm.* 2010;14(1):39-47.
39. Santos PL, Rodrigues MLV. O ensino de psicologia na graduação de fonoaudiologia. *Medicina.* 2007;40(1):78-81.
40. Goulart BNG, Henckel C, Klering CE, Martini M. Fonoaudiologia e promoção de saúde: relato de experiência baseado em visitas domiciliares. *Rev. CEFAC.* 2010;12(5):842-9.

Received on: July 17, 2012

Accepted on: February 11, 2013

Mailing address:

Carolina de Castro Barbosa Mello
 Rua Califórnia, 264, apto. 502 - Sion
 Belo Horizonte - Minas Gerais - Brasil
 CEP: 30315-500
 E-mail: carol.castro.bh@hotmail.com