

DOI: 10.17951/n.2016.1.55

ANNALES
UNIVERSITATIS MARIAE CURIE-SKŁODOWSKA
LUBLIN – POLONIA

VOL. I

SECTIO N

2016

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Competency-based Education in Communication Sciences
and Disorders: The Proposal of a New Curriculum

Nauczanie oparte o wymagania kompetencyjne
w naukach o komunikacji i jej zaburzeniach:
propozycja nowego programu studiów

Summary: The aim of this paper is to describe the most relevant aspects of a competency-based curriculum in communication sciences and disorders education. Competences to be developed are associated to cognitive, technical, relational, affective, integrative and contextual dimensions. The new curriculum has duration of five years with 49% of the work-load assigned to supervised practice. This way, expected learning outcomes by the end of the first year involve the students knowing what they learned about the basic sciences of the area. By the end of the second year, the students should know what they learned about specific areas of the field. By the end of the third year, the students should know how to use what they learned. At the end of the fourth year, the students should be able to demonstrate how to use what they learned. Finally, at the end of the program, the students should perform professional activities with expertise, ethics and critical thinking. To sum up, the new curriculum proposed provides the student with general and specific knowledge about communication sciences and disorders and different scenarios of supervised practice. Its main objective is to develop the adequate competencies to professional practice.

Keywords: education; competence-based curricula; clinical education; practice experiences; speech-language pathology; audiology

INTRODUCTION

Competency-based curricula are a global and innovative trend in Speech-Language Pathology and Audiology (SLP&A) training. The main idea is that this system promotes the balance of knowledge acquisition and the development of attitudes and skills that are essential to the professional practice¹.

In fact, professional competency may be understood as the set of skills and attitudes necessary to the most efficient professional performance. It involves the insightful use of specific and updated knowledge considering affective, cultural and social variables. In health professions, competency means the capacity to take care of another human being according to each professional's specific knowledge and skills, thus preventing and/or solving health problems related to professional practice.

SLP&A competencies are multidimensional. These dimensions involve cognitive, technical, relational, affective, integrative and contextual aspects. The cognitive dimension includes the acquisition and application of the best and most updated scientific knowledge. The technical dimension refers to the development of skills to perform procedures involved in the professional practice. The relational dimension implicates the establishment and maintenance of professional relationship with patients, families and colleagues, namely communication and social skills. The affective dimension comprises the skills and attitudes that demonstrate understanding, tolerance, and sensitivity to the diversity, dedication, respect, moral and ethical values. The integrative dimension comprises the appropriate use of clinical rationale strategies, including biological, clinical, humanistic, and social aspects in clinical judgment and decision-making to the diagnostic and intervention planning and execution. At last, the contextual dimension involves the contextualized practice, the consideration of local resources and environment, cultural variables and understanding of the health system².

SLP&A education varies in different countries according to their demands and history. In Brazil the bachelor degree is the minimum level required for independent practice and the certification is always dual: all the professionals are SLPs and As, namely *fonoaudiólogos*. After graduation, the professional may opt for one area of specialization among Audiology, Language, Oral Motor Sciences, Worker's Audiology, Voice, Public Health, Dysphagia, Gerontology, Education,

¹ W.S. Santos, *The Competency-Based Medical Curriculum*, "Revisata Brasileirade Educação Médica" 2011, No. 35 (1), pp. 86–92.

² *Ibidem*.

Neurofunctional SLP, Neuropsychology and Oral Motricity³. Moreover, master and doctoral degrees are also alternatives for continued education and are the minimum requirement for teaching in Fonoaudiologia programs.

The Federal Council of Fonoaudiologia (CFFa) attributed to a work-group the task of describing the work of the SLP&A⁴. This group should take into account the complexity of the professional education, the technological advances, the improvement in the public health services, and the need for abilities to work in interdisciplinary teams. This group listed the competencies that the *fonoaudiólogo* should master:

1. Perform speech-language and audiology assessment and diagnosis.
2. Provide therapy in the areas of SLP&A.
3. Inform and mentor patients, outpatients, families and care-takers.
4. Follow-up the patient's development.
5. Improve human communication.

Perform public health activities in the area of Phonoaudiology.

6. Teach.
7. Research.
8. Manage human, financial and material resources.

Besides those basic competencies, the professional should also have personal competencies as being able to communicate efficiently both by verbal and non-verbal means (writing, sign language...), being objective, creative, observant and able to make decisions and self-assessment.

According to the CFFa, the main work environments for the *fonoaudiólogo* in Brazil are: public basic health centers and outpatient-clinics, hospitals and maternities, private clinics, home-care assistance, day-care centers for infants,

³ CFFa (Conselho Federal De Fonoaudiologia), *Dispõe sobre as especialidades reconhecidas pelo Conselho Federal de Fonoaudiologia, e dá outras providências*, RESOLUÇÃO CFFa nº 320, de 17 de fevereiro de 2006, www.fonoaudiologia.org.br/legislacaoPDF/Res%20320-06%20-%20Especialidades.pdf, accessed: 12 II 2016; CFFa (Conselho Federal De Fonoaudiologia), *Dispõe sobre o reconhecimento das especialidades em Fonoaudiologia Escolar/Eduacional e Disfagia pelo Conselho Federal de Fonoaudiologia, e dá outras providências*, RESOLUÇÃO CFFa nº 382, de 20 de março de 2010, www.fonoaudiologia.org.br/legislacaoPDF/Res.%20382-2010.pdf, accessed: 12 II 2016; CFFa (Conselho Federal De Fonoaudiologia), *Dispõe sobre o reconhecimento, pelo Conselho Federal de Fonoaudiologia, da Fonoaudiologia Neurofuncional, Fonoaudiologia do Trabalho, Gerontologia e Neuropsicologia como áreas de especialidade da Fonoaudiologia e dá outras providências*, RESOLUÇÃO CFFa nº 453, de 26 de setembro de 2014, www.fonoaudiologia.org.br/cffa/wp-content/uploads/2013/07/res-453-2014-novas-especialidades.pdf, accessed: 12 II 2016.

⁴ CFFa (Conselho Federal De Fonoaudiologia), *Áreas De Competência do Fonoaudiólogo No Brasil*, 2^a Edição – Março, Brasília 2007, www.fonoaudiologia.org.br/legislacaoPDF/Res%20348-07%20Doc%20Official%202.pdf, accessed: 12 II 2016.

children and elders, regular and special schools, NGOs, colleges and universities, industries and entertainment industry (radio, television, theater, singers...).

The main control-agency of education in Brazil is the federal government through the Ministry of Education and Culture⁵, which determines the minimum work-load hours of each program and the amount of supervised practice that must be completed within the undergraduate program. The last guidelines⁶ suggest the implementation of a competency based curricula and describe the general and specific competencies that must be mastered by the student at the end of the program.

The general competencies are: managing patients at all levels of health care, from prevention to remediation and rehabilitation; actively participate and/or coordinate decision-making processes providing clients and families with the adequate information to empower them in the prevention, identification and intervention procedures; and use communication and leadership skills to the best interest of the clients, colleagues, the science and the profession.

Specific competencies are synthesized as:

1. Comprehending and critically analyzing theoretical systems regarding different aspects of human hearing and communication.
2. Understanding the constitution of the human being body, social and psychological relations, cognition, language, and learning processes.
3. Preventing, assessing, diagnosing and treating human communication and hearing disorders.
4. Acquiring and developing skills in order to understand and produce scientific work.

To develop these competencies in the undergraduate program the curriculum should include basic courses, approaching the main theoretical areas and principles, and train the students with a variety of cases of different types of disorders.

A COMPETENCY-BASED CURRICULUM IN BRAZIL

The undergraduate curriculum for SLP, at the Medical School – University of São Paulo – includes theoretical courses and laboratories for practice training

⁵ Brasil, Ministério da Educação, Conselho Nacional de Educação, 2009, http://portal.mec.gov.br/cne/arquivos/pdf/2009/pcp002_09.pdf, accessed:11 I 2014.

⁶ Brasil, Ministério da Educação e Cultura, Conselho Nacional de Educação, Câmara de Educação Superior, Resolução CNE/CE/5, 19 fev. 2002, *Diretrizes Curriculares Nacionais do Curso de Graduação em Fonoaudiologia*, www.fonoaudiologia.org.br/cffa/wp-content/uploads/2013/07/dc.pdf, accessed: 8 I 2014.

with a workload of 2,700 hours and additional 2,550 hours of supervised practice. This training should be completed in 10 semesters (Table 1).

Table 1. Distribution of the program workload

Duration	10 semesters (5 years)
Theoretical courses and practical laboratories	2,700 hours
Supervised training	2,550 hours
Total amount of hours	5,250 hours

Source: own work.

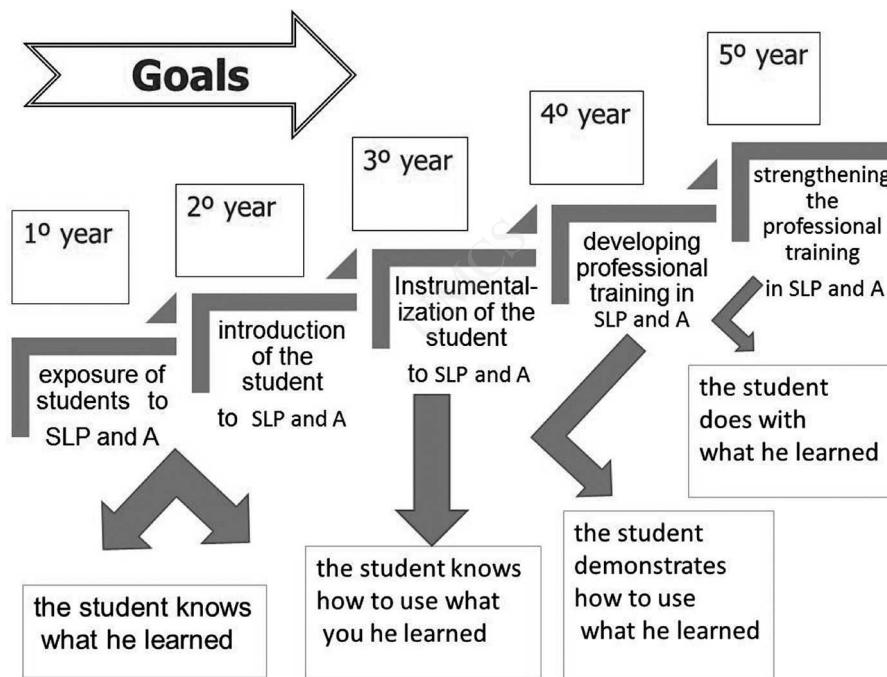


Figure 1. Goals and competencies of the new curriculum

Source: own work.

This is a new curriculum proposal that is just being implemented and part of the proposal is the identification of ample goals for each year of the undergraduate program. In the first year, the students are exposed to SLP&A through theoretical courses in basic areas and observation of practice scenarios; by the end of this period, the students should *know what they learned about the basic sciences*. During the second year of the program, the students are introduced to the theoretical aspects of specific areas of SLP&A and observation of different practice scenarios; by the end of the second year, the students *should know what*

they learned about specific areas of the field. In the third year of the program, the students receive basic instrumental training through more specific observations and extensive participation in normal environments; by the end of the third year, the students should *know how to use what they learned*. The fourth year is dedicated to the development of professional training through extensive supervised practice; by the end of the fourth year, the students should be able to *demonstrate how to use what they learned*. Finally, the fifth year is dedicated to strengthen the professional training through intensive supervised practice in selected areas; by the end of the program, the students should *perform professional activities with expertise, ethics and critical thinking* (Figure 1).

During the whole program, the courses are organized in nine clusters that constitute the core subjects, which enable the dynamic articulation of the contents of each course with increasing complexity in theoretical, scientific, technical and clinical aspects. This process aims to provide the professional training of an SLP&A that is active in their academic training, humanized, ethical and always attentive to the reality and the current status of the health system. The clusters of courses are organized as:

1. Basic – courses that provide students with theoretical and practical knowledge about the human constitution.
2. Fundamental – courses that involve knowledge about the structure and functioning of the human body and language.
3. Specific – courses that provide students with the understanding of how communication takes place in humans, including aspects of speech, language and acoustic principles of hearing.
4. Research Methodology – courses that involve all subjects regarding scientific methodology applied to various areas of speech, language and hearing sciences.
5. Communication Diagnosis – courses that discuss the various alternatives and methods for diagnosis in speech, language and hearing.
6. Primary Health Care – courses that focus on the inclusion of *fonoaudiólogos* the health system with emphasis in public health actions.
7. Communication Disorders Nosology – courses that discuss the different clinical aspects of communication and hearing disorders.
8. Communication Disorders Intervention – courses that gradually qualify the students to assess, plan, schedule, perform, direct, guide, discuss and reflect on the process of rehabilitation.
9. Specific Subjects – courses that provide students with opportunities to take benefit from the various alternatives offered by the university to build a profile of individualized training.

The main changes that are being implemented in this new curriculum involve the increase in the program's duration to 10 semesters with supervised practice distributed along the whole program. The first three years cover theoretical courses and practice in laboratories that include simulate specific analyses.

According to the Brazilian regulations, the undergraduate programs should provide at least 20% of the total workload as internships. In this new program, the supervised practice, conducted within the university and its associated services, corresponds to 49% of the total workload. Moreover, the practical experience starts from the first semester, although the largest part is concentrated in the last four semesters (Table 2).

Table 2. Supervised training workload

Semester	Hours
1st	135
2nd	90
3rd	45
5th and 6th	300
7th and 8th	990
9th and 10th	990
Total hours of training	2,550

Source: own work.

The supervised practice is distributed in several services and areas. The area of Development, Diagnosis, Intervention and Prevention in Human Communication Disorders include services related to disorders of voice, fluency, speech, oral motor functions, child and adult language, reading and writing. The area of Development, Diagnosis and Prevention in Human Hearing include practice scenarios related to hearing loss, balance, auditory processing and amplification, including selection, evaluation and training for hearing aids and auditory evoked potentials.

The practice scenarios include ambulatories and hospital services that provide diagnostic and intervention for speech sound disorders, specific language impairment, autism spectrum disorders, genetic syndromes, dyslexia, stuttering, strokes, oral myofunctional disorders, voice disorders, swallowing disorders and dysphagia. The Audiology practice alternatives include supervised practice in cochlear implants indication and follow-up therapy, indication and adaptation of hearing aids, hearing tests (pure tone audiometry, extended high frequencies, acoustic immittance, ABR, otoacoustic emissions, P300, middle latency response, auditory processing, acoustic reflectance and auditory steady-state response).

The student graduated after these five years shall have the skills and attitudes necessary for the practice of SLP&A, demonstrating the acquired knowledge.

FINAL COMMENTS

Implementing a competency-based curriculum is a challenge in all the health areas and especially in communication sciences and disorders. Since Brazilian bylaws and guidelines defines that professional competencies needed to the professional practice should be acquired during undergraduate programs, the supervised practice must be conducted during this period. In this new curriculum, although the amount of supervised practice corresponds to 49% of the total workload, the number of hours dedicated to theoretical studies (2,700 hours) continues to be more than the amount proposed by the regulations (2,400 hours). This way, this new curriculum should lead to the development of the professional competencies determined by the federal agencies and professional council.

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Santos W.S., *The Competency-Based Medical Curriculum*, “Revisata Brasileirade Educação Médica” 2011, No. 35 (1), pp. 86–92.

Streszczenie: Celem niniejszego artykułu jest przedstawienie najbardziej istotnych aspektów nauczania opartego o wymogi kompetencyjne w naukach o ludzkiej komunikacji i edukacji specjalnej. Opracowano wymogi kompetencyjne w związku z uwarunkowaniami poznawczymi, technicznymi, relacyjnymi, emocjonalnymi i integracyjnymi pracy logopedy. Nowy program przewiduje okres 5 lat studiów z 49-procentowym udziałem nadzorowanej praktyki. W ten sposób, już przed końcem I roku studiów, studenci zaangażowani w pracę zdobywają wiedzę o podstawowych naukach wykorzystywanych na polu logopedii. Pod koniec II roku studenci powinni mieć bardziej szczegółową wiedzę o konkretnych obszarach tej dyscypliny. Pod koniec III roku powinni wiedzieć, jak wykorzystać to, czego się nauczyli. Pod koniec IV roku powinni być w stanie wykazać, jak korzystać z tego, co się nauczyli. Wreszcie, pod koniec programu, uczniowie powinni wykonywać czynności zawodowe z doświadczeniem, etyką i wykorzystaniem krytycznego myślenia. W podsumowaniu należy stwierdzić, że nowy program nauczania proponuje dostarczenie studentowi ogólnej i szczegółowej wiedzy na temat nauk o komunikacji i jej zaburzeniach oraz różnych rodzajach nadzorowanej praktyki. Jego głównym celem jest rozwijanie odpowiednich umiejętności, koniecznych do wykonywania praktyki zawodowej.

Słowa kluczowe: edukacja; programy studiów oparte o wymogi kompetencyjne; edukacja kliniczna; doświadczenie zawodowe; logopedia; audiology