Revising curricular matrices in an innovative pedagogical project: ways of strengthening interprofessional health education

Patricia Rios Poletto(a)
Andrea Perosa Saigh Jurdi(b)

Introduction

In 2001 in Brazil, the hegemonic pedagogical model adopted by higher education institutions, centered in content and organized in an isolated and compartmentalized way, was forced to experience important changes based on the National Curricular Guidelines. These guidelines determined that education should also take into consideration the country’s current health system (Sistema Brasileiro de Saúde, SUS - Brazilian National Health System), teamwork and a comprehensive healthcare1-3. The National Curricular Guidelines were an advance and encouraged higher education institutions to further integrate into SUS and adopt curricula with innovative strategies2-4. The guidelines also raised issues to be worked on towards change in the education of health professionals and raised the need for revising the pedagogical roles and educational curricula of courses and universities, suggesting the undergraduate courses be guided by comprehensive healthcare, (collective) teamwork and new healthcare concepts5-7.

The current education requires the need for recognizing different scenarios of sanitary practice in the care network, trying real work situations in health services to experience the country’s health system, learning its history, and committing to it8,9. Saldanha et al.10 indicate that students who experience the reality of health services act as a: "[...] social agent who builds, transforms and designs their own education based on the population’s life and health conditions, as well as the organization of the services and health system, being actively involved with the reality” (p. 1060).

Therefore, we face the challenge of reformulating the curricula and practices involved in the educational process based on a health concept aimed at contexts of life, as opposed to the remission of symptoms and cures. This concept involves a theoretical and practical integration and is interprofessionally-built with professionals capable of analyzing the social context’s complexity in order to act closer to popular cultures, build care networks among health services of different complexities, and establish organic and visceral relations between structures of care and education1-4,11.

In this context, interprofessional education makes sense. It can be defined as “an activity that involves two or more professions who learn interactively
together to improve collaboration and the quality of care” (p. 185). Going deeper in this definition, Reeves outlines that interprofessional education can also be understood as an intervention where members of more than one health or social work profession, or both, learn together in an interactive way in order to improve the community’s health/wellbeing. According to Batista, interprofessional education is currently considered a strong strategy to educate professionals capable of working in teams, which is an essential practice for comprehensive healthcare. The author states that, in the health sector, in order to “work together,” it is necessary to “learn together.” In this sense, education and health complement each other in interprofessional education. Education is understood under a dialogical and critical perspective committed to the construction of knowledge as an instrument of social transformation. Health is understood under a social-historical-cultural concept that contemplates comprehensive care and teamwork under an interprofessional perspective.

In pedagogical projects based on the interprofessional education’s logic, there is an inversion of the traditional health teaching model, giving room to discussions on interprofessional collaboration. According to Furtado, interprofessional collaboration: “[…] requires or promotes relations and interactions where professionals can offer and share their knowledge, expertise, experiences, and skills among each other in order to improve patient care” (p. 246).

With interprofessional education, learning of competencies goes beyond those specific to each professional area, with emphasis to those common to all professions as well as the collaborative ones, such as qualified hearing, creation of an effective bond, and comprehensive care of the user’s health. Therefore, an education respectful of each profession’s peculiarities that enables the creation/experience of collaborative networks is possible.

Accomplishing an educational proposal that considers interprofessionality as a prerequisite means admitting a new curricular organization that prioritizes discussions and experiences from all the different professions involved in healthcare. By considering interprofessional education as a guiding principle of the pedagogical project, the Baixada Santista campus of Universidade Federal de São Paulo (Unifesp) decided to develop a discipline-centered educational proposal and an individual professional profile. In this sense, there was a challenge: develop individual autonomy closely related to a collective work ethics. That is, build an education that is able to unleash a comprehensive view of interdependence and transdisciplinarity, enabling the construction of networks of social changes with the consequent expansion of consciousness in the individual and collective levels.

The pedagogical project of all six undergraduate courses of Instituto Saúde Sociedade (Health & Society Institute) of Unifesp’s Baixada Santista campus (Physiotherapy, Physical Education, Nutrition, Psychology, Occupational Therapy, and Social Work) includes the following guiding principles: inseparability of education, research and extension programs; professional practice as a guiding axis; questioning education based on practice and research; interdisciplinarity; students’ active role in building knowledge; the teacher as a facilitator/mediator in the teaching and learning process; integration with the community; dynamism of the pedagogical plan with permanent construction and reconstruction; formative assessment as a feedback of the process; and teacher development. In order to accomplish these principles, the curricular design was built based on four educational axes: the human being in their biological dimension, the human being in their social insertion, work in health, and health-specific. These four axes comprise the curriculum of all six courses. The first three comprise a common core to all students, who are distributed into mixed classes so that they can experience and learn together. Each course has its own health-specific axis.

After ten years building and implementing the institutional pedagogical project, reality pointed to the need for adjustments in order to achieve the education prerequisites recommended in its creation. In 2014, all six undergraduate health courses faced the challenge of revising their curricular matrices keeping their guiding prerequisites in mind. In order to achieve the goal of revising their matrices, it was necessary to consider a process where the peculiarities of each course could be connected and strengthen the common grounds among all six courses and their agents, teachers, and students. Therefore, this paper aims at describing and analyzing Baixada Santista campus’ experience in revising its curricular matrices.
Experience report

Organization of the longitudinal and transversal activities

After ten years of implementation, during which time five classes graduated in Physical Education, Physiotherapy, Nutrition, and Occupational Therapy; four classes graduated in Psychology; and two graduated in Social Work, all six courses that comprise Unifesp’s Baixada Santista campus went through a reformulation process of their curricular matrices, from 2014 to 2015. This reformulation was necessary because the individual assessments of each course (both from teachers and students) indicated difficulties in accomplishing the pedagogical project’s prerequisites and identified an excessive workload with not enough time left for other university activities.

Besides being a frequent process, revising the undergraduate courses’ curricular matrices is necessary so that education keeps up with changes in paradigm. However, this process becomes extremely complex when several courses are involved. In this sense, there was the challenge of building something able to unleash a comprehensive view of interdependence and transdisciplinarity, enabling the expansion of the individual and collective understanding. The following objectives were thus incorporated into the curricular revision: establish successive approaches among the interlocutors in education, reduce the workload, and revise the content and method emphasizing its flexibility.

In the beginning of the revision process, a workgroup was created to conduct the collective process under the coordination of the campus’ Undergraduate Chamber. The coordinators of all six courses and of all three common axes were called together. In the first meeting, the initial idea of revising the matrices based on the common axes and of coming up with strategies on how to conduct the process was presented.

The developed methodology consisted on the following concurring procedures:

1. Longitudinal activity – Series of lectures and discussions: Simultaneously to the entire process of update of the pedagogical projects, a collective reflection was conducted in the Undergraduate Chamber, open to the academic community, where strategic topics could be presented and discussed under the theoretical and methodological point of view, such as interdisciplinarity and intersectoriality; curricular flexibility; innovative teaching methodologies; assessment processes (institutional, course-related, teaching and learning-related); relationship between education, research and extension programs; among others. Three discussion meetings were held during the curricular revision, and nine other meetings were added to the regular schedule of the campus.

2. Transversal activities – Diagnosis and prognosis: In this step, workshops were held with teachers and students. The methodological decision to hold workshops was justified by the fact that they comprise a hybrid and mobile field made up of multiple experiences open to intersection with several fields and knowledge, ensuring a collectively-built questioning space.

Vilela points out that the definition of a workshop is its proposal of shared learning through activities in groups, face to face, aimed at collectively building knowledge. She also affirms that coordinators simply facilitate the discussion, always based on the participants’ doubts, opinions, and values. The methodological strategy was the previous preparation of the material by each center related to the workshop’s topic. The methodology adopted in each workshop was to present the previously-prepared material and discuss relevant issues, always creating opportunities to systematize follow-ups at the end. Each workshop lasted for eight hours. The first part consisted on the introduction of the suggested activities; and the second part consisted on a discussion based on the relevant material. Five workshops were held in the curricular revision process (Chart 1).
Chart 1. Summarized information of all five workshops.

<table>
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<tr>
<th>Workshop</th>
<th>Topic</th>
<th>Held in</th>
<th>Participants</th>
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In Workshop I, each course brought the discussion on the graduate profile conducted in their specific center. Additionally, each course’s Structuring Faculty Center (Núcleo Docente Estruturante, NDE) and students reflected upon the question “What relevance do the common axes have throughout each course?” They also created the material for the workshop. Finally, the common axes were responsible for previously creating a table with reflection points of the entire path developed throughout the years of implementation. All this material was shared during the workshop through a pedagogical situation room. Besides presenting the content, workload, and assessment processes of each common axis, the workshops enabled each course to bring forward their needs related to each one of them. It is important to highlight that, besides the collective reflections on the common axes conducted during the workshops, each undergraduate course simultaneously revised the curricular matrices of their axes of approach to the health practice, with the same objectives.

Result analysis of the longitudinal and transversal activities

In a curricular renovation process, the following aspects should be taken into account for its success: commitment to new educational practices, questioning of learning situations, teacher education, change of the learning institution’s structure, democratization of the pedagogical practice with student autonomy in their curricular path, organization of integrating axes that articulate knowledge of the old disciplines, insertion of teachers and students in real-world scenarios and the interprofessional practice.1,14

The curricular revision process experienced on campus provided important results to strengthen the guiding principles of its pedagogical project. The greatest transformations obtained from revising the matrices were related to the curricular flexibility resulted from resizing the workload into curricular units of the common and specific education axes (the workload reduction varied from 4.4% to 12.7% in the set of common and specific education axes), creation/expansion of the elective curricular units in some courses (except Physiotherapy and Nutrition), and content revision and readjustment in the curricular units of the common axes in order to favor topics that are totally common to all undergraduate courses.

Resizing aimed at curriculum flexibility is essential to accomplishing interprofessional education. Reeves12 affirms that practice of interprofessional education in an inflexible curriculum with excessive workload can be a barrier for its success. It is important that the curriculum be attractive to students and that it ensure that they relate to what is taught21. Therefore, the solution to revise the curriculum in order to make it more open and pleasant seemed adequate to us after ten years. This flexibility will provide students with the right to intervene in the educational path at the university. It is expected that this openness resulted from the reduction of excessive workload brings other learning opportunities to students, both formal (extension, research, monitoring, among other activities) and informal ones. Informal learning opportunities, “when learners meet socially and discuss aspects of their formal
education,” are important to interprofessional education because they enable individuals to share ideas (p. 188).

It is necessary to point out that even with the advance towards curricular flexibility provided by the revision of the workload and content, which resulted in more relaxed course matrices, it is clear that these adjustments are not enough to provide students with opportunities to build significant individual paths in their education. The creation of an incentive policy so that students can become the main agents in their education, building their own individual paths in the academic course in order to achieve a significant learning, is essential. Such policy should include the most diverse university activities, such as extension courses, scientific research, monitoring programs, education for work programs, tutorial teaching programs, practical experiences in real-life scenarios of free choice, elective curricular units.

During the workshops, it was possible to experience a better articulation and approximation among the education axes and their interlocutors. This expansion of connections was possible due to the acknowledgement of differences, horizontal collective construction and especially understanding of the need to prioritize common points as opposed to specific ones, which is a great challenge to consolidating interprofessional education. This experience expressed the teachers’ desire to recreate a teacher education policy and to acknowledge its importance. There was a teacher development program in place from 2006 to 2013. The campus does not currently have a teacher education policy. One of the factors that contributed to the weakening and bailing out of the teacher education program were the difficulties to manage the meeting routines on campus, which resulted in the lack of a fixed program schedule. This fact made us realize that resistance to changes surpassed the acknowledgement of the teacher development’s importance to interprofessional education.

Reeves highlights that teacher development is essential to interprofessional education. To most of the teachers, teaching students how to learn a subject with one another is a challenging experience. Therefore, continuous teacher development can reduce isolation feelings, develop a more collaborative approach, and provide opportunities to share knowledge, experiences, and ideas. Batista points out that this challenge of working in interprofessional education requires a broader competence of the teacher as a mediator. This competence includes a set of dimensions, such as previous experiences, work intentions in interprofessional collaboration, flexibility and creativity to experience shared situations with students, teacher development and commitment with interprofessional education.

Despite the improved articulation among education axes and the previously mentioned approximation among its interlocutors, we also observed teachers are still resistant to change. Teachers who are more resistant to change are those who belong to axis “The human being and their biological dimension.” In the campus’ pedagogical project, this axis deals with the human being’s biological issues and uses the predominantly traditional teaching model, characterized by the transfer of knowledge and the emphasis on memorization. This axis’ difficulty in opening up to what is new shows us it is still based on a technique-focused teaching model. Criticism to this model has been increasing throughout the years. This becomes evident when we are faced with a pedagogical project where health undergraduate courses are considered under the integrality scope, as indicated by Rego and Batista. To change teaching, it is first necessary to understand the teachers’ “belief system” in order to offer truly transforming experiences.

Even with all these efforts, such as pedagogical forums, pedagogical discussions, and teacher development meetings, ten years of pedagogical project were not enough to raise teachers’ awareness of the effective change. During the workshops, the assessment of the teaching and learning process, particularly the formative one, was highlighted in discussions. Based on notes and data presented in the workshops, it was possible to understand that, despite being provided in the methodological education prerequisites of our students, most of the teachers show inexperience in the formative assessment processes. Difficulty in understanding the meaning of formative assessment and in articulating formative assessment with summative assessment was observed. Such difficulties are recurrent in higher education, as pointed out by Santos.

It was possible to notice that, for a great number of teachers, assessments are still considered a measurement of the results not connected to the processes that originate them and to the factors that
interfere with them. As affirmed by Sordi et al.\textsuperscript{26}, when adopting assessments based only on results, we run the risk of losing the potential beneficial effects of the formative assessment, i.e. its reflexive perspective, which enables to observe and follow the process’ intentionalities. During the workshops, another trammel to full implementation of interprofessional education in the institutional pedagogical project emerged: the difficulty in building an interprofessional model. Despite the advances in the first years of education, vocational internships still work under a perspective of developing profession-specific skills and competences as opposed to common ones. Although absolutely all internships are developed in the healthcare network of Baixada Santista’s cities, they still reproduce the monoprofessional logic. There is a great resistance by the course-specific axes in changing these internships.

Furtado\textsuperscript{16} provides a reflection on these resistances showing that, in the implementation of interprofessional collaboration, individual professional areas tend to place themselves as opposing forces when trying to ensure a defined and inviolable market, expand territories, and increase their autonomy, degree of dominance and control on other professional categories. However, while the author unveils the crudity of these relations, he also shows it is possible to conciliate forces, obtaining interprofessional collaboration without losing the hardly-achieved specificity.

In spite of being open to new things, universities still struggle to build a dialogue with services and the community. This phenomenon is propagated in Brazilian universities\textsuperscript{27}. Professionals of services involved in undergraduate education activities complain they are not invited to help plan and assess activities. However, despite this limitation, they notice potentialities in the integration among education, service and community regarding changes in practice when revising their idea of health and having contact with new work forms and tools\textsuperscript{27}. Additionally, internships are submitted to the traditional logic still in force in health services, where disciplinary practice is focused on diseases, instead of individuals and their story. Lack of professionals in primary care also hampers the adequate organization of services for the provision of care in networks.

Saldanha et al.\textsuperscript{10} highlight that, similarly to changes in education, changes in service are complex. It is not enough to insert students in health services if their practices are not questioned, and other practices, more adequate to SUS, are not suggested and tried. Vasconcelos et al.\textsuperscript{27} stress the challenge in negotiating with teachers and preceptors remains, since they have different conceptions about education and care. There is also the inherent challenge to the organization of the work processes, which results in limited availability of professionals and teachers in education.

Initiatives for building a one-sided, positive integration between education and service based on the university with no negotiation with the local manager freeze this framework, weakening collaborative practices and the incorporation of permanent education strategies into strategies for the education of new professionals. According to Ceccim and Pinto\textsuperscript{28}, education and professional practice cannot go hand in hand in the development of health services. They need to follow converging lines and keep organic relations. The authors affirm there is an immediate relation between both, since education creates services, professional retention, team building, development and assessment of care and assistance technologies.

Final remarks

The curricular revision process experienced by the health courses at Unifesp’s Baixada Santista campus provided us with advances towards supporting the pedagogical prerequisites of health education under the interprofessional education logic. The curricular flexibility resulted from resizing the workload and curricular matrix content; the improvement in articulation among all education axes, bringing their interlocutors closer; and the creation of themed schedules were important results for this support. However, we, critics, still insist on fully accomplishing the pedagogical education prerequisites. Attention is drawn to the teachers’ resistance to change, who are still stuck in a traditional teaching model, the impossibility to immediately implement a policy of elective curricular units, the assessments conducted in the teaching and learning process, and the fragmented practice of vocational internships.
This process involved building agreements and aligning theory and methodology in order to strengthen the campus’ pedagogical project. Pedagogical, professional and organizational challenges need to be continuously watched out for and overcome. There is still a long way to go in interprofessional education for the education of qualified professionals in teamwork who work according to a comprehensive healthcare and the adequate development to the social needs of the Brazilian population and the in-depth development of SUS.

Authors’ contributions
Patrícia Rios Poletto and Andrea Perosa Saigh Jurdi actively participated in the discussion of the work’s results and in the review and approval of its final version.

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References


Revising curricular matrices in an innovative pedagogical project: ways of strengthening interprofessional health education

This article describes the revision process of the curricular matrices of the undergraduate health courses held at Baixada Santista campus of Universidade Federal de São Paulo from 2014 to 2015 based on interprofessional education. Longitudinal (series of lectures with discussion) and transverse activities (five workshops) were conducted. The process brought to light the necessary paths to strengthen interprofessional education. The experience created an opportunity to bring together all agents involved in the education of health professionals on campus, enabled adjustments in the curricular matrices of all six undergraduate health courses, and confirmed the need to reformulate the teacher development program. It enabled to continue consolidating the pedagogical project’s principles in the interprofessional education journey, ensuring education towards teamwork and comprehensive healthcare.

Keywords: Health education. Curriculum. Interprofessional education. Interprofessional relations.

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