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## INTERDISCIPLINARITY AS A PRACTICE IN TEACHING HIGHER EDUCATION

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### ABSTRACT

The study aimed to understand the concept of interdisciplinarity and the action of teachers in this direction. With a qualitative, exploratory and descriptive approach, data were collected through semi-structured interviews with 13 higher education teachers and Verbalization and Observation Group with 27 teachers from a private University Center in the city of São Paulo. The data were recorded and transcribed for discussion with the specific literature of the area through the thematic analysis. We conclude the relevance of an integrated planning in higher education and institutionally established that allows to raise awareness and open space for dialogue and joint study among teachers and to enable the collective construction of an interdisciplinary project.

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## INTRODUCTION

It discusses the need for interdisciplinarity in the production and socialization of knowledge in Higher Education and there is a consensual position regarding the meaning and purpose of interdisciplinarity, which is to respond to the need to overcome the fragmented vision in the processes of production and socialization of knowledge. In contemporary times, attempts and proposals in the country are truly structured, following the principle of interdisciplinarity and pointing to the dialogue between the various discourses and narratives, suggesting a collaborative and dialogic practice among the professionals of the different educational areas. However, recent research questions in such proposals the presence of a more inclusive discourse and devoid of arbitrary power relations that conjugate the interdisciplinary proposal with the interculturality (Tavares and Gomes, 2017). Many curricula adhere to a Cartesian proposal of individuality of knowledge and fragmentation of content.

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The disciplinary curriculum is still prevalent in higher education, based on individualized content and structures the formation in a logical and linear way, interfering in the career of future professionals. The untying of reality and non-association of contents tends not to comprehend the totality of the individual in its formation (Moraes and Costa, 2016). It seems to us that interdisciplinarity is an essential methodological principle for life and teaching in university classrooms and even in the elaboration of more integrated curricula and with less fragmentation in higher education. In the conceptual field it is possible to affirm that interdisciplinarity will always be an alternative reaction to the normalizing disciplinary approach of the various objects of study. Regardless of the various definitions, it is always situated in the field where one thinks of the possibility of overcoming the fragmentation of the sciences and of the knowledge produced by them and where the resistance to a piecemeal knowledge is expressed simultaneously (Machado and Batista, 2012). More than a methodological principle to guide curriculum models and activities in the classroom, it is interesting that the interdisciplinary attitude is not in the combination of contents, nor in the combination of methods, much less in the junction of disciplines, nor in the

creation of new content products functions; the interdisciplinary attitude is contained in the people who think the educational project (Souza *et al.*, 2012). The interdisciplinary posture implies humility to know the other, to share knowledge, to understand that the movement towards a collectively constructed project does not demean or reduce the value of individual knowledge. However, the scope and scope of educational work is broadened through multiple perspectives and solutions to the diverse and complex problems of today's society. In this way an issue that made us reflect and drive our actions:

How do Higher Education teachers think and practice interdisciplinarity in their classrooms?

### Objetives

Identify the concept of interdisciplinarity in the teachers' view  
Investigate the theoretical-practical insertions of interdisciplinarity in teaching of higher education.

## MATERIALS AND METHODS

The nature of the research was presented as qualitative, exploratory and descriptive for the data collection and analysis. The research participants were university professors of the undergraduate courses of a Private Higher Education Institution in the city of São Paulo, representative of the different areas of knowledge, and who agreed to participate in the research. The number of subjects was only accepted by the currently employed teacher. The population was 144 teachers and from there we had a sample of 40 who accepted to participate in the research, 27 in the Verbalization Group and Observation Group (VGOG) and 13 in the interviews. VGOG collection involved the formation of two groups at random. The chairs with the participants were organized in two circles. The interior was occupied by the members of the Verbalization Group and the outside by the members of the Observation Group. The intervention began with the discussion of the theme Interdisciplinary among the members of the Verbalization Group. A time has been set for this discussion. The Observation Group was then invited to comment on the discussion in the Verbalization Group. The observations and statements of the teachers were recorded by the researchers in field diaries. The second stage was the interview with semi-structured script that lasted approximately 15 minutes and allowed a deepening in the subjects discussed collectively. The teachers interviewed by the researchers had their data recorded and transcribed for further analysis and discussion. The process of data analysis comprised two stages: the data obtained in the registration of the Verbalization group were classified, tabulated and organized around the conceptions of interdisciplinarity that guided the axes of construction of the script of the interview. And the results of the semi-structured interviews were analyzed through content analysis, thematic type that was discussed with the specific literature of the area (Minayo, 2004). After approval by the Ethics Committee (13760413.7.0000.5377) at the university, the data were collected from the higher education teachers who signed the Free and Informed Consent Term.

## RESULTS

When referring to the concept of interdisciplinarity, we find quite convergent aspects among the interviewees, such as the

fact that interdisciplinarity work two or more disciplines or areas of knowledge at the same time, seeking what is common among them. In order to make explicit this work between the disciplines and areas of knowledge, the teachers registered words as a project: Integrated (D1, D9), interlaced (D2), interconnected D3, with the possibility of making links and approximations (D7), establishing (D5, D7) relations, exchanging different domains and information among them (D8), demands a joint work (D12, D6), working in a convergent way with and, presupposes dialogue and interaction (...) (D1). Thiesen (2008, p.551) emphasizing the importance of dialogue for the realization of interdisciplinarity among teachers reminds us that for Paulo Freire (2014). (...) interdisciplinarity is the methodological process of knowledge construction by the subject based on its relationship with the context, with reality, with its culture. The expression of this interdisciplinarity is sought by the characterization of two dialectical movements: the problematization of the situation, by which reality is revealed, and the systematization of knowledge in an integrated way.

In explaining the concept of interdisciplinarity a teacher built his idea culminating in the metaphor of a well-integrated fruit salad:

I understand that it is a discipline / content in which the student cannot identify the specialty of the teacher, because the subject is approached as a whole and not in parts. I would like to compare it to a very tasty fruit salad, where we feel the specific taste of each fruit, but at the same time all are well mixed and giving a sensational taste to the whole. (D13)

What man is this that we want to form? Is it just intellect? (GV 6).

It is necessary to leave a fragmented version of knowledge. (GV5)

My student will have to work as a team, not just with nutritionists, but physiotherapists, nurses, physicians and physical education professionals. We have to open our range. Why do we share so much in our specialties? So far in a collective meeting we tend to sit with our groups separately. (GV14).

The question of this health teacher highlights the concern of the researcher Nildo Batista in defending and working the concept of inter professional education in the training of health professionals and also in other areas of knowledge:

Among these and other challenges, the need for integration is a highlight. Integration understood in the perspective of new interactions in inter professional team work, exchange of experiences and knowledge and position of respect for diversity, thus enabling cooperation for the exercise of transformative practices, partnerships in project construction and permanent exercise of the dialogue (Batista, 2012, p.25).

I think that we work inter disciplinarily only in a conceptual way. It takes persistence, a good dose of motivation and the courage to propose alternatives without embarrassment. (GV 16). Interdisciplinary is an assumption of curricular organization. I am a champion of the change of thought and of our way of thinking. In all areas it is necessary to be more interdisciplinary. But the design of the curriculum needs to be favored. Interdisciplinary goes beyond a multiprofessional perspective.

**Table 1. Teachers referrals for the improvement of interdisciplinary processes in the university classroom**

Planning of meetings, face-to-face or not, in a constant way among the teachers	D1, D2, D5, D3, D10, D12
To practice, evaluate, discuss and re-apply a given subject in an interdisciplinary way	D11, D13, D6
In order to have meetings between the teachers with quality it is necessary extra remuneration and pedagogical incentives	D4, D8
Make the teacher more open and researcher	D7, D9
The first way is for the person to actually have the knowledge and mastery of the disciplinary area in which he will act	D3
To make teachers aware that interdisciplinarity is a path without a return, something more contextualized and that can facilitate learning	D7

Look at the same object with different looks. (GV 20) If the end of all this is that the student is a good professional I think it is worth investing. (GV3) At the end of the interview, we consulted the teachers about some ways they could suggest and explain to us the real development of interdisciplinarity in higher education. The teachers' considerations can be summarized in the table below: A study that evaluated attitudes toward interdisciplinary education, identifying factors that inhibit or promote interdisciplinary educational activities. The research was conducted in an interdisciplinary health postgraduate program at a University in North Carolina. A case study was conducted with sixteen teachers and thirteen students enrolled in the program in 2008 and 2009. Although the general attitude was positive with regard to conception of the proposed idea, there are several barriers (for example, lack of administration and support, difficulties of registration). The students had as one of their expectations to find better opportunities for work. They suggest that further research be undertaken by investigating interdisciplinary certification programs. The teaching staff however expressed the use of strategies similar to those they use in other one-to-one courses: "primary source readings," a "lecture and discussion mix," and "guest speakers." Others include group projects, case studies, and classroom exercises. In addition, at certain times they bring together students from various disciplines together so they can share their experience and diverse skills (El-Toukhy and Holman, 2012). Reflecting on interdisciplinary curricula in the health area researcher Sylvia Helena Batista (2006) points out alternatives based on her investigations:

Thinking and building paths (...) from interdisciplinarity include the implementation of curricular designs that transform the disciplinary model, either by allowing the integration of contents, or by changing the curricular organization for modules, thematic nuclei, taking a problematizing approach. (...) (Batista, 2006, p.44 and 45)

## Conclusion

Reflecting on the thoughts, perceptions, practices and referrals suggested by teachers regarding the exercise of interdisciplinary in the daily life of university classrooms, it became clear that practically all the teachers interviewed the relevance of dialogue, exchanges and constant interactions between teachers institutionally established. The concept of interdisciplinary was designed by them as an integrated work project, intertwined, with the possibility of successive approximations between teachers and themselves and consequently among the objects of knowledge they defended. It opens an environment of continuous exchanges of domains and information in a convergent, interactive, planned and institutionally established way, and this training space seemed to the interviewees the greatest challenge to be transposed.

The teacher was pointed out as a central figure, exercising the greatest role in this process of institution of interdisciplinary, which cannot be imposed merely by force or external decree, but which must be born of the teacher's decision to assume this change with a posture of humility and interest in the look and knowledge of the other. The teaching profile suggested by the respondents for interdisciplinary practices refers to a person with an open, inquisitive, researching spirit who is willing to deepen their knowledge and disciplinary domain, but at the same time accepts with courage the challenge of constantly learning with the group, with the other and embark on little-known themes as well. Sensitivity to teamwork and teamwork was evident. It is as if the interviewees drew the attention to us to collaborate with this process bringing the results of the investigation to the teachers and institutional managers. It has been evident to us that if we want to build more interdisciplinary spaces in higher education we must put our hands on the mass and practice the dialogue in a planned and intentional way, in face-to-face meetings and at a distance. There are few practical and practical interdisciplinary experiences presented by current teachers.

They allude to some meetings between teachers for the planning of these practices and transversal projects that try to dialogue with the disciplines of a semester in a given course. Other teachers reinforced the importance of moving towards building more integrated curricula and stimulating interdisciplinary practice as a quoted experience in the health area. They suggest broadening the dialogue within the courses but some also highlight the need for exchanges between different courses of the same institution, through teaching, research and extension projects.

We conclude these considerations with the words of a teacher that make us rethink and reflect on the unfolding of proposals and interdisciplinary projects in higher education:

I believe that if the ground is not ready, interdisciplinarity will not exist. Therefore, it is a basic action, coming from directors, coordinators and finally teachers. It is critical that school bases be aware of what they will do. For many years we have heard this word "interdisciplinarity", but the most we do during class is to comment with students like this: - this content you will study with Professor X, as it is part of his subject. So we believe that we are doing interdisciplinarity. My suggestion is the legend of the fruit salad, because our students need to taste the "whole" and not only the bitter "pineapple". D13 How long

will this story repeat itself in higher education?

(...) together we do much more than separate. It will require humility, consistency, and detachment to overcome fear before the new. GV 4 Courage to learn from each other and institutional planning that supports a proposal that belongs to everyone. Perhaps the path to interdisciplinarity is there.

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