GENERAL SECTION — ARTICLES

Competences in parallax in higher education from multiple standpoints in a Brazilian undergraduate program in International Business

Marcelo Almeida de Camargo Pereira and Vera Lucia Felicetti

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Abstract: This article, a summary of a broader doctoral research study by the author,[1] has different research participants, namely: graduates, their employers, professors, the College Dean and the Program Chair. The goal is to identify how these subjects comprehend the teaching and learning processes of professional competences, in the context of a Brazilian higher education program in International Business. For the theoretical reference, we discuss the concept of competence with different theoretical foundations. We present educational tools that promote teaching and learning competences, in addition to addressing competences for the 21st century. Using Textual Discourse Analysis, we deconstruct and categorize the transcribed discussions by the participants. We arrive at units of meaning, which are related to cognition, behavior, management, pedagogy, and technology, among others. Graduates understand competences are developed through work experience. Professors incorporate life and professional problems into their pedagogical practice, in line with the Dean and Program Chair,

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[1] Marcelo Almeida de Camargo Pereira, "Competências em Paralaxe na Educação Superior: múltiplos atores em um curso tecnológico" (PhD diss., La Salle University, 2020), 01–276.

who claim the use of market values to structure the program curriculum. As for the employers, they conceive of college as background for the development of professional competences, which in their opinion, occurs via work experience. The process of analyzing and connecting the units of meaning led to the development of two emerging categories: culture and technology. They are in constant action and reaction, moving the dimensions necessary for competent action, under the aegis of the technological paradigm.

Keywords: higher education; competences; professors; graduates; employers; business studies.

I. Introduction

Our society is constantly evolving and rapidly transforming. There is even a term VUCA, an acronym for Volatility, Uncertainty, Complexity and Ambiguity, to describe the current time. This concept, developed in the 1990s in a North American military high school, helps explain disruptions in society, which leads to major challenges and breaks with patterns accepted up to that point.[2]

In the complexity of this society, there are social, environmental, economic and professional issues. We must discuss the role of individuals regarding work in the 21st century, in which robots have already taken positions from humans, whose work is guided or mediated by cellphone applications, and nations compete for markets.

All of this influences work relations, which have become more intensely flexible/unstable, economically considered a means for reducing unemployment and informality and, on the other hand, a process of removing worker's rights and changes in work favoring market competition.[3]

In this debate on changes in the labor market and technological evolution, workers find that their trade is displaced from their identity. On the one hand, if technologies can provide more security, on the other, there are greater challenges for the professional placement of certain groups. This challenge comes with the urgent need for professional retraining and seems to have gained ground in the economic domain. During a meeting held at the World Economic Forum in 2020, specialists

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[2] Nathan Bennett and G. James Lemoine, "What a Difference a Word Makes: Understanding Threats to Performance in a VUCA World," *Business Horizons* 57, no. 3 (2014): 311-317.

[3] Pierre Bourdieu, *Os Usos Sociais da Ciência: Por uma Sociologia Clínica do Campo Científico* [Social Uses of Science: Towards a Clinical Sociology of the Scientific Field, my translation] (São Paulo: Editora UNESP, 2004): 17-65.

indicated the need to retrain the workforce in the face of technological advances. Some estimates indicate that in a two-year period, from 2020 to 2022, 44% of professional knowledge will change, with emphases on the following aspects: reasoning, decision-making, teamwork and knowledge management, in which cognitive skills, such as thinking and learning, gain prominence.[4]

Given this complex context of constant, profound and disruptive changes, we see fertile ground for discussing an educational model that can prepare professionals and citizens to face this complexity. Many traditional models, which were focused on teachers as transmitters of content and students as receptors, have given way to students as active leaders and learning as an educational objective. Therefore, the concept of competence aligns with workers taking their jobs back and becoming active leaders of their labor. It is summarized here as a set of cognitive skills mobilized by individuals for solving problems.

As such, a proposal for teaching competences in Higher Education, in which content can be experienced and applied by students, can better prepare future professionals. Based on the above, the goal of this paper is to explain how different players in a Brazilian higher education context in the city of Porto Alegre, RS, in the area of International Business, comprehend the teaching and learning process of professional competences.

This paper is divided as follows: the introduction, in which we present the research problem; the methodology, which presents methodological aspects regarding data collection and analysis; the theoretical framework; emerging categories; final considerations, and the references.

II. Theoretical framework

In pursuit of the origins and changes in work relations and their demands, one can see through history the evolution of the idea of work and workers, which includes the logic of competence. This process can be explained starting from the industrial revolution in the 18th century, with the emergence of industrial capitalism, which takes on new forms today due to the Information Age with new technologies.[5]

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[4] "We Need a Global Reskilling Revolution – Here's Why," World Economic Forum, posted on January 22, 2020, https://www.weforum.org/agenda/2020/01/reskilling-revolution-jobs-future-skills/.

[5] Philippe Zarifian, *Objetivo Competência: Por uma Nova Lógica* [Objective Competence: For a New Logic, my translation] (São Paulo: Atlas, 2001), 57.

II.1. Competences: what are they? How do we promote them?

Competences appear amid problems that life presents. They manifest in professional, real and contextualized situations.[6,7,8]

Another common aspect found in the literature was the connection between the complexity of situations, a component necessary for competent performance. In order for competence to manifest, situations should present problems in which individuals use cognitive resources. They are: skills of comprehension, mobilization, analysis and intervention. We highlight the use of mental schemas in mobilizations, observed by some authors.[9,10]

We emphasize the importance of individuals as competent beings. As leaders responsible for their actions, they have knowledge, analyze situations, mobilize resources and adapt solutions via schemas, then they act and face the complexity. It seems elementary, but these skills together highlight a worker's leadership.[11]

Therefore, we conjecture that competence confirms the result of an action, in which a person acts appropriately and effectively given a complex problem, using an unprecedented response, based on their knowledge and experience, with a holistic analysis of the problem, in a responsible way and with excellence. This person stands out as someone who is reliable for responsibilities in work and life.

The concept of competence is still under construction. However, we see some common ground among the authors, which makes it possible to establish a theory appropriate for this study. One commonality is the existence of dimensions that are synergistically related, some subjective in nature, such as knowledge acquired, mental schemas, learning skills and adapting solutions, as well as other exogenous factors, such as tools, singular and increasingly complex problem situations, as well as the time necessary

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[6] Zarifian, *Objetivo Competência: Por uma Nova Lógica* [Objective competence: towards a new logic], 73-74.

[7] Guy Le Boterf, *Desenvolvendo a competência dos profissionais* [Developing professional competences, my translation], (Porto Alegre: Artmed, 2003), 37-131.

[8] Antoni Zabala and Laia Arnau, *Como aprender e ensinar competências* [How to Learn and Teach Competences, my translation] (Porto Alegre: Artmed, 2010), 37.

[9] Zabala and Arnau, *Como aprender e ensinar competências* [How To Learn and Teach Competences], 39.

[10] Philippe Perrenoud, *Desenvolver competências ou ensinar saberes? A escola que prepara para a vida* [Developing competences or teaching knowledge? A school that prepares you for Life, my translation] (Porto Alegre: Penso, 2013), 45.

[11] Zarifian, *Objetivo competência: por uma nova lógica* [Objective competence: for a new logic], 42.

for competent action to manifest. Figure 1 represents a summary of authors presented here.
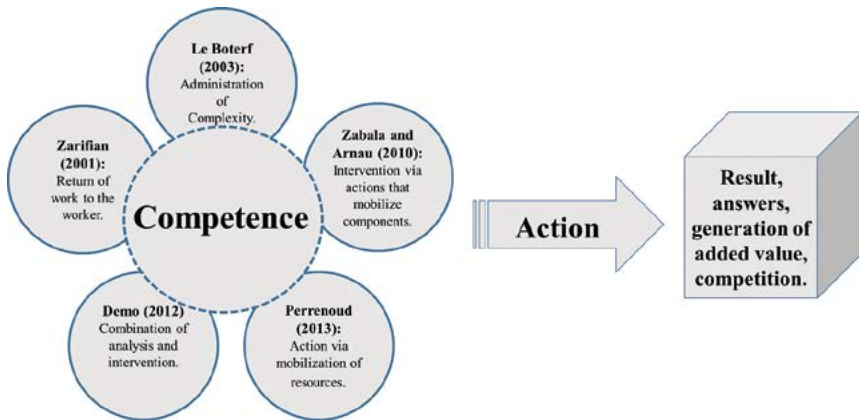
Figure 1
The definition of competence[12,13,14,15,16]

In Figure 1, the concept of competence is in dotted lines, representing the lack of fixed contextual boundaries outlining this construct. Revolving around the term, conceptual circles are connected to competence, representing the worker's return to work, administrating a complexity of situations in our time through mobilized and coordinated actions. The concentric movement of these circles makes the set appear to be a single object, which materializes through individual actions, generating a new object, which is the palpable and objectified result of competence. In other words, it is the response or solution to a complex question or situation, which generates subjective value for individuals, their work and capital.

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[12] Pedro Demo, *Habilidades e competências no século XXI* [Abilities and competences in the 21st century, my translation] (Porto Alegre: Editora Mediação, 2012), 11.

[13] Le Boterf, *Desenvolvendo a competência dos profissionais* [Developing professional competences], 37.

[14] Perrenoud, *Desenvolver competências ou ensinar saberes?* A escola que prepara para a vida [Developing competences or teaching knowledge? A school that prepares you for life], 45.

[15] Zabala and Arnau, *Como aprender e ensinar competências* [How to learn and teach competences], 37.

[16] Zarifian, *Objetivo competência: por uma nova lógica* [Objective competence: for a new logic], 56.

The relation between the concepts defended by these authors converge on the meaning of belonging in competence. This belongs to the individual, worker or student, who, given complex situations, in which resources are scarce, mobilize resources for an intervention.

How does one promote teaching and learning competences? The literature indicates that there is no single way, but an interrelation of techniques to promote teaching. Therefore, we developed Figure 2, which helps present these tools.
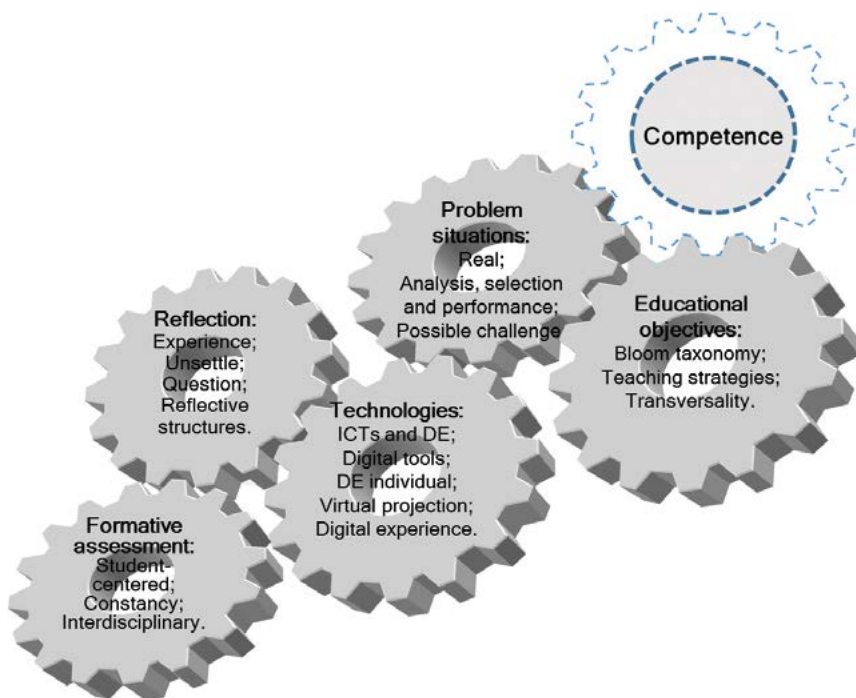
Figure 2

Tools for Teaching and Learning Competences

Figure 2 presents tools in the form of gears that help develop competences: formative assessment, in which the focus of the educational process shifts to students; assessments are constant and require professor-student dialogue and exchanges, preferably working on interdisciplinarity. Reflections, fundamental for assessments, are the means as well as the end to the educational process,

since they promote an unsettling of cognitive structures and questions actions. Another important aspect is the inclusion of new technologies, which transform education and the roles traditionally attributed to professors and students, as well as Distance Education, or remote learning, as we are experiencing in this pandemic. This is also technology-mediated learning, using digital tools that require students to be up-to-date and adapt to technology. Another verified component is the use of problem situations, which require the professor to be sensitive to planning potential challenges within their students' reality, so they can put into practice resources for solving this situation, in a process of analysis, selecting schemas and action. Finally, all the gears move (or are moved by) educational objectives, aligned with the new terminology of competences, related to a level of thinking expressed by the Bloom Taxonomy, in which teaching and learning strategies should be planned transversally and flexibly.[17,18,19,20,21,22,23,24,25]

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[17] Benjamin Samuel Bloom, David R. Krathwohl and Bertram B. Masia, *Taxonomia de objetivos educacionais: domínio cognitivo* [Taxonomy of educational objectives: the classification of educational goals] (Porto Alegre: Globo, 1972), 31-195.

[18] Philippe Meirieu, *Aprender... Sim, mas como?* [Learn... Yes, but how?, my translation] (São Paulo, SP: Martins Fontes, 1998), 47-84.

[19] Donald Alan Schön, *Educando o Profissional Reflexivo: Um Novo Design para o Ensino e a Aprendizagem* [Educating the Reflective Practioner: Toward a New Design for Teaching and Learning in the Professions] (Porto Alegre: Artmed, 2000), 47-136.

[20] Selma Garrido Pimenta, "Professor reflexivo: construindo uma crítica" [Reflective practitioner: building a critique, my translation], in *Professor reflexivo no Brasil. Gênese e crítica de um conceito,* ed. Selma Garrido Pimenta and Evandro Ghedin (São Paulo: Cortez Editora, 2008), 17-52.

[21] Zabala and Arnau, *Como Aprender e Ensinar Competências* [How to Learn and Teach Competences], 39.

[22] Juan Manuel Álvarez Méndez, "Avaliar a Aprendizagem em um Ensino Centrado nas Competências," [Evaluating Learning in a Competence-Centered Teaching Model, my translation] in *Educar por Competências. O que Há de Novo?*, ed. José Gimeno Sacristán, Angel I. Pérez Gómez, Juan Bautista Martínez Rodríguez, Jurjo Torres Santomé, and Félix Angulo Rasco (Porto Alegre, RS: Artmed, 2011), 233-264.

[23] Neil Currant, Becka Currant, and Peter Hartley, "Defining and supporting the new digital students," in *Universities into the 21st century. Learning development in higher education*, ed. Peter Hartley, John Hilsdon, Christine Keenan, Sandra Sinfield, and Michelle Verity (United Kingdom: Palgrave Macmillan, 2011), 221-224.

[24] Patrícia Alejandra Behar, *et al*., "Educação a distância e competências: uma articulação necessária" [Distance learning and competences: a necessary articulation, my translation], in *Competências em Educação a Distância,* ed. Patrícia Alejandra Behar (Porto Alegre: Penso, 2013), 42-55.

[25] Linley Cornish, "The Challenge of Developing Reflective Practitioners," in *Higher Education and Learning,* eds. Maria Emilia Amaral Engers, Marília Costa Morosini, and Vera Felicetti (Porto Alegre: EDIPUCRS, 2015), 51-64.

II.2. *Competences for the 21ˢᵗ century*

The Information Age, also referred to as Industry 4.0 or Knowledge Society, has presented several points of reflection and inflection on economic, productive and social relations, especially influencing work relations. In this period, there was a shift in productive forces from the manufacturing industry to that of services, altering job offers, demanding professionals with new competences.[26,27,28,29]

As such, the new competent professional is local and global. By proposing a competent professional for working in a broad context, Global Citizenship Education is a relevant proposal, since it outlines global competences based on local concerns, towards a collective international stance, via collaboration, innovation and knowledge management.[30] This flexible professional mobilizes different soft skills, based on personal relations, such as negotiation, leadership and communication.

The competences to work in this new age should be renewed by *transforming* old competences. Thus, transformative competences come into play, consisting of cycles of action, reflection and anticipation, in which value is created between different players, in a culturally and socially diverse environment, which is self-regulated and relaxed, with these different players assuming responsibilities and reflecting on their actions.[31]

Finally, the five competences for the 21ˢᵗ century, according to the Public Service of Ontario,[32] are: critical thinking, communication, collaboration,

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[26] Manuel Castells, *The rise of the network society* (São Paulo: Paz e Terra, 2007), 67-112.

[27] "Informe Empleadores: Titulados Universitarios y Mercado Laboral" [Employers's Report: University Graduates and the Labor Market, my translation], Agencia Nacional de Evaluación de la Calidad y Acreditacion, Aneca, Proyecto Reflex, Madri, Espanha, published in 2008, http://www.aneca.es.

[28] Glauco Arbix, *et al*., "O Brasil e a nova onda de manufatura avançada: o que aprender com Alemanha, China e Estados Unidos" [Advanced manufacturing: what is to be learnt from Germany, the U. S., and China], *Novos Estudos Cebrap* 36, no. 3 (November 2017): 29-49, https://doi.org/10.25091/S0101-3300201700030003.

[29] Priscilla Kohls dos Santos and Marília Costa Morosini, "Education for Global Citizenship and internationalization of Higher Education: the vision of the academic staff," *Revista Internacional de Educação Superior* 5, (2019): 1-17, https://doi.org/10.20396/riesup.v5i0.8653913.

[30] "Global Citizenship Education: Preparing Learners for the Challenges of the 21st Century," United Nations Educational, Scientific and Cultural Organization - Unesco, published in 2015, https://unesdoc.unesco.org/ark:/48223/pf0000227729.

[31] "The Future of Education and Skills. Education 2030," OECD, published in 2018, https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf.

[32] "21st Century Competences Foundation Document for Discussion," Ontario Public Service, Ontario, published in 2016, http://www.edugains.ca/resources21CL/About21stCentury/21CL_21stCenturyCompetences.pdf.

creativity and innovation. These competences appear to be sufficient for facing the challenges of this century, such as poverty, deindustrialization, intolerance - to which technology itself has given a voice, inequality and unemployment.

Considering the concepts presented in this section, the New Competent Professional is one who mobilizes interpersonal elements, communicates with different people, respects a diversity of opinions, works collaboratively towards results that do not conflict with their ethical values and who considers the world their home. This professional is innovative and manages information and knowledge. They are flexible in relation to new challenges and are leaders, mobilizing people through relationships. They do not allow themselves to be subjugated by technology but master it for professional practice. They are global.

III. Methodology

This study uses a qualitative approach with characteristics of a case study, as it investigates an abstract and contemporary phenomenon: teaching and learning professional competences in a specific context, a higher education program.[33,34]

The concept of stellar parallax is linked to astronomy and refers to a shift in objects according to their point of observation, or the angular shift of a celestial body from the Earth's surface and not from the center of the Earth. Through this research, we aimed to explain how different players in a higher education context, in the area of international business, conceive of teaching and learning professional competences, having different points of observation, which can be interpreted as points of view, angles and experiences.[35,36]

We provide an analogy of the definition of parallax in order to establish relations between multiple players and their different positions, as points of observation. Therefore, the theme of competences can be the "star" observed from different positions: graduates of the technology program in International

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[33] Robert K. Yin, *Case study research: design and methods* (Porto Alegre: Bookman, 2005), 32.

[34] Marina de Andrade Marconi, Eva Maria Lakatos, *Metodologia Científica* [Scientific Methodology, my translation] (São Paulo: Editora Atlas S.A. 2010), 264.

[35] Denise Najmanovich, "O Feitiço do Método," [The Spell of the Method, my translation], in *Método; Métodos; Contramétodo*, ed. Regina Leite Garcia (São Paulo: Cortez, 2003), 25-62.

[36] Kepler de Souza Oliveira Filho and Maria de Fátima Oliveira Saraiva, *Astronomia e Astrofísica* [Astronomy and Astrophysics, my translation] (São Paulo: Editora Livraria da Física, 2004), 135.

Business, professors, the program chair, the academic dean and employers of these graduates. The different shifts, or perspectives of each one, enabled the movement in parallax.

For the data collection, we conducted a focus group with 7 graduates and individual interviews with 6 professors, 1 Program Chair and 1 Academic Dean from a Higher Education Institution (HEI), as well as 4 employers of the graduates, all related to the area of International Business.

The focus group had a duration of two hours, and no previous preparation was required to the participants. The researcher conducted the focus group as a non-directive mediator, conducting discussions with open-ended semi structured questions without interfering with his judgments or his personal opinions.[37,38]

The interviews were done individually. Each interview lasted for approximately 30 minutes, and no previous preparation was required of the participants. The discussion questions were related to aspects of teaching and learning competences and relations between the job market and Higher Education, which intertwine the consequent analyses.

The focus group and interviews were recorded with a mobile, and for the transcription of the audio files, we have used the computer program Voicemeter[39] to transmit the audio from the microphone to the computer, and the website <dictation.io> to help us with the transcriptions.

This transcribed text became our research *corpus*. This *corpus* had been previously categorized, i.e., the texts were divided according to the groups of participant subjects (graduates, employers, professors, dean and program chair). Regarding the data analysis, in order for the parallax to be determined, we used Textual Discourse Analysis with the transcribed discussions from the focus groups and interviews. Consequently, it was possible to deconstruct and unitize them, establishing new relations, in the form of new units of meaning and emerging categories of analysis.[40]

The process of analyzing the aforementioned research *corpus* included different perspectives, perceptions and ideas by the participants researched. This led to new perspectives on the texts, such that new interpretations

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[37] Bernadete Angelina Gatti, *Grupo focal na pesquisa em ciências sociais e humanas* [Focus group in social and human sciences research, my translation] (Brasília: Liber Livro, 2005), 9.

[38] Antônio Carlos Gil, *Como elaborar projetos de pesquisa* [How to prepare research projects, my translation] (São Paulo: Editora Atlas S.A, 2010), 109-119.

[39] Available at: https://www.vb-audio.com/Voicemeter/.

[40] Roque Moraes and Maria do Carmo Galiazzi, *Análise Textual Discursiva* [Textual Discourse Analysis, my translation] (Ijuí: UNIJUÍ, 2007), 85.

emerged from the chaos, in the form of emerging categories. This characterizes the depth attained by the researcher after months analyzing the *corpus*, in spiral and dialectical interactions with the theoretical reference, in which the discussions were deconstructed and related to the theoretical reference according to the different groups of players.[41]

Based on this process, the participants' statements were connected between the different groups of players and grouped into units of meaning. The connection of these units provided the emerging categories, which helped us understand and explain the phenomenon being studied.

This research was approved by La Salle University ethical committee, under the Certificate of Presentation of Ethical Appreciation process 12019219.4.0000.5307.[42] All participants of the research signed an Informed Consent Form, in which the anonymity and confidentiality of the data were assured.

IV. Emerging categories

The connection between Graduates and their Employers resulted in the following units of meaning: learning through practice, culture, commitment, technology, ethics, transformation, generations, relationships and instability. Based on these units, from the standpoint of graduates and employers, we can deduce that learning happens through work experience, which is unstable and stems directly or indirectly from existing technologies, which change the way we work and live. As a way to launch into the job market, one must be committed to his own learning. Knowledge acquisition, which broadens culture, transforms people for their professional and social performance. This process, however, varies according to different generations and individual maturity. Younger generations tend to want to accelerate this process, skipping over important steps in learning, a reflex of the immediacy provoked by new technologies.

The connection between Professors, the Program Chair and College Dean led to the following units of meaning: prior student education, practice-based pedagogy, technology, entrepreneurial project, problem situations, systemic view, educational objectives, professor mediator, reflection, relationship, student-centered approach, and formative assessment. Based on these results, we can envision profound changes in the role of Higher

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[41] Moraes and Galiazzi, *Análise Textual Discursiva* [Textual Discourse Analysis], 83-88.
[42] Further information available at: https://www.unilasalle.edu.br/canoas/mais/comite-de-etica-em-pesquisa (in Portuguese).

Education. The heart of the educational process is aimed at student empowerment, while professors take on an important role of knowledge mediator. Lifestyles and productive needs interfere directly with education, in which work transforms pedagogy, changing the way to teach, with new technologies included in the teaching and learning processes. This entire reformulation has clear principles, systematized through educational objectives, which emulate work situations in a constant assessment process, and promote reflections on performance, as a continuous cycle within a system. On this path, obstacles for teaching are in students' precarious prior education, which needs to be salvaged by the professor mediator.

The following units of meaning emerged from Graduates and Professors: traditional teaching; tables; entrepreneurial project; prior student education; student commitment; educational objectives; and personnel management. We can see some (dis)connections in the "head to head" between these important players. If professors have a new role of mediator for teaching competences, students also need to change their paradigm beyond traditional teaching, understood here as predominantly expository classes, and be committed to their learning. This may be explained by students' prior education, still tied to this kind of teaching, in which teachers and memorizing content play a central role. In this respect, when they face a truly challenging activity, in which they must pursue knowledge from different areas and people, combining multiple skills, they demonstrate the need to develop management and self-management skills.

Regarding the connection between the Employers of Graduates, the Program Chair and College Dean, who represent a conceptual dialogue between the job market and Education, the following units of meaning emerged: practice-based pedagogy; Pedagogical Program Project (PPP);[43] entrepreneurial project; technology; behavior; frustration; critical thinking; structuring core faculty (SCF);[44] educational objectives; generations; reflection; ethics; theory and practice; and collaboration. We see a feedback cycle in the connection between the job market and Higher Education. The market receives professionals from this level of education, who are educated with knowledge that it defines. The program is designed according to practices, trainings and experiences by professors from the job market, who know the area and adapt their classes to situations in the market. In this design, there must be a balance between theory, seen in college, and practice, in the

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[43] In the Brazilian context, it is a document that helps systematize and organize the curriculum, by selecting the content necessary for student education.

[44] This is a group of professors responsible for updating the PPP.

job market. In this discussion, different generations, driven by technology, can learn ethical values for their professional work, with the nascent trend towards collaboration instead of pure competition with one another.

Finally, when all participants are analyzed together, which we call a parallax movement, the following units of meaning emerged: culture; dialogue; practice; ethics; competition; behavior; communication; knowledge; relationship (experience); resilience; technical competences; systemic vision; proactivity; technology; innovation; and critical thinking. The characteristics necessary for International Business professionals to work in society, from the perspective of multiple groups of players, can be attributed to individuals who, with critical thinking, act ethically in society, interact with various players, considering their culture and their larger context, that is, thinking globally. They understand that the world today is competitive, but start to realize that collaboration can provide a collective well-being. This individual is connected through technologies and learns every day through relationships with different people. They actively face reality, resisting obstacles that life and work present.

In order to understand which units of meaning emerged from each player, and to help us determine the points in common that each individual have, we present Figure 3, which shows an adapted four set Radial Venn with the units of meaning grouped by groups of players.
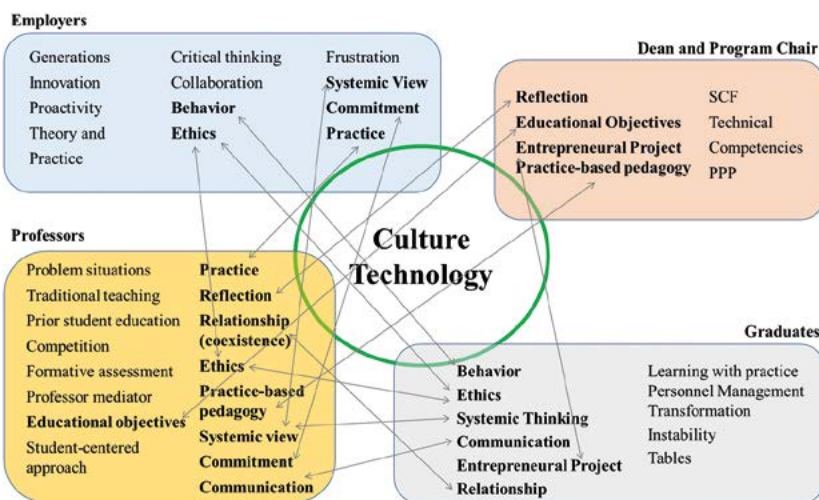
Figure 3

Units of meaning by groups of research participants

Figure 3 organizes the units of meaning from the corpus in each box, which represents the group of participants interviewed. Inside the boxes, the words, which represent the units common to other groups of participants, are in bold. Moreover, they are connected by gray arrows, in which gray arrows represent the connections from one to three groups of participants, and the green circle reveals emerging connections common to all of them. Finally, the green circle presents vital information for this analysis, since there are two units of meaning in common with all participants: technology and culture, which will be addressed below.

Aside from these general aspects, provided in Figure 3, we were able to establish views on each different place researched, following the deconstruction of the corpus towards Parallax, which is the connection of all units of meaning as a single, multifaceted and multidimensional understanding. Based on the aforementioned figure, the following views were determined:

- Graduates: are in an unstable, transforming context that they still cannot understand. They see themselves in a competitive market and are constantly pressured to get training. They understand that technical competences are important, but behavioral ones are more highly demanded in the market, precisely because dealing with different people and cultures is one of our major challenges today. College takes on a meaning of transformation, since it emulates the corporate environment in the classroom. In Higher Education, graduates learn to communicate better, form connections with new colleagues and professors, in addition to broadening their views on performing in society as well as in work, and being more critical individuals, with ethical premises. Graduates understand that learning competences happens through work experience, even if college simulates situations with complex activities, which encourage students to apply (and demonstrate) their competences. College takes on the meaning of a preparatory ritual, since it provides a foundation for where learning is believed to take place: at work.

- Professors: are tuned into a period of changes and training (in the sense of teacher training) during this change. They see technologies change their performance in the classroom, with positive and negative aspects resulting from students' prior education and their lack of active commitment to their own learning. They aim to apply educational and technological techniques in the classroom, in order to capture the attention and motivate students. They feel like salespeople, who need to constantly demonstrate the relevance of the product they are selling: knowledge, which the

'client' or student who becomes this character in the teaching and learning process, agrees "to buy". Professors are increasingly more distant from traditional teaching, that is, all classes are developed in the same way, seen here as expository in nature, without the balance and diversity that the daily class routine requires, turning students into active participants committed to their learning. Therefore, professors aim to understand the students' world, in order to promote activities in class that are connected to their reality, at the same time in which they lead to relevant learning. These professionals promote practical activities, based on real situations, which spark meaning for students. Consequently, student assessments occur constantly, in which the activities, whose goals are pedagogically clear, promote reflection on performance, so that they can learn or change. Professors understand their role at a time in which information is at the disposal of students. They are the lighthouse that signals the path to learning competences, showing the way, though students are the ones who decide whether to take it.

- The Dean and the Program Chair: the Dean is involved in macro aspects of the HEI, while the Program Chair is concerned with curricular aspects, the faculty and the students. Both understand that professors need experience in the job market in their respective area of expertise, to then be prepared as teachers. Job market experience is essential for the classroom, since it turns professors into the means of access to the job market. The curriculum is structured to teach competences and skills. Professors end up becoming the main ally of chairs in achieving the vision of the HEI, which is to prepare people for the work world. The final program activity, the Entrepreneurial Project, interconnects all the disciplines, becoming the pinnacle of the program. The chairs are clear about the competences to be developed in the program, given that they fuel the job market, preparing their teachers, in this sense, to prepare students to work. These individuals understand that teaching competences takes place by applying connected techniques within the curriculum established by the HEI, in which contents are developed in a practical way, with guided activities that demonstrate what students can do with this content.

- Employers: can better understand the changes that have occurred in the job market due to seeing technologies change the way they work. Young employees are revealed to be willing and capable individuals, though without the patience necessary for the work, which requires persistence, resilience and critical thinking. Employers understand the

important value of ethics, together with a broad view of systems, in which actions of one employee can impact the entire organization. Moreover, they incorporate values of the market that they also demand of employees: proactivity and innovation. Employers understand that learning competences occurs with work and experience. College is an environment and a backdrop, because it promotes conceptual learning, while in the day to day of work, real practical learning occurs, in a context with pressure and communication with many people. This learning is always reactive, since work, practices and techniques change with greater speed. Situations become different and more complex, because technology is always ahead, and people keep updating to try to catch up to it, despite nobody realizing that this situation is similar to that of a laboratory guinea pig, running after food on a conveyor belt that never comes to an end. In order for everyone not to be laboratory guinea pigs, collaboration seems to be a solution, even if palliative, in this constant race against technology.

Finally, still in the scope of Figure 3, we observe two units of meaning common to all participant groups: culture and technology. These units are essential for the analysis. Therefore, we proceed with a new categorization, in which we determined that Culture and Technology encompass the units of meaning presented by the participants, in addition to constituting points in common according to the position of each participant researched, demonstrated in Table 1 below.

Table 1

Emerging categories and regrouping units of meaning

Emerging Category	Units of Meaning
Culture	Behavior, Collaboration, Commitment, Communication, Competition, Critical thinking, Culture, Ethics, Formative assessment, Knowledge, Learning with practice, Personnel management, Practice-based pedagogy, Prior student education, Reflection, Relationship (coexistence), Relationship, Resilience, Structuring Core Faculty (SCF), Student-centered approach, Traditional teaching, and Transformation.
Technology	Educational objectives, Entrepreneurial Projects, Frustration, Generations, Innovation, Instability, Pedagogical Program Project (PPP), Practice, Proactivity, Problem situations, Professor mediator, Systemic thinking, Systemic vision, Tables, Technical competences, Technology, and Theory and practice.

We are currently in a technological paradigm that transforms culture through information technology and its entire apparatus, such as computers, telecommunications, electronics, applications, etc. Technology promotes constant discontinuities in the foundations of the economy, society and culture. This entire pattern of discontinuity occurs in different stages, involving the automation of activities, experiences obtained with this information and reconfiguration within the technological paradigm, in an accelerated technology-based cycle. The clearest influences of technology on culture are in the knowledge generation process, in all spheres, given information processing and use. This has also changed economic activity in the sense of migrating from industrial economic activity to the service sector, which is the heart of the new social structure.[45]

As a result, some relations are established. Regarding culture, all units of meaning that are directly or indirectly related to it are grouped in this emerging category for the following reasons: learning through practice presumes knowledge (another unit of meaning), in addition to the emerging category of culture. Communication, seen in participants as a skill for exchanging information and knowledge between people, is a way to disseminate this emerging category. This approach is centered on students, individuals of culture, who learn and also produce knowledge. Formative assessment is a kind of assessment that assumes a constant professor-student relation, which highlights culture. Competition, seen in the sense of a competition culture, that is, a set of habits related to competition. Commitment, a quality unique to individuals, to being active leaders in their cultural development. Collaboration, an attitude of human beings who develop a support network, in the sense of promoting culture and sharing knowledge and skills. Ethics, a set of social rules for individual performance in society, embrace culture in the sense of being incorporated into the set of individual habits. Personnel Management, which despite its corporate meaning, conveys relationships with different individuals with different cultures. The SCF, in turn, is a kind of collegiate of professors for structuring a curriculum, in which culture is a key factor. Traditional teaching and prior student education walk hand in hand, since student education occurs in a context of knowledge and cultural transmission. Practice-based pedagogy has an important aspect: despite being an a priori practice category in the new technology category, pedagogy changes the science whose object of analysis is education, a disseminator of culture. Critical thinking follows this last category, being a quality of individuals in a cognitive process of analysis, reflection (another

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[45] Manuel Castells, *The Rise of the Network Society* (São Paulo: Paz e Terra, 2007), 269.

emerging category) and change. Transformation is in the last category because college changes individuals with respect to culture, transforming them. Relationships, also in the sense of coexistence, practice culture as a connection between human beings for disseminating culture and affection. Finally, resilience is included because it is also a cognitive ability to resist adverse situations, not related to technology.

In relation to the technology category, the units of meaning that are directly or indirectly related are grouped according to technical competences, in an operational sense. In order to exercise technical or technological activities, they use technology, since the very notion of competence, resulting from the evolution of work, is also connected to this emerging category. The units frustration and generations go hand in hand, since the virtuality provided by technology produces expectations that reality also occurs at the same speed, generating frustration in those who compare themselves with images of successful people and believe that the path is fast, as seen on social networks. Innovation, an idea constantly linked to technology (as an emerging category), also comes from the speed at which technology evolves. Instability, in turn, is directly related to new technologies and innovation, because the constant technological changes, which change the way people relate and work, in a context of interconnections and immediacy, provokes feelings of instability. Proactivity is another related unit of meaning, since, in constantly changing contexts, those who actively anticipate problems may stand out. Systemic thinking and systemic views are linked mainly through the notion that we are in a system in which one action is reflected throughout the entire chain.

Despite apparently being related to culture, Educational objectives involve processes for classifying categories of thought, transforming how culture is transmitted. Problem situations are class tools for transmitting culture, emulating real situations, in which culture can be applied. Practice goes into this new category due to the new technological paradigm changing the focus of educational development and knowledge accumulation to practical applications of this knowledge in real contexts. The entrepreneurial project adopts the technology category, since it is an integration of various tools for applying knowledge. Professor mediators are in this category because their role has been modified by technology. Considering how knowledge is available on the internet on a range of technological devices, professors have become a reference in applying knowledge. The PPP embodies the program in the technological paradigm, with emphasis on the practical application of knowledge. Finally, the tables are located along these lines as an instrument in technological environments for work, and theory and practice together demonstrate the applicability of culture for working professionals.

The two emerging categories, Technology and Culture, are directly connected to the theoretical reference. The former is based on the perspective of Zarifian,[46] who claims that competence is composed of dimensions, such as practical understanding, knowledge, transformation and situations. Assuming real contexts for these dimensions, it is connected to culture through knowledge and technology, especially in that it addresses transformation and situations that professionals face. Transformation, using an analogy, can be seen as a dialectical relation between two final emerging categories, which are related in a complex way, provoking (or modifying) competent actions.

Being complex categories, which are intertwined and add emerging units of meaning from various individuals on different paths, they are relevant to the indication from Le Boterf[47] that competence involves the administration of complexity, in which professionals confront problems using the resources available to them. The emerging categories are directly compatible with the knowledge that is part of the administration of complexity, namely: the knowledge to act relevantly, adhering to technology because of the ability to anticipate situations, which are connected to the proactivity unit of meaning; the knowledge to mobilize knowledge in a professional context is directly connected to technology, by means of the entrepreneurial project, the educational objectives and practice; the knowledge to transpose is also linked to technology, due to the need to adapt knowledge, following a standpoint within the educational objectives; the knowledge to learn and to learn how to learn, in turn, are linked to culture through reflection and knowledge; finally, the knowledge to get involved is connected to the emerging category culture, one of the components of commitment.

The idea that the relationship between the two emerging categories - technology and culture - influence reality, with meanings that denote subjective and environmental aspects, also corroborate claims by Zabala and Arnau.[48] As categories, technology and culture are also supported by the postulates of Perrenoud,[49] who claims that competence is a lattice that underlies and accelerates resources synergistically, constituting a type of intelligence memory for confronting situations. In this sense, the links

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[46] Zarifian, *Objetivo competência: por uma nova lógica* [Objective competence: for a new logic], 68-74.
[47] Le Boterf, *Desenvolvendo a competência dos profissionais* [Developing professional competences], 40-80.
[48] Zabala and Arnau, *Como aprender e ensinar competências* [How to teach and learn competences], 11.
[49] Perrenoud, *Desenvolver competências ou ensinar saberes? A escola que prepara para a vida* [Developing competences or teaching knowledge? A school that prepares you for Life], 45.

between emerging categories form this lattice, which seems to accelerate learning, the changes resulting from the technological evolution, and knowledge generation.

Based on the data analyzed from different points of view, which we call parallax, we can explain how different individuals involved in a Brazilian higher education context demonstrate teaching and learning professional competences. They result from the relations between culture and technology, which develop constantly and independently in a continuous dialectical movement, in which technologies drive culture, so that, through human knowledge, attitudes, experiences and other cognitive-behavioral resources, professional skills are updated in an environment of changes in the work world.

V. Final considerations

The goal of this article was to explain how different players in a higher education context, involved in the area of International Business, comprehend the teaching and learning of professional competences. To this end, a case study was carried out, a qualitative approach, with data collected via a focus group with graduates and interviews with professors, the dean of an HEI, a program chair and some employers of these graduates, all in the scope of a higher education program offered by a private HEI in the city of Porto Alegre, RS.

This study was based on an analogy with a term used in physics and astronomy, called (stellar) Parallax, which provides that, in order to determine the position of a celestial object, one must see it from different locations, which, in this study, were the various players researched. The research *corpus*, which was categorized, unitarized and deconstructed following Textual Discourse Analysis, led to the development of units of meaning. From these units, the potential for a final process of categorization emerged, leading to two final categories: culture and technology.

Graduates are in an unstable context in transformation that demands continuous learning in the face of challenges from the job market. They consider college to be a preparatory ritual and that learning in fact occurs in professional work. Professors are tuned into the changes that technology presents, aiming to take situations to the classroom in which the content can be applied and have difficulties sparking student commitment to their learning. Both the Dean of the HEI and the Program Chair are involved in broader aspects of the educational spectrum and understand that the orientation of the job market requires market professionals "transformed"

into professors. They work towards a structure that can converge on a curriculum appropriate for teaching competences, so that students can apply the content in the classroom. Finally, the employers of the graduates are tuned into the changes in the job world and may have difficulty with more recent generations, which aspire to learn more quickly and believe that the pace of professional development follows the same as that of technology, in addition to the contribution of work to society.

Competence undergoes direct transformations based on the interaction between culture and technology, which are the converging points among all subjects researched. Technology, in the broad sense, related to information technology and its interrelations with education and work, generates information and knowledge exponentially, transforming relations and the way people work, with structural changes comparable to those of the Industrial Revolution. It forces culture, which bears human qualities, such as behavior, knowledge, attitudes, emotions and cognition, to also move. It is a constant helicoidal movement, an almost endless action and reaction.

Therefore, we believe that this research can be applied to readjusting curricula for modern times, which demand behavioral competences that dialogue with the needs of the market and society, keeping in mind that Higher Education needs dialogue from these different players to be effective. The strength of one's competence is difficult to measure, given that it is implemented outside of the academic environment. However, a theoretically-backed, systematic study with defined objectives helps build paths that individuals can take in pursuit of competences.

Competences are an inseparable part within the capitalist system and need to be critiqued, embraced and more well-developed, so that the best of them can supervene to improve living conditions, being preferable that we all win. Human competences are the future, together with technology, towards an uncertain future, which can change. Perhaps there will be a time of singularity, in which humans will no longer be the only fuel for technology, but that it will feed itself. This context would open - some say it will open - a completely new path, which will provoke profound changes in production and in society, which will demand competent individuals for challenges that are yet to come.

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