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MAIN COMPETENCIES FOR SUSTAINABILITY IN A BRAZILIAN PUBLIC UNIVERSITY

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ABSTRACT

This study aimed to identify the competencies for sustainability of the public servers of a Brazilian public university in order to better understand the skills necessary to achieve sustainability in higher education institutions. A study carried out by documental research was conducted to identify how the sustainability is treated in the institution's documents, in sequence a survey was conducted with 549 subjects. The findings reveal that the skills for sustainability are more focused on the individual level. It is necessary, therefore, that the university develops strategies and actions focused on the collective level. Institutionally, the university can promote and encourage training courses on education and sustainable management, development announcements that value stocks and interdisciplinary projects for sustainability and structuring of a sector that manage environmental issues at a strategic level.

Key words: Competencies for Sustainability; Sustainability; Green University.

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1 INTRODUCTION

Higher Education Institutions (HEIs) play an important role in promoting sustainability (ALEIXO, LEAL and AZEITEIRO, 2018). According to Rossato et al. (2009), one of its social functions to the community is to qualify and empower individuals, who by becoming professionals committed to sustainable issues, contribute to building a better and fairer society.

The engagement of HEIs on the issues of sustainability has increased worldwide after the discussion of the role of Development Education Sustainability, held in Agenda 21 (ALEIXO, LEAL and AZEITEIRO, 2018). In the national context, the issue has been repeatedly discussed, and since the publication of the National Environmental Education Policy (Law 9795 of 1999), education is seen as a process of formation of values, knowledge and skills for the conservation of the environment. One of the principles of environmental education focus on sustainability and refers to the interdependence of the natural environment, socio-economic and cultural (BRAZIL, 1999).

Environmental management is task that must be hold by everybody (government, society and business) and widens the perspective of sustainability management, which according to Almeida (2002) is related to the sense of survival to face life's challenges and fight for it.

Environmental management requires specific skills in any sphere - including at the individual level. For Munck and Borim-de-Souza (2012), each initiative to sustainability must be based on individual skills related to economic, environmental and social dimensions, and it is through appropriate skills that is possible to achieve organizational sustainability.

Much has been studied and reproduced on organizational skills, management skills, skills, training and skills development, skills classification, sustainable leadership, but there is a specific focus on skills for sustainability, which are skills in the individual level that can contribute to the whole picture, regardless of the organization in which you work. Even though fundamental to the development of administrative management, personnel management, environmental management and education for sustainability, there is no elucidation of what are the skills needed to achieve sustainability (D'ANGELO, 2009; OLIVEIRA *et al*., 2011; SOARES e FRANÇA, 2013; CELLA-DE-OLIVEIRA e TAKAHASHI, 2014; ZUZMA *et al*., 2017).

In this sense, moved by this gap, this study seeks to identify the competencies for sustainability of the public servers of a Brazilian public university in order to better understand the skills necessary to achieve sustainability in higher education institutions.

2 SKILLS FOR SUSTAINABILITY AND BUILDING A GREEN UNIVERSITY

The World Commission on Environment and Development (WCED), created in the 1980s, was responsible for the concept of sustainable development: "development that meets the needs of present generations without compromising the ability of future generations to meet their own needs" (WCED, 1991). Dias (2002, p. 38) points out that "sustainable development is the most viable way to get off the path of misery, social and economic exclusion, consumerism, waste and environmental degradation in which human society is."

Becker (1997) points out the Hispanic origin of the word sustainability as *sostenabilidad/sostener* which means support. Boff (2010) contributes to the idea that the concept of sustainability comes from biology and ecology and that means the ability of an ecosystem has to

keep everyone in a dynamic balance that allows the survival of biodiversity.

From these authors and their concepts, it is clear that sustainability is related to the living, the permanence, the subsistence of individuals living with each other and with the environment.

According to Sartori et al. (2014), despite the concept come from various instances, what is common is the need to integrate economic, environmental, social and institutional issues to implement sustainability. Moreover, it should take into account the impact of the actions of this in the future, highlighting the importance of awareness and involvement of society.

Although often not accepted in full, the reality is that it needs to dialogue on the concepts of sustainability and sustainable development in the wider spheres of the universe, be they political, economic, social, cultural, among others (KATES; PARRIS; LEISEROWITZ, 2005), so as to create a commitment to the preservation, improvement and recovery of the environmental quality of life, in order to ensure, conditions for socioeconomic development and the protection of the dignity of human life, as brought by the National environmental Policy, established by Law 6938 of August 1981.

Discussions about sustainability and sustainable development, according to Bridges et al. (2015) have made emerging environmental concerns in organizations from various sectors, as well as the IES. According to the author, to be disseminators of knowledge organizations need to continuously reflect on their role in preserving the environment, developing socially and environmentally responsible educational environments.

According Aleixo, Leal and Azeiteiro (2018) many scholars argue that higher education institutions should have been better prepared to play a significant role in promoting sustainable development, and an increasingly larger number of stakeholders expect themselves to be sustainable organizations.

A green university "connects the individual to the surrounding environment within which lives and breathes, and that is an integral part, appears as urgent need, can be considered a key link to the emergence of sustainable societies" (MARCOMIN and SILVA, 2009, p. 115). In addition, environmentally green university is based on four pillars: teaching, research, extension and management (the latter as a facilitator and integrator of mission, vision and values of the institution). Yet, for the authors, attempting to turn into green university should be considered in the Institutional Development Plan (IDP), the Institutional Educational Plan (PPI) and the Pedagogical Project Course. The actors of this process are: the managers of all levels, associations with function/activity of teaching, research and extension, employees, parents, students' tutors and community (companies, NGOs, labor unions…)

Oliveira et al. (2011) propose that the skills for sustainability in organizations are formed by knowledge and organizational skills that, when practiced, are capable of generating means for the company to adapt to opportunities and market demands. Thus, similarly, skills are able to provide the university means for adaptation to the law and the needs of society towards sustainability.

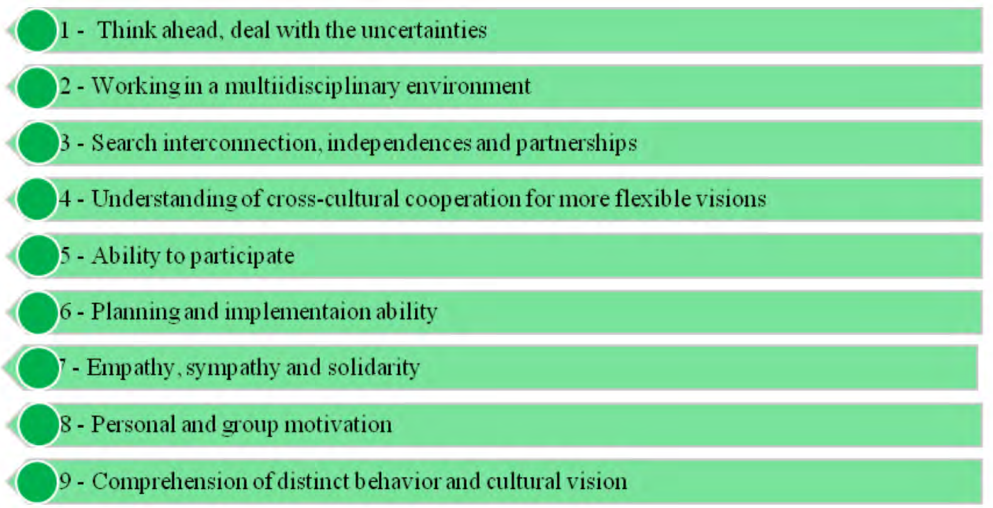
Still, the competency management can be understood as a response to social expectations for organizational actions for sustainability. By linking and approach individuals and companies, management skills provides an enabling environment of discussions about the organization's problems, both related to economic responsibility, for the environmental (MUNCK et al., 2011, p. 8).

Besides that, "the fact that organizations manage to structure their skills in a specific management model is only a starting point for the development of a strategic plan linked to as-

pects of sustainability"(MUNCK et al., 2013, p. 652).

Regarding the powers for sustainability, Beuron (2016) 9 summarizes the items produced by Barth et al. (2007), Gombert-Courvoisiers et al. (2014) and Wals (2014) as shown in Figure 1:

Figure 1 - Skills for sustainability



Source: Beuron (2016

From the items prepared by Beuron (2016), it sought to expand the powers to be analyzed based on the United Nations Educational Scientific and Cultural Organization (UNESCO, 2005) and Gombert-Courvoisier et al. (2014), as shown in Table 1:

Table 1 - Constructs and Skills for Sustainability

Constructs	Skills
Management / Planning	- I have ability to conflict management - I can make decisions that lead to sustainable development - I resolve issues related to Sustainable Development - I handle with uncertainties - I think prospectively - I take economic opportunities to improve livelihoods and quality of life
Knowledge	- I apply the knowledge to sustainable development - I think creatively and critically - I create and use tools - I reflect on the values of sustainable development - I have good oral and written communication - I divulge information related to sustainable development
Learning	- I use appropriate Information and Communication Technologies - I always order to keep learning - I seek a collaborative learning
Cooperation	- I create networks of cooperation for sustainable development - I establish partnerships to promote sustainable development - I work together for sustainable development - I cooperate with heterogeneous groups - I work in multidisciplinary environment

Personaland global values	- I seek peace in the world - I am friendly - I supportive - I motive myself and others - I sensitized people around me to seek sustainable development

Source: Adapted from UNESCO (2005) and Gombert-Courvoisiers et al. (2014).

The skills presented in Table 1 seek the contribution and promoting sustainability. Thus, competences for sustainability are structured means established in each individual capable of assisting in the construction and consolidation of a green university, which is a form of culture that emphasizes sustainable relationship between people and the environment and is an important tool for achieving global sustainable development. According to Wang et al. (2014) green culture is built from various aspects such as management, education, environment, internationalization, among others, and has the objective of the educational function is major player in this process.

3 METHOD

In order to meet the goal outlined in this study, it carried out a descriptive study, whose data were collected through document analysis and questionnaire.

The study object organization was a public institution of higher education located in the central region of Rio Grande do Sul State, which has shown strong growth in the national scene, as well as being of fundamental importance to the community where it operates.

The documentary research was done by institutional site and sought public documents, as well as actions that demonstrate how sustainability management by the university.

The survey was conducted with a non-probabilistic convenience sampling. In this part, 549 individuals participated (teachers and administrative technicians in education) who answered a questionnaire built on work Beuron (2016), in studies of Barth et al. (2007), Gombert-Courvoisiers et al. (2014), Wals (2014) and the principles of UNESCO (2005). The study population consisted of a total of 4797 employees, of which 2034 were teachers and 2763 technical-administrative in education (UFSM, 2017).

Before the data collection, the questionnaire was submitted to semantic validation and content through expert assessment. They evaluated the content and form of the questionnaire as its clarity, objectivity and precision of language. It was also carried out a pre-test with a group of 10 servers, in order to verify possible inconsistencies (complexity of the issues, inaccuracy in writing, unnecessary issues, constraints to the informant, exhaustion, among others) that the data collection instrument could present and thus identify potential improvements in it. The pre-test data were not considered for the search.

Following these steps, the instrument was composed of three parts: the first part aimed to identify the profile of the investigated sample; the second part measures the skills of the respondents with regard to sustainability, these items followed a Likert 5-point scale ranging from 1 (never) to 5 (always); and the third part of the questionnaire was composed by 6 questions who sought a better understanding of how sustainability fits into the context of the studied university. For compliance measurement of the items that compose the last part of the questionnaire we used a Likert scale of 10 points, where assigning the number 1 is “no” and the number 10 “a lot.”

Before the start of data collection, this study was submitted to the Ethics Committee.

The Consent and Informed (IC), the data collection instrument and the Confidentiality Agreement followed all ethical precepts.

After application of the questionnaires, the data were computerized electronic file via the Excel software and analyzed with the aid of the Statistical Package for Social Sciences (SPSS).

Initially, exploratory analyzes were performed to investigate the accuracy of data entry, the description of the sample and the distribution of variables. Descriptive statistics possible to identify skills resulting sustainability of significant responses of each individual.

4 DISCUSSION AND RESULTS ANALYSIS

Regarding to the actions of the research institution it has been observed that various activities and projects for sustainability are developed. There are long and short-term actions in order to raise awareness of the reduction in energy and water consumption on campus. The public involved in this campaign are students, teachers, technical and administrative staff and contractors. This aspect is very important, since acording to Koscielniak (2014) the role of a university in sustainability should encompass a number of aspects, such as stakeholders and administration.

The University has an Environmental Planning Commission, made up of a coordinator, students, teachers and technical administrators. The commission's goal is to develop projects and solve environmental issues on all campuses. Referencing Geng et al. (2013) that emphasize the campus sustainability as an important approach in seeking environmental sustainability, Dagiliute, Liobikiene e Minelgaite (2018) reforce that Universities should propose internal possibilities to behave in a more environmentally friendly mode.

The University's Management Plan for Sustainable Logistics 2016-2018 contains 13 strategic objectives and 25 goals related to sustainability. This plan search strategies, actions and support for issues management and sustainable planning.

In addition, there is a tool that seeks to identify the training needs required by the public servers: The Training Needs Survey. In the last survey were observed various topics related to sustainability as requirements that public servers present in relation to training (Environmental Education, Environmental Management and Sustainability).

According to Cebrian, Grace and Humphris (2015) organisational support, professional development and creating reward structures are necessary strategies towards academic staff engagement in this agenda.

As regards the analysis of university documents, it is clear that the institution deals with sustainability in one of its main tools is the Management Plan for Sustainable Logistics, and highlights a concern of its servers through another important tool that is the Training Needs Survey. Thus, it is noted that the university, in general, as well as their servers are concerned about the sustainable future of the planet.

Next, the Table 1 shows the average and standard deviation of the construct skills.

Table 1 - Average and standard deviation of the construct Items Skills

Item	Average	Standard deviation
Conflict management	3.56	0.827
Decision-making	3.67	0.869
Troubleshooting	3.16	1,017

Uncertainties	3.74	0.958
Thinkingprospectively	4.04	0.793
Take advantage of economic opportunities	4.01	0.861
Applicationofknowledge	3.83	0.888
Thinkcreativelyandcritically	4.12	0.749
Creation and use of tools	3.26	1,064
Reflectiononvalues	3.95	0.988
Good oral and written communication	4.00	0.797
InformationDisclosure	3.38	1,052
Use of ICT	3.84	0.883
Aimtoalwayslearn	4.74	0.506
Collaborativelearning	4.40	0.720
Cooperation networks	2.76	1,212
Partnerships	2.71	1,227
Work in group	3.07	1,162
Cooperationwithheterogeneousgroups	3.36	1,176
Multidisciplinaryworkenvironment	3.94	1,002
Peace searchthe world	4.49	0.801
Sympathy / solidarity	4.38	0.658
Motivatingyourselfandothers	4.15	0.764
Educatingpeople	3.64	0.995

Source: research data

To analyze the items answered based on the *Likert* scale from 1 to 5, was considered satisfactory an average above 4.0 and below 3.0 unsatisfactory. It is noticed that the following competencies showed lower average: *Create networks of cooperation for sustainable development* (2.76) and establish partnerships to promote sustainable development (2.71).

The following skills stood out in the survey: *I always aim to keep learning* (4.74); Seek peace in the world (4.49); Looking for a collaborative learning (4.40); I am sympathetic /sympathetic/put myself in place of the other (4.38); Motivating yourself and others (4.15); Think creatively and critically (4.12); I think prospectively (4.04); Take economic opportunities to improve the livelihoods and quality of life (4,01).

In addition to the items of the pair construct Competencies for sustainability, they were made6 questions which were established by Likert scale of 1 to 10. The first question was: "*In general, which is the contribution of university training (development) of the powers described above?*" With regard to the contribution of university training (development) of the described skills, grades 5-9 had higher frequency responses, and note 8 that had the highest rate (19.13%). Footnote 10 was assigned by 8.20% of respondents.

The second question was: "Evaluate your participation in specific courses on sustainability offered by the University." With regard to the server's participation in specific courses on sustainability offered by the University, 35.70% of respondents attributed note 1, ie, the worst grade. This may mean that the university is not offering enough specific courses, or that the servers are not seeking such courses as they could / should.

The third question was "Evaluate your participation in actions / projects offered by the

University, focused on sustainability." In the same direction as the previous question, the participation of the server actions / projects offered by the University, focused on sustainability, the majority of respondents (25.87%) attributed note 1, reflecting that there is still no effective awareness that can be both institutionally and in terms of servers.

The fourth question was: "Evaluate whether sustainability was addressed on content (consumption, energy, water, waste, equity, etc.), considering your training." As for the content approach to sustainability (consumption, energy, water, waste, equity, etc.) in training, the higher frequency range of the respondents (17.49%) was also related to a lower note. The institution may, therefore, focus more on these issues in its training courses, while also promoting more research that attempts to identify the needs of servers specifically related to sustainability, since according to Jain and Pant (2010) the main concerns in environmental management in university systems are energy consumption, waste management, pollution prevention and resource conservation.

The fifth question was: "Evaluate your degree of concern (commitment) to sustainability." In regard to the degree of server's concern (commitment) with the sustainability, the best results (24.41%, 20.22% and 28.05%) were between grades 8, 9 and 10, respectively. Although there is no involvement between the courses and the institution's projects, the servers are understood to be committed to sustainability. This is extremely relevant, because it is through the people that the institution acts. According Lozano et al. (2015) committed universities tend to engage more in the implementation of sustainable development in comparison to uncommitted ones.

The last question was "How do you realize that the University is Green (Sustainable)" As for the perception of the servers in relation to the University being Green (Sustainable), little is note that it is a sustainable university, whereas notes 4-8 had the highest frequencies but note 9 received 7.65% of responses and note 10 received 6.56%.

From the results, we note that there is an effort by the university to provide an institutional form of contribution policies (sustainable logistics management plan, Environmental Planning Commission and Training Needs Assessment). However, this effort is still insufficient, according to the answers (negatives) related to participation in courses / projects / actions / content addressed related to sustainability. This need for capacity building through institutional commitment is very relevant in a green university building context; servers have the perception of the importance of programs / projects / actions towards sustainability. It is up to the institution to promote and develop practices involving the subject and servers.

Competencies for sustainability has brought a focus mainly on learning (hereinafter always learning, collaborative learning). Those powers end up strengthening items such as: application of knowledge, oral and written communication, use of information and communication technologies, information dissemination, creation and use of tools, which did not show such high averages, but they are appropriate to the learning context and the dissemination of knowledge for sustainability. This becomes quite relevant in an educational and training environment. Cebrian, Grace and Humphris (2015) confirms that the lack of understanding and knowledge of sustainability is one of the main challenges faced by academics in engaging with Sustainable Development.

The search for peace, solidarity / empathy and motivation are skills that have proved themselves relevant in the analyzed context due to its broad concepts that are responsible for encouraging other skills such as awareness of people, work together in multidisciplinary environment, cooperation with heterogeneous groups, reflection on values, conflict management, decision making, the uncertainty of the environment and problem solving.

There is still a lack the collective consciousness of the servers whose responses were analyzed. It is necessary to focus on creating networks of cooperation and partnerships for sustainability. This can be done under institutional approach, since demand the union and the work of several people, preferably from various levels.

Against the backdrop of responses and characterization skills for sustainability, there was the need for greater institutional commitment through policies and actions to ensure the participation of all in order to take advantage of individual skills for sustainability in building a green university. For Dagiliute, Liobikiene and Minelgaite (2018) it is very important that being green not be in declaration only.

5 FINAL

Sustainability has gained more space in the discussions about the future of the planet. Nevertheless, little is actually being done to change the fact that natural resources are increasingly running out, and future generations are possibly getting impaired survival.

Based on the concern with sustainability, it is necessary to promote competencies that seek to effectively reach an overview of thoughts, knowledge, attitudes that demonstrate the commitment of ideology with the future of the planet, not only in environmental terms, but in terms of values aimed for a better society in all contexts. In this sense, demonstrating the need to study the skills for sustainability, this study sought to identify the competencies for sustainability of the public servers of a Brazilian Public University in order to better understand the skills necessary to achieve sustainability in higher education institutions, since the HEIs are the professional training centres of future citizens as well as discussions about the environmental and economic problems.

Two competencies to the sustainability of public servers showed the lowest average responses: *I create networks of cooperation for sustainable development* and *I establish partnerships to promote sustainable development*, showing that they are skills that contribute less to transform the analyzed institution in a Green University. Moreover, *I think prospectively*; *I take economic opportunities to improve livelihoods and quality of life*; *I think creatively and critically; I always want to keep learning; I seek a collaborative learning; I am sympathetic /I know put myself in the place of others*; *I motivate myself and others* and *Seek peace in the world* are the skills of the servers that contribute most to the construction of a Green University.

One can see, based on the results of the research, that the skills for sustainability that stood out are more focused on the individual level and the collective skills on how to create networks of cooperation and partnerships for sustainable development, evidenced in second plan. The effort of the analyzed institution to remedy this gap may be based on institutional actions that seek to promote and encourage collective sustainable practices through programs, projects and training courses and sustainable education. Institutionally, the university can promote and encourage training courses on education and sustainable management, developing announcements that value stocks and interdisciplinary projects for sustainability and structuring of a sector that manages the environmental issues at a strategic level.

It is hoped that this paper can be used as a starting point for future studies that aim to deepen the effects of competencies for sustainability in building greener universities. Especially by the HEIs they refer to organizations with specific characteristics that require a systematic and thorough effort to highlight their specificities, demanding a specific and differentiated organizational design of other organizations. Also, this paper can assist the Public Institutions of Higher

Education to improve their daily lives, their surroundings, thinking of the whole, overall, doing thus prosper broadest sense of the issue at hand which is to improve the life of every society and planet we live on.

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