

# Identification of Social and Affective Aspects of Socio-Affective Competence Resilience of Students in Higher Education in a Virtual Learning Environment

## *Identificação dos Aspectos Sociais e Afetivos da Competência Socioafetiva Resiliência de Discentes no Ensino Superior em Ambiente Virtual de Aprendizagem*

ISSN 2177-8310  
DOI: 10.18264/eadf.v14i1.2269

Rafael Leonardo VIVIAN<sup>1,2\*</sup>  
Leticia Sophia Rocha MACHADO<sup>1</sup>  
Patricia Alejandra BEHAR<sup>1</sup>

<sup>1</sup>Federal University of Rio Grande do Sul. Av. Paulo Gama, 110 – Porto Alegre – RS – Brasil.

<sup>2</sup>Federal Institute of Santa Catarina. Rua Cruz e Souza, 89 – Fraiburgo – SC – Brasil.

\*[rafael.vivian@ifc.edu.br](mailto:rafael.vivian@ifc.edu.br)

### Abstract

The aim of this paper is to identify the social and affective aspects of the socio-affective competence resilience of higher education students in a virtual learning environment. Adapting to new environments and emotional and social demands make evident the need for students to construct socio-affective competences in the face of academic adversities. However, it is essential to investigate what are the social and affective aspects that can impact on construction of student resilience. To achieve this purpose, an assessment was conducted with experts in socio-affective competences, covering 119 items from seven scales and questionnaires of resilience, along with an elements set of knowledge, skills and attitudes with this competence. Thus, the findings revealed the importance of affective and social aspects: confidence, effort, excited, enthusiasm, interest, serenity, accomplishment, hope, satisfied, pride, openness, independence and collaboration. Therefore, these results provide a comprehensive view of the aspects that can influence the construction of socio-affective competence, particularly resilience, emphasizing the interconnection of these indicators and their importance for students to face the adversities arising from the relationships established in the virtual learning environment.

**Keywords:** Higher education. Virtual learning environment. Socio-affective competences. Resilience.



Received: 15/02/2024  
Accepted: 12/04/2024  
Publicado: 17/04/2024

### HOW TO CITE THIS PAPER

**ABNT:** VIVIAN, R. L.; MACHADO, L. S. R.; BEHAR, P. A. Identificação dos Aspectos Sociais e Afetivos da Competência Socioafetiva Resiliência de Discentes no Ensino Superior em Ambiente Virtual de Aprendizagem. **EaD em Foco**, v. 14, n. 1, e2269, 2024.  
DOI: <https://doi.org/10.18264/eadf.v14i1.2269>.

## **Identificação dos Aspectos Sociais e Afetivos da Competência Socioafetiva Resiliência de Discentes no Ensino Superior em Ambiente Virtual de Aprendizagem**

### *Resumo*

*O objetivo deste artigo é identificar os aspectos sociais e afetivos da competência socioafetiva resiliência em discentes do ensino superior em ambiente virtual de aprendizagem. À medida que os estudantes enfrentam adversidades acadêmicas, adaptação a novos ambientes e demandas emocionais e sociais, torna-se evidente a necessidade de construir competências socioafetivas. Contudo, é fundamental investigar quais são os aspectos sociais e afetivos que podem impactar na construção da resiliência do estudante. Para alcançar tal propósito, foi realizada uma avaliação com especialistas em competências socioafetivas e educação a distância, abrangendo 119 itens de sete escalas e questionários de resiliência, juntamente com o conjunto dos elementos de conhecimentos, habilidades e atitudes dessa competência. Desse modo, os resultados revelaram a importância dos aspectos afetivos e sociais: confiança, esforço, animação, entusiasmo, interesse, serenidade, realização, esperança, satisfação, orgulho, abertura, independência e colaboração. Logo, esses resultados fornecem uma visão abrangente dos aspectos que podem influenciar a construção da competência socioafetiva resiliência, enfatizando a interconexão desses indicadores e sua importância para os estudantes enfrentarem as adversidades oriundas das relações estabelecidas em ambiente virtual de aprendizagem, especialmente na educação a distância.*

**Palavras-chave:** *Ensino superior. Ambiente virtual de aprendizagem. Competências socioafetivas. Resiliência.*

## 1. Introduction

This article deals with the social and affective aspects that can have an impact on building the socio-affective competence (SAC) of resilience in higher education students in a virtual learning environment (VLE). This competence stands out as an essential element to support students, given that the higher education scenario is constantly evolving, driven by technological transformations and changes in teaching and learning methods.

These changes in the educational context impose challenges on students during their academic careers (Besser; Flett; Zeigler-Hill, 2022), since the demands are becoming more and more demanding, leading them to have to assimilate large volumes of content and deal with an accelerated pace of learning (Mohammed et al., 2022). In addition, with the advent of technology, students are not restricted to a specific time or geographical boundaries, which makes it possible for learning to take place anywhere and at any time (Behar, 2009). Thus, when distance learning (DE) is considered, subjects are required to adapt quickly to this type of teaching, online learning methodologies and technological tools (Ferreira; Mourão, 2020).

These transformations in higher education have had consequences for students, both academically and emotionally and socially, generating problems related to depression, guilt, anxiety and isolation, which lead to loss of focus, demotivation, apathy and relationship difficulties (Williges, 2020). In addition, students can face difficulties when adapting to the VLE, which can intensify their dissatisfaction with online learning (Campos Filho et al., 2022).

In this context, affective and social aspects directly influence the learning process and students' well-being (Behar; Machado; Longhi, 2022). As they face academic pressures, adapting to new environments, reconciling work and study and emotional and social demands, the need for them to build socio-affective skills becomes evident. Therefore, knowledge, skills and attitudes related to affectivity and social interactions can influence an individual's well-being and mental health, impacting on their perception of themselves, as well as their ability to build relationships with other subjects and the object of knowledge (Behar; Machado; Longhi, 2022).

Considering the context, it is essential for students to be resilient in order to overcome challenges, improve their well-being and achieve academic success (Ang et al., 2021). Thus, resilience refers to the individual's ability to adapt to adversity, understand experiences, control stressors, maintain balance and overcome academic difficulties (Van Kessel et al., 2022).

VLEs have functionalities that are important sources for inferring the social, affective, symbolic and behavioral aspects of subjects (Behar, 2013). In this sense, the VLE called Cooperative Learning Network (Rooda) has constructivist principles, based on the interactionist epistemological concept of Piaget (1973). This environment has resources that allow synchronous/asynchronous interaction, communication and cooperation during learning, as well as valuing group production, enabling the construction of knowledge through exchanges between subjects (Akazaki et al., 2019). In this way, synchronous (chat) and asynchronous (forum, logbook and contacts) communication tools support the discussions and interactions that are part of the construction of knowledge, allowing the identification of indicators to recognize the affective and social aspects of students in this environment.

Therefore, this research aims to identify the social and affective aspects that can influence the construction of resilience in higher education students in VLE. It contributes to the investigation of affective phenomena and social interactions that are related to the student's ability to cope with difficulties arising from ordinary or unexpected problem situations during the relationships established in distance education.

This article is organized as follows: in addition to this introduction, section 2 describes the methodological procedures of the research, section 3 presents the results obtained, the fourth section discusses them and, finally, the fifth section presents the conclusions.

## 2. Methodology

This research is of an applied nature, with a qualitative and quantitative approach, using exploratory research. The target audience is made up of specialists in socio-affective competences, with experience in distance education in higher education in Brazil. The data collection instrument was a framework for assessing knowledge, skills and attitudes (KSA) and the social and affective aspects of resilience. In order to achieve the objective of this study, the methodology used had four stages: (1) selection of the resilience assessment instruments; (2) evaluation of the KBAs and the social and affective aspects by the experts; (3) analysis of the data and (4) definition of the relative weight and identification of the social and affective aspects of the resilience CSA.

Stage 1 consisted of selecting the resilience instruments, based on a systematic review of the literature on scales and questionnaires for assessing student resilience in higher education, carried out by Vivian et al. (2024). This review presents 23 resilience instruments. Therefore, in order to select the instruments for evaluation by the experts, four parameters were defined: (i) applied in Brazil; (ii) originally created for the field of education; (iii) highest number of citations in the systematic literature review and (iv) highest Cronbach's alpha.

Stage 2 consisted of the experts evaluating the CHA and the social and affective aspects. To this end, the items from the scales and questionnaires selected in the previous stage were organized into an evaluation framework. Thus, four experts in the field of HAC and distance learning carried out analyses to classify the HAC and the social and affective aspects of each of the items of these instruments selected in the previous stage. In addition, the HAC items for CSA resilience, defined by Oliveira (2022), were also included in this table. The experts evaluated each item in the instruments in two ways: (i) defining them as knowledge, skills and/or attitudes, and (ii) identifying their respective social and/or affective aspects. The experts were previously informed about the research and signed an informed consent form (ICF).

Stage 3 consisted of data analysis: the responses (HFA, social and affective aspects) were analyzed and classified in tables according to the experts' scores for knowledge, skills and attitudes. The items in the scales and questionnaires that were rated "not applicable" for the CHA were excluded from the tables and were not counted. In addition, the social and affective aspects that were not fully indicated by the experts were excluded.

Stage 4 consisted of defining the relative weight and identifying the social and affective aspects of the resilience CSA. To this end, the number of indications from the experts was called the weight (P). Thus, the relative weight (Pr) of the social/affective aspect *i* was calculated by taking the P of each *i* and the highest P among all the aspects, according to equation 1.

$$Pr_i = \frac{P_i}{P_{maior}}$$

Then, with Pr being the relative weight of aspect *i*, the average relative weight (MPr) was calculated according to equation 2.

$$MPr = \frac{\sum_{i=1}^n Pr_i}{n}$$

Therefore, based on the values presented, the MPr was obtained by adding the Pr of each aspect *i* divided by the number (n) of social and affective aspects considered. In order to identify the social and affective aspects considered significant for CSA resilience, the social and affective aspects with Pr greater than or equal to MPr were considered.

### 3. Results

Based on the systematic review of the literature on scales and questionnaires for assessing student resilience in higher education, carried out by Vivian et al. (2024), the parameters defined in step 1 were applied. Seven instruments were then selected, as shown in Table 1.

**Table 1:** Selected resilience assessment instruments

Parameter	Scale/questionnaire
Applied in Brazil	Psychological Capital Scale in the Student Context (PsyCap-E-resilience) (Matos; Andrade, 2021)
Originally created for education	Academic Resilience Scale (ARS-30) (Cassidy, 2015)
	Academic Resilience Scale (Martin; Marsh, 2006)
	Academic Pharmacy Resilience Scale 16 (APRS-16) (Chisholm-Burns et al., 2019)
	Resilience at University Scale (RAU) (Turner; Holdsworth; Scott-Young, 2017)
Highest number of citations	25-item Connor-Davidson Resilience Scale (CD-RISC-25) (Connor; Davidson, 2003)
Higher Cronbach's alpha	Virtual Class Affection Perceptions, Problems, Resiliency, and Self-image Questionnaire (APPRSQ-resiliency) (Assi; Rashtchi, 2022)

Source: prepared by the authors.

Next, the items of the seven selected instruments and the HAC of the resilience CSA (Oliveira, 2022) were organized into an evaluation table containing 119 items, which was sent to the CSA specialists. The responses (CHA, social and affective aspects) from four experts in HCS and DE were collected and then analyzed and classified in tables, according to the professionals' notes on the dimensions of knowledge, skills and attitudes.

**Table 1** shows the number of social and affective aspects indicated by the experts in the Knowledge dimension.

**Table 1:** Social and affective aspects of resilience pointed out in the Knowledge dimension

Social and emotional aspects - Knowledge	Quantity
Affective aspect > Motivational factor > Effort	6
Affective aspect > Personality trait > Openness	6
Affective aspect > Motivational factor > Trust	5
Affective aspect	4
Affective aspect > Affective family > Interest	4
Affective aspect > Affective family > Pride	4
Affective aspect > Affective family > Hope	3
Affective aspect > Affective family > Serenity	3
Affective aspect > Motivational factor	3
Affective aspect > Personality trait	3
Affective aspect > Personality trait > Achievement	3
Social aspect	3
Affective aspect > Emotion	2
Affective aspect > Mood > Cheerful	2
Social aspect > Social interaction > Collaboration	2
Affective aspect > Emotion > Anger	1
Affective aspect > Emotion > Sadness	1
Affective aspect > State of mind	1

Social and emotional aspects - Knowledge	Quantity
Affective aspect > State of mind > Dissatisfied	1
Affective aspect > State of mind > Satisfied	1
Affective aspect > Affective family	1
Affective aspect > Affective family > Enthusiasm	1
Aspecto afetivo > Fator motivacional > Independência	1
Affective aspect > Personality trait > Neuroticism	1
Social aspect > Social interaction	1

Source: prepared by the authors.

**Table 2** shows the number of social and affective aspects indicated by the experts in the Skills dimension.

**Table 2:** Social and affective aspects of resilience pointed out in the Skills dimension

Social and affective aspects - Skills	Quantity
Affective aspect > Motivational factor > Trust	22
Affective aspect	16
Affective aspect > Mood > Cheerful	14
Affective aspect > Affective family > Serenity	13
Affective aspect > State of mind > Satisfied	12
Affective aspect > Motivational factor > Effort	9
Affective aspect > Affective family > Interest	8
Social aspect	8
Affective aspect > Affective family > Enthusiasm	7
Affective aspect > Affective family > Hope	7
Affective aspect > Motivational factor	7
Affective aspect > Personality trait	7
Affective aspect > Personality trait > Achievement	7
Affective aspect > Motivational factor > Independence	6
Affective aspect > Affective family > Pride	5
Social aspect > Social interaction > Collaboration	4
Affective aspect > State of mind	2
Affective aspect > Affective family	2
Affective aspect > Personality trait > Openness	2
Social aspect > Social interaction > Popularity	2
Affective aspect > Emotion	1
Affective aspect > Affective family > Satisfaction	1

Social and affective aspects - Skills	Quantity
Affective aspect > Personality trait > Socialization	1
Social aspect > Social interaction	1
Social aspect > Social interaction > Informal groups	1

Source: prepared by the authors.

**Table 3** shows the number of social and affective aspects indicated by the experts in the Attitudes dimension.

**Table 3:** Social and affective aspects of resilience indicated in the Attitudes dimension

Social and affective aspects - Attitudes	Quantity
Affective aspect	46
Affective aspect > Motivational factor	44
Affective aspect > Motivational factor > Trust	32
Affective aspect > Personality trait	24
Social aspect	24
Affective aspect > Motivational factor > Effort	18
Affective aspect > Affective family > Enthusiasm	16
Affective aspect > Mood > Cheerful	15
Affective aspect > Personality trait > Achievement	10
Affective aspect > Affective family > Hope	9
Affective aspect > Affective family > Interest	8
Social aspect > Social interaction	8
Affective aspect > Affective family > Pride	7
Affective aspect > Personality trait > Openness	6
Affective aspect > State of mind > Satisfied	5
Affective aspect > Affective family > Satisfaction	4
Affective aspect > Affective family > Serenity	4
Affective aspect > State of mind	3
Affective aspect > Mood > Discouraged	3
Affective aspect > State of mind > Dissatisfied	3
Affective aspect > Motivational factor > Independence	3
Affective aspect > Affective family	2
Affective aspect > Affective family > Joy	2
Affective aspect > Affective family > Contempt	2
Affective aspect > Emotion > Joy	1
Affective aspect > Emotion > Aversion	1
Affective aspect > Emotion > Fear	1
Affective aspect > Emotion > Anger	1

Social and affective aspects - Attitudes	Quantity
Affective aspect > Emotion > Sadness	1
Affective aspect > Affective family > Guilt	1
Affective aspect > Affective family > Fear	1
Affective aspect > Affective family > Sadness	1
Affective aspect > Personality trait > Extroversion	1
Social aspect > Social interaction > Collaboration	1
Social aspect > Social interaction > Distancing from the class	1

Source: prepared by the authors.

Next, the quantities of each social and affective aspect in Tables 1, 2 and 3 were grouped together, excluding the social and affective aspects that were not fully indicated by the experts. Finally, the number of indications made by the experts was called the weight (P), as shown in Table 4.

The  $P_r$  of social/affective aspect  $i$  was calculated by taking the highest  $P$  among all the aspects (in this case, "59") and the  $P$  of each  $i$ , according to equation 1 (defined in Section 2). Table 4 shows the results of the relative weights of each social and affective aspect  $i$ .

**Table 4:** Social and affective aspects of resilience and their respective relative weights

Social and affective aspects - Knowledge, Skills and Attitudes	Weight	Relative weight
Affective aspect > Motivational factor > Trust	59	1,00
Affective aspect > Motivational factor > Effort	33	0,56
Affective aspect > Mood > Cheerful	31	0,53
Affective aspect > Affective family > Enthusiasm	24	0,41
Affective aspect > Affective family > Interest	20	0,34
Affective aspect > Affective family > Serenity	20	0,34
Affective aspect > Personality trait > Achievement	20	0,34
Affective aspect > Affective family > Hope	19	0,32
Affective aspect > Mood > Satisfied	18	0,31
Affective aspect > Affective family > Pride	16	0,27
Affective aspect > Personality trait > Openness	14	0,24
Affective aspect > Motivational factor > Independence	10	0,17
Social aspect > Social interaction > Collaboration	7	0,12
Affective aspect > Affective family > Satisfaction	5	0,08
Affective aspect > State of mind > Dissatisfied	4	0,07
Affective aspect > Mood > Discouraged	3	0,05
Affective aspect > Emotion > Anger	2	0,03
Affective aspect > Emotion > Sadness	2	0,03
Affective aspect > Affective family > Joy	2	0,03
Affective aspect > Affective family > Contempt	2	0,03
Social aspect > Social interaction > Popularity	2	0,03

Social and affective aspects - Knowledge, Skills and Attitudes	Weight	Relative weight
Affective aspect > Emotion > Joy	1	0,01
Affective aspect > Emotion > Aversion	1	0,01
Affective aspect > Emotion > Fear	1	0,01
Affective aspect > Affective family > Guilt	1	0,01
Affective aspect > Affective family > Fear	1	0,01
Affective aspect > Affective family > Sadness	1	0,01
Affective aspect > Personality trait > Socialization	1	0,01
Affective aspect > Personality trait > Extroversion	1	0,01
Affective aspect > Personality trait > Neuroticism	1	0,01
Social aspect > Social interaction > Distancing from the class	1	0,01
Social aspect > Social interaction > Informal groups	1	0,01

Source: prepared by the authors.

The average relative weight was then calculated according to equation 2 (defined in section 2). Thus, based on the values shown in Table 5, the MPr was obtained by adding the Pr of each aspect *i* (in this case, "5.49") divided by the number *n* of social and affective aspects considered (in this case, "32"). Therefore, the MPr was "0.17".

Only the social and affective aspects with a Pr greater than or equal to "0.17" were considered, resulting in 12 aspects considered significant for the resilience CSA. However, they only included affective aspects, which is why it was considered relevant to include the social aspect with the highest Pr, resulting in 13 social and affective aspects, as shown in Figure 1.

Figure 1: Social and affective aspects considered significant for CSA resilience



Source: prepared by the authors.

The results obtained from the experts' assessment of the social and affective aspects of resilience CSA reveal that these aspects, shown in Figure 1, are the most significant for students to build this competence in the Rooda VLE. In this way, the student will be able to cope with difficulties arising from ordinary or unexpected problem situations arising from the relationships established in distance learning.

#### 4. Discussion

The aim of this study was to identify the significant social and affective aspects of CSA resilience in higher education students in VLEs. Based on the data collected through an evaluation carried out by experts in CSA, which covered the items of seven scales and questionnaires of resilience, together with the CHA of CSA resilience (Oliveira, 2022), the significant aspects of this competence were identified. These are: confidence, effort, excitement, enthusiasm, interest, serenity, achievement, hope, satisfaction, pride, openness, independence and collaboration. These results provide an understanding of the social and affective aspects that can influence student resilience in the context of higher education in the Rooda VLE. Therefore, the results of this research show that the social and affective aspects identified as significant for CSA resilience in students in VLE higher education are intrinsically related to their ability to face challenges, adapt to change and persist in the face of difficulties.

The motivational factor confidence reflects the student's belief in their own abilities, while effort and excited state represent their motivation and dedication to persist in achieving their academic goals. In this sense, Macakova and Wood (2022) point out that self-confidence contributes to the academic self-efficacy factor, which influences academic success and is shaped by previous learning experiences. Yang et al. (2023) emphasize that effort contributes significantly to student motivation and academic performance.

The affective families enthusiasm and interest demonstrate the student's active involvement in learning activities, while serenity portrays their ability to deal with imbalances and pressure in a calm manner. In this context, Liu and Bi (2023) present a model of enthusiasm recognition based on the differences in behavior between students with and without learning enthusiasm. Harackiewicz, Smith and Priniski (2016) show that interest is an indicator that motivates, guides academic and professional trajectories and is therefore essential for academic success. Meanwhile, Kennett, Quinn-Nilas and Carty (2021) indicate that academic stress is associated with low resilience if students have a lower perception of control, suggesting the importance of serenity.

The personality trait achievement and the affective family hope are linked to the student's perception of their progress and future prospects regarding academic activities, while the satisfied state of mind and the affective family pride reflect the positive evaluation of their own performance. From this perspective, Pérez-Ríos et al. (2023) describe that students' perception of their progress is positively associated with their academic performance. Gallagher, Marques and Lopez (2017) highlight the role of hope in predicting the performance and retention of university students, pointing out the need to help them develop the ability to initiate and maintain the pursuit of their goals. Loder, Brandweiner and Wood (2024) emphasize that student satisfaction explains the variation in their grade point average and the number of failures, indicating a significant impact on academic performance. Buechner, Stahn and Murayama (2019) indicate that academic performance is positively associated with pride, linked to goals of self-improvement, values of personal fulfillment, as well as motivations of success and belonging.

The personality trait openness, the motivational factor independence and social interaction collaboration show the student's willingness to live new experiences, adapting to the demands and resources of the VLE in an autonomous and collaborative way. In this sense, Otaki et al. (2022) point out that students' adaptability to new and uncertain situations is a crucial factor that influences their willingness to live new

academic experiences. Martin, Ginns and Collie (2023) show that adaptability is associated with greater student self-efficacy, suggesting that independence can have a positive impact on their ability to adapt to the demands and resources of a VLE. Finally, Rivas Alberti and Espinoza (2023) indicate that student collaboration has an impact on their adaptability, promoting active participation, interactivity and the development of interpersonal skills.

The results of this study contribute to the field of distance education, filling a research gap by highlighting the social and affective aspects of students' resilience in VLEs. In this way, the work presents a new perspective on the construction of this competence in a virtual environment, and the aspects pointed out here are essential for understanding how students face the challenges of academic life, adapting to changes and persisting in the face of difficulties in the context of virtual learning.

The resilience of students in this environment has been addressed in research that highlights the importance of indicators such as confidence (Primasari et al., 2022), effort (Menéndez-Aller et al., 2021) and interest (Nurtjahjanti; Prasetyo; Ardhiani, 2021). They have been associated with the ability to deal with challenging situations, better academic performance and a willingness to learn, meaning that resilience is understood to be fundamental in distinguishing between success and failure in students' learning experiences (Dereshiwsky, 2021). In this way, the results presented are in line with the works cited, reinforcing the robustness of these aspects in relation to CSA resilience.

However, the identification of significant social and affective aspects of students' CSA resilience in VLE higher education has still not been explored in depth. Although previous studies have addressed some indicators, there is still a need to explore them, as pointed out in this work, in the context of VLE higher education. In addition, this research highlights the interconnection of the aspects identified as a fundamental set in the construction of CSA resilience.

Thus, this study also identified aspects that have not been explored in previous studies in the context of VLE and which can positively influence students' ability to face academic challenges and adapt to the virtual environment. A cheerful state of mind and the affective families enthusiasm and serenity stood out as significant factors for CSA resilience. The inclusion of these affective aspects highlights the importance of considering, in addition to intrinsic motivation and confidence, positive emotions and the ability to cope with imbalances and pressure in the academic environment, especially in VLEs. In addition, collaboration and independence stood out as relevant aspects for student resilience in higher education. These results suggest that students' social interaction with their peers in VLE plays a fundamental role in building this CSA. They are consistent with the characteristics of the Rooda VLE in relation to the aspects of collaboration and independence, from which students have the opportunity to be autonomous, cooperative, interactive and active participants in learning.

In short, the results of this investigation revealed that the resilience CSA is made up of a combination of affective and social aspects that are significant in VLE higher education students. This set allows for a more comprehensive view, highlighting the interconnection and influence of these indicators in building this competence. Understanding the factors that impact on building student resilience in the context of the virtual environment can enable teachers to create more effective learning strategies (Dereshiwsky, 2021). Therefore, these aspects must work together for students to cope with the difficulties arising from the relationships established in distance education through VLE, as pointed out by Behar, Machado and Longhi (2022).

## 5. Conclusion

The aim of this research was to identify the significant social and affective aspects of CSA resilience in higher education students in VLEs. To this end, an assessment was carried out by experts in CSA, covering 119 items from seven scales and resilience questionnaires, together with the HACs of this competence. The results revealed the importance of affective and social aspects in student life, as they are significant for the student to build resilience, facing challenges, persisting in the face of difficulties and adapting to changes in the academic context.

Among these aspects, the motivational factors of trust and effort were shown to be the most important for students to build resilience; the social aspect of collaboration and the affective aspect of independence were also identified as relevant. This social interaction and motivational factor of students in the VLE are fundamental in building this competence, allowing students to be autonomous, cooperative and active participants in the learning process. These results provide a comprehensive view of what influences the construction of students' resilience CSA in VLE higher education, highlighting the interconnection of these indicators and their importance for them to face the adversities arising from the relationships established in distance education.

This work was carried out by collecting data from four experts in CSA and distance learning. It is understood that the inclusion of other forms of data collection, such as interviews with students, could offer a more comprehensive perspective on the social and affective aspects of resilience. In addition, the focus on students from other teaching modalities and/or educational levels may present different dynamics in relation to resilience, suggesting that future investigations consider different educational contexts.

It is therefore hoped that the results published in this article will contribute to future research into the resilience of higher education students in VLEs. Identifying the social and affective aspects that are considered significant for building this competence can help implement more effective teaching practices. In this way, it will be possible to consider, in addition to the student's academic performance, their social and affective aspects during interaction in the VLE. In addition, the development of educational technologies in VLEs that promote social interaction and affectivity could create learning environments that are more welcoming and conducive to the integral development of students.

## Biodata and author contacts



**VIVIAN, R. L.** is a professor at the Federal Institute of Santa Catarina, Fraiburgo campus. He is a PhD candidate in the Postgraduate Program in Informatics in Education at the Federal University of Rio Grande do Sul. He completed his master's degree at the State University of Maringá. His research interests include Informatics in Education, Computerized Environments and Distance Learning, Affective Computing and Socio-Affective Skills. He is a researcher at the Center for Digital Technology applied to Education (Nuted/UFRGS).

**ORCID:** <https://orcid.org/0000-0003-0021-1978>

**E-mail:** [rafael.vivian@ifc.edu.br](mailto:rafael.vivian@ifc.edu.br)



**MACHADO, L. S. R.** is a professor at the Faculty of Education (Faced), the Graduate Program in Education (PPGEdu) and the Graduate Program in Informatics in Education (PPGIE) at the Federal University of Rio Grande do Sul. He completed his doctorate in Education and Informatics in Education at the Federal University of Rio Grande do Sul. Her research interests include socio-affective competences, educational gerontology and pedagogical architectures in distance education. She is a researcher at the Center for Digital Technology applied to Education (Nuted/UFRGS) and coordinator of the Digital Inclusion Unit for the Elderly (Unidi/UFRGS).

**ORCID:** <https://orcid.org/0000-0003-4102-2225>

**E-mail:** [leticiamachado@gmail.com](mailto:leticiamachado@gmail.com)



**BEHAR, P. A.** is a professor at the Faculty of Education (Faced), the Postgraduate Program in Education (PPGEdu) and the Postgraduate Program in Informatics in Education (PPGIE) at the Federal University of Rio Grande do Sul. He completed his PhD in Computing at the Federal University of Rio Grande do Sul. Her research interests include socio-affective competences, pedagogical architectures, pedagogical models, competences in distance education and pedagogical recommendation in distance education. She is the coordinator of the Center for Digital Technology applied to Education (Nuted/UFRGS).

**ORCID:** <https://orcid.org/0000-0001-6939-5678>

**E-mail:** [pbehar@terra.com.br](mailto:pbehar@terra.com.br)

## Bibliographical references

AKAZAKI, J. M. *et al.* Criação de funcionalidades no ROODA: um foco nos aspectos socioafetivos em ambientes virtuais de aprendizagem. *In: WORKSHOP DE DESAFIOS DA COMPUTAÇÃO APLICADA À EDUCAÇÃO*, 8., 2019, Brasília, DF. **Anais [...]**. Brasília, DF: SBC, 2019. p. 37-39.

ANG, W. H. D. *et al.* The role of resilience in higher education: a meta-ethnographic analysis of students' experiences. **Journal of Professional Nursing**, v. 37, n. 6, p. 1.092-1.109, 2021.

ASSI, E.; RASHTCHI, M. Virtual classes during covid-19 pandemic: focus on university students' affection, perceptions, and problems in the light of resiliency and self-image. **Asian-Pacific Journal of Second and Foreign Language Education**, v. 7, n. 1, p. 1-23, 2022.

BEHAR, P. A. **Modelos pedagógicos em educação a distância**. Porto Alegre: Artmed, 2009.

- BEHAR, P. A.; MACHADO, L. R.; LONGHI, M. T. Competências socioafetivas em ambientes virtuais de aprendizagem: uma discussão do conceito. **Renote: Novas Tecnologias na Educação**, Porto Alegre, v. 20, n. 1, p. 389-398, 2022.
- BEHAR, P. A. **Competências em educação a distância**. Porto Alegre: Penso, 2013.
- BESSER, A.; FLETT, G. L.; ZEIGLER-HILL, V. Adaptability to a sudden transition to online learning during the covid-19 pandemic: Understanding the challenges for students. **Scholarship of Teaching and Learning in Psychology**, v. 8, n. 2, p. 85, 2022.
- BUECHNER, V. L.; STAHN, V.; MURAYAMA, K. The power and affiliation component of achievement pride: antecedents of achievement pride and effects on academic performance. **Frontiers in Education**, v. 3, p. 1-10, 2019.
- CAMPOS FILHO, A. S. *et al.* O ensino remoto no curso de Medicina de uma universidade brasileira em tempos de pandemia. **Revista Brasileira de Educação Médica**, v. 46, n. 1, 2022.
- CASSIDY, Simon. Resilience building in students: the role of academic self-efficacy. **Frontiers in Psychology**, v. 6, p. 1.781, 2015.
- CHISHOLM-BURNS, M. A. *et al.* Development of an instrument to measure academic resilience among pharmacy students. **American Journal of Pharmaceutical Education**, v. 83, n. 6, 2019.
- CONNOR, K. M.; DAVIDSON, J. R. T. Development of a new resilience scale: the Connor–Davidson resilience scale (CD–RISC). **Depression and Anxiety**, v. 18, n. 2, p. 76-82, 2003.
- DERESHIWSKY, M. I. Resilience and its importance to online students. *In*: STEVENSON, C. N. (org.). **Enhancing higher education accessibility through open education and prior learning**. Pensilvânia: IGI Global, 2021. p. 67-92.
- FERREIRA, D. M.; MOURÃO, L. Panorama da educação a distância no ensino superior brasileiro. **Revista Meta: Avaliação**, v. 12, n. 34, p. 247-280, 2020.
- GALLAGHER, M. W.; MARQUES, S. C.; LOPEZ, S. J. Hope and the academic trajectory of college students. **Journal of Happiness Studies**, v. 18, p. 341-352, 2017.
- HARACKIEWICZ, J. M.; SMITH, J. L.; PRINISKI, S. J. Interest matters: the importance of promoting interest in education. **Policy insights from the behavioral and brain sciences**, v. 3, n. 2, p. 220-227, 2016.
- KENNETT, D. J.; QUINN-NILAS, C.; CARTY, T. The indirect effects of academic stress on student outcomes through resourcefulness and perceived control of stress. **Studies in higher education**, v. 46, n. 11, p. 2.460-2.472, 2021.
- LIU, W.; BI, S. Influence mechanism of students' learning enthusiasm based on educational big data. **International Journal of Emerging Technologies in Learning**, v. 18, n. 6, p. 96, 2023.
- LODER, A. K. F.; BRANDWEINER, A. C.; WOOD, G. M. O. Parallel enrollments: associations between college student satisfaction and performance. **Journal of College Student Retention: Research, Theory & Practice**, p. 1-29, 2024.
- MACAKOVA, V.; WOOD, C. What shapes academic self-efficacy? **Academic Self-efficacy in Education: Nature, Assessment, and Research**, p. 99-109, 2022.
- MARTIN, A. J.; GINNS, P.; COLLIE, R. J. University students in covid-19 lockdown: the role of adaptability and fluid reasoning in supporting their academic motivation and engagement. **Learning and Instruction**, v. 83, p. 1-10, 2023.

- MARTIN, A. J.; MARSH, H. W. Academic resilience and its psychological and educational correlates: a construct validity approach. **Psychology in the Schools**, v. 43, n. 3, p. 267-281, 2006.
- MATOS, F. R.; ANDRADE, A. L. de. Psychometric properties of the psychological capital scale in the student context (PsyCap-S). **Paidéia (Ribeirão Preto)**, v. 31, 2021.
- MENÉNDEZ-ALLER, A. *et al.* Resiliencia académica: la influencia del esfuerzo, las expectativas y el autoconcepto académico. **Revista Latinoamericana de Psicología**, v. 53, p. 114-121, 2021.
- MOHAMMED, T. F. *et al.* The experiences of undergraduates with depression in online science learning environments. **CBE – Life Sciences Education**, v. 21, n. 2, ar18, 2022.
- NURTJAHJANTI, H.; PRASETYO, A. R.; ARDHIANI, L. N. The role of resilience and readiness for change on students' interest in learning: e-learning implementation during covid-19. **Cakrawala Pendidikan**, v. 40, n. 3, p. 750-761, 2021.
- OLIVEIRA, A. W. **Competências socioafetivas em ambientes virtuais de aprendizagem**: um estudo com alunos de graduação. 2022. 198 f. Dissertação (Mestrado em Educação) – Programa de Pós-Graduação em Educação, Universidade Federal do Rio Grande do Sul, Porto Alegre, 2022.
- OTAKI, F. *et al.* Self-reported adaptability among postgraduate dental learners and their instructors: accelerated change induced by covid-19. **PLoS One**, v. 17, n. 7, p. 1-20, 2022.
- PÉREZ-RÍOS, R. *et al.* Orientation to the future and academic lag as predictors of academic performance of high school and University Students in Northwest Mexico. **Revista Electrónica Educare**, v. 27, n. 2, p. 170-186, 2023.
- PIAGET, J. **Estudios sociológicos**. Rio de Janeiro: Forense, 1973.
- PRIMASARI, I. *et al.* Validation of the Indonesian resilience evaluation scale in an undergraduate student population. **BMC Public Health**, v. 22, n. 1, p. 2.410, 2022.
- RIVAS ALBERTI, J.; ESPINOZA, A. Desarrollo de un proyecto de aprendizaje colaborativo en línea. El trabajo colaborativo y las tecnologías de información y comunicación. La perspectiva de la internacionalización. **Education & Law Review/Revista de Educación y Derecho**, n. 28, 2023.
- TURNER, M.; HOLDSWORTH, S.; SCOTT-YOUNG, C. M. Resilience at university: the development and testing of a new measure. **Higher Education Research & Development**, v. 36, n. 2, p. 386-400, 2017.
- VAN KESSEL, G. *et al.* A principle-based approach to the design of a graduate resilience curriculum framework. **Higher Education Research & Development**, v. 41, n. 4, p. 1.325-1.339, 2022.
- VIVIAN, R. L. *et al.* Resiliência de discentes no ensino superior: uma revisão sistemática da literatura sobre escalas de avaliação. **Concilium**, v. 24, p. 144-168, 2024.
- WILLIGES, F. As lições emocionais da covid-19. **Estadão**, São Paulo, 2 abr. 2020. Disponível em: <https://estadodaarte.estadao.com.br/licoes-emocionais-covid-19>. Acesso em: 14 maio 2024.
- YANG, L. *et al.* A Exploring the roles of academic self-concept and perseverance of effort in self-assessment practices. **Assessment in Education: Principles, Policy & Practice**, v. 30, n. 2, p. 104-129, 2023.