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# Students' Self-Efficacy and Resilience in An Online Environment in a Post-Pandemic

# Wiara studenta we własne możliwości i odporność na stress w środowisku "on-line" w okresie popandemicznym

## Abstract

Covid-19 has caused tremendous changes in all spheres of life, including education. Coronavirus has dramatically altered situation all over the globe. The pandemic has forced to switch education towards online teaching mode, where learning content was delivered both, **synchronously** and **asynchronously.** After the pandemic, it has become impossible to return to the same patterns of life

and studies as before. Hybrid teaching has become a reality in majority of higher institutions in many countries.

The aim of this study it to explore the aspects of efficacy in an online learning environment by building higher students' stress resilience in facing New Normal in a post-pandemic time.

Research methodology. For the purpose of this study the authors used a questionnaire to explore stress resilience and self-efficacy in an online learning environment in a post pandemic. New sentence: Additionally, they conducted focus group interviews to examine coping mechanisms for building greater stress resilience among students in higher education. It was concluded that online learning requires paradigm shift in education towards post-industrial model by focusing on learner-centred constructivist approaches in co-creating knowledge in a self-directed learning mode. The intention of the authors was to explore a potential of pedagogical approaches on how to apply complex design of an online learning environment to become more efficient.

**Key words:** *stress resilience, self-efficacy, self-directed process, learning environment as a complex adaptive system.*

## Abstrakt

Covid-19 spowodował ogromne zmiany we wszystkich sferach życia, w tym w edukacji. Koronawirus radykalnie zmienił sytuację na całym świecie. Pandemia wymusiła przejście edukacji na tryb nauczania online, w którym treści edukacyjne były dostarczane zarówno synchronicznie, jak i asynchronicznie. Po pandemii powrót do tych samych schematów życia i nauki, co przed pandemią, staje się niemożliwy. Nauczanie hybrydowe stało się rzeczywistością w większości uczelni wyższych w wielu krajach.

Celem tego badania jest ewaluacja aspektów skuteczności środowiska uczenia się online poprzez budowanie odporności uczniów na stres w obliczu Nowej Normalności w czasie po pandemii.

Metodologia badań. Na potrzeby tego badania autorzy wykorzystali kwestionariusz do zbadania odporności na stres i poczucia własnej skuteczności w środowisku uczenia się online po pandemii, a także przeprowadzili wywiady grupowe na temat mechanizmów radzenia sobie w celu budowania większej odporności na stres przez uczniów szkół wyższych. Stwierdzono, że nauczanie online wymaga zmiany paradygmatu w edukacji w kierunku modelu postindustrialnego poprzez skupienie się na konstruktywistycznym podejściu skoncentrowanym na uczniu, we współtworzeniu wiedzy w trybie samodzielnego uczenia się. Zamiarem autorów było zbadanie potencjału podejść

pedagogicznych w zakresie zastosowania złożonego projektu środowiska uczenia się online w celu zwiększenia jego efektywności.

**Słowa kluczowe:** *odporność na stres, poczucie własnej skuteczności, proces samokierowania, środowisko uczenia się jako złożony system adaptacyjny.*

## Introduction

The COVID -19 pandemic has brought about dramatic changes in all spheres of life, including education. It has also caused changes in lifestyles, and well-being in the circumstances of unknowing. These changes disrupted daily living and caused anxiety and stress among students and teaching staff. The pandemic has triggered a massive adoption of e-learning and caused a transition of the learning process to a remote mode in higher education. It has stimulated the growth of the virtual learning space in academia and has challenged the readiness of the educational system to cope with the new situation. (Fawaz & Samaha, 2020)

Due to the economic crises and the high costs of transportation and electricity in a post-pandemic reality many higher institutions in Latvia continue to pursue the teaching process in a hybrid format. However, a post-pandemic period has brought even higher anxiety and unknowing. Universities could not apply traditional ways of teaching but were challenged to design new models for teaching. After having implementing virtual instruction for almost two years, educators acknowledged a paradigmatic shift in education. Universities had to re-organize their technological infrastructure and to arrange professional development for teaching staff even by changing workplace culture and enhancing connectivity via technologies and virtual collaboration. (Martines-Sanchez et al, 2019) This new post-Covid reality fostered technology-enabled practice through the adoption of various technologies. (Khong, Celik, Le .et al., 2022) Consequently, this required teachers to acquire new competencies. Reform processes at all levels of education in Latvia also forced innovative transformations within the whole system towards competency-based teaching.

Universities were forced to reimagine new teaching approaches and models in the era of global uncertainty. After a cautious wave of optimism higher education could not continue with teaching "business as usual" but was forced to design innovative teaching methodologies. Many higher institutions continued online instruction and encountered a number of issues, such as how to address the needs of students who have difficulties, learning in a virtual space or who lack the necessary resources to engage in an on-line instruction. The post-pandemic

time has raised social, economic and environmental vulnerabilities, deepened digital divides and has raised inequality and equity concerns (SDG's 1-5). Among numerous concerns was the issue of unequal distribution of resources and opportunities, particularly among systemically excluded groups of students. Disparities in access to higher education became an urgent issue in a post-pandemic world as well. Some vulnerabilities existed before the pandemic but the pandemic brought them to the surface. The biggest impact of the pandemic can be related to the restrictions of socialization when students and staff members had to adapt to an online teaching while conducting research and collecting data which lowered the standards of quality assurance but at the same time encouraged sustainable practices, for example, by saving resources. The lower access to library resources also impacted students' quality of learning.

Changing requirements and reform processes in education have reinforced the need to rethink and redesign the learning environment. This has required designing alternative theories that better suit higher education, particularly complexity theories that explained the new reality in a more nuanced way. The online environment functions as a complex system involving multiple interactions between diverse actors in a non-linear way. The elements of these interactions, in the conditions of the New Normal, are far from equilibrium. Self-organization, emergency and co-evolution explain how students adapt and co-create new meanings in new circumstances. Boundaries, the importance of context, being on the edge of chaos are the key features of an online environment in post-pandemic circumstances. Every day we design and shape our world. Advancements in technologies offer us new tools and ways to approach changes. (Brown, 2007) The new design of an online environment requires a synergetic worldview and the acknowledgment of the interplay between different domains, dimensions, and systems, requiring holistic perspectives that can facilitate processes, and social skills in an online environment, as well as foster synergies at the intellectual and analytical levels, synergies in choosing resources, synergies at the interpersonal collaborative levels, and synergies at the somatic and emotional levels. (Wood, 2007) Higher education must train learners to act ethically, by developing high resilience and creative resources in responding to the complexities of the day. This requires educators to rethink traditional approaches and to theorize about complexity as a tool for approaching global dynamics in a learning context.

## Online Learning as Viewed from the Complexity Science Perspective

Paradigmatic changes in society and reforms in education require a re-evaluation of current models in education. The understanding of the core design of an online learning environment requires viewing it from the perspective

of complexity science by exploring all elements of the system in their dynamic interaction, where the components emerge through evolution and adaptation. (Wells, 2013) The online learning environment has all the features of complex systems, such as nonlinearity, feedback, networking, hierarchy, and emergence. (Holland, 1998) Self-organization can be viewed as the central feature of a system leading to a global structure emerging out of local interactions. (Heilighen, 2008) The online learning environment has the potential for a transdisciplinary learning in its ability to overcome the fragmentation of knowledge by transcending rigid lines of academic disciplines. (Lawrence & Despres, 2004) Due to features of the online environment, such as non-linearity and reflexivity, it offers opportunities for higher levels of trans-disciplinarity. One of the features of a complex adaptive system is its adaptive flexibility in a constantly changing learning environment with ever evolving technological advancements. The participants in an online environment are constantly seeking opportunities to respond to new shocks and challenges by developing higher stress resilience. (Eppel, 2012) There is always an open space for the emergence of new systems, realities and new trajectories that co-evolve within and across systems. (Scott, Woolcott, Keast & Chamberlain, 2018)

Complexity science also requires changes in understanding how we perceive the roles of students, shifting from being merely consumers of knowledge to becoming co-designers and co-producers of knowledge in a self-directed mode of learning. This leads to changes in teaching approaches, course design, and curriculum. The notions and forms of democratic curriculum development can be traced back to 1980'marked with the development of critical pedagogy. The post-pandemic reality of the New Normal requires adapting new roles for the student, such as co-inquirer, co-researcher and co-constructor of knowledge. (Bellinger et al. 2014) The transition needs to be smooth, by taking into account the complexity and heterogeneity of students' experiences, as well as the age factor. For students who received basic education in a traditional educational setting as consumers of ready-made knowledge, their previous educational experiences need to be considered, and they need to be accommodated by gradually helping them engage in an autonomous and self-directed learning mode. Therefore, students' roles cannot be simply grasped and placed at the end of a continuum but rather viewed from an evolutionary development perspective. (Dusi & Huisman, 2020)

## Self-Efficacy of An Online Environment

Self-efficacy has been widely studied by Bandura (1997) who explained self-efficacy as one's capability to organize one's learning in an efficient way by reaching a certain level of achievement and exercising control over difficult events in one's life in the face of adversity and difficulties. This involves one's

ability to overcome stress and anxiety and to cope with the demands of a new environment. Efficacy encompasses individuals' ability and purposefulness in achieving their aims. On the contrary, Bandura refers to people who do not trust in their capabilities to overcome obstacles and who avoid difficult tasks because they perceive them as a threat, as having low efficacy. (Bandura, 1997) As the main sources of self-efficacy, he identifies: 1) performance accomplishment (having previous successful experience in overcoming stress; 2) vicarious experience (having an example of a successful achiever); 3) verbal persuasion (availability of qualified and authentic feedback); and 4) the psychological state of an individual. He believes that if an individual is not experiencing stress and anxiety, they are more likely to succeed. Bates and Khasawneh (2007) who have explored self-efficacy of individuals in an online learning environment, believe that the success of performance in an online learning environment is influenced by four factors: 1) previous success with the online learning; 2) pre-course training, 3) teachers' constrictive feedback, and 4) online learning anxiety. Numerous studies focus on separate factors, such as computer self-efficacy, Internet self-efficacy, and self-efficacy in an online learning environment, while only few studies explore multiple factors and dimensions of self-efficacy in an online learning environment, like the study carried out by Taipjutorus, Hansen & Brown (2012) and Taipjutorus (2014). Separate studies have been caried out on IT literacy as a crucial factor of student satisfaction with e-learning. (Pellas, 2014) *The Digital Competence Framework (Digi Com Edu)* (2021) requires a contemporary learner to be aware of multiple aspects of an online learning environment, such as information and data literacy, communication and collaboration, digital content creation, safety and problem solving. It is also aimed at enhancing digital communication, using technologies to strengthen online collaboration, critically assessing one's digital competence and using digital sources for one's professional development. The potential for the use of technologies lies in shifting the learning process from teacher-led to the learner-cantered processes, leading to higher self-regulation, where learners can monitor and reflect on their learning by providing the evidence of progress by offering creative solutions to study-related issues. The potential of digital technologies lies in supporting learner-centered pedagogies by fostering the active involvement of learners in the learning process and boosting their ownership. The use of digital technologies fosters students' transversal skills, deep thinking and creative expression by facilitating digital competence of both learners and staff members. The purposeful use of digital technologies enhances interaction between students both, within and outside learning sessions. Redecker (2017) suggests the *Digi Com Edu Framework* that outlines a progression model from awareness of possibilities offered by technologies to a meaningful use of technologies leading to higher expertise and leadership and eventually to innovations. By reaching the leadership level, staff members use a broad repertoire of digital technologies and choose the most appropriate technologies for a certain context. The imperative of a Digital Decade is to acquire

sufficient digital skills until 2030 and to upgrade digital skills to be able to pursue rewarding careers. *The Digital Education Action Plan (2021-2027)* calls for transformations in higher education and training institutions to make a smooth transition towards Education 4.0., therefore requiring new digital pedagogies and digital tools for teachers and students, including accessible and assistive technologies. The transition to teaching in an online environment also causes techno-stress (techno-anxiety, techno fatigue) among both, teachers and students, resulting in a number of psychosomatic consequences such as high levels of burnout and anxiety. (Estrada- Munoz, 2020) Lizana et al (2021) highlight a number of problems related to an online learning such as low physical activity, work burnout, late work hours, depression and anxiety, work exhaustion as well as mental and physical deterioration among staff members.

## Stress Resilience in Higher Education in Complex Adaptive System Framework

WHO (2020) report defines stress as a health pandemic of the 21st century. Stress can be caused by both environmental and individual factors. Environmental factors include cataclysmic events, such as pandemics, stressful events in one's life, as well as everyday stressors. The pandemic has caused a number of stressors related to a lack of socialization, restrictions for travelling, face-to-face communication and life and work in an online environment. Therefore, students and staff members need to build higher stress resilience to withstand the post-pandemic situation.

Stress resilience in higher education could be built from the system perspective. (Mao & Shearer (2019) Hemhill et al. (2019) define the lists of subsystems of an online learning in higher education, namely, course delivery system, student academic support system, university-wide support system, student personal support system, and student academic support system. Sockman et al. (2019) refer to macro, meso, and micro subsystems in their system perspective in higher education. The macro-level subsystem includes the theoretical perspective on which the online learning system is built. The transition to online or hybrid learning requires redesigning pedagogical models and goals. The meso level involves available infrastructure and management. Here, the focus needs to be on not only technology management but also on the management of change itself in its complexity of online learning (Beaudoin, 2016) by providing all necessary conditions for the change to take place. Therefore, online learning needs to be viewed from the complexity theory perspective by paying close attention to sustainability of change processes: resource allocation, quality and efficacy assurance, collaborative design, strategic planning and continuous evaluation. (Tamin, 2020) The micro **s**ubsystem involves the space where online learning takes place. Inefficiency of any of those

systems can lead to system disequilibrium that needs to be resolved. (Reigeluth, 2019) A piecemeal approach in shaping and improving separate aspects of online learning can be ineffective and may lead to introducing only isolated elements and innovations, mostly as technical solutions. To reach homeostasis and system stability, there is a need for an organic interplay of macro, meso- and micro- level elements. Mastering technologies does not solve the problem completely but imposes theoretical challenges and requires rethinking existing educational paradigms. This also requires transformations aimed at increasing students' engagement and self-directed learning, collaborative networking and collaborative construction of knowledge. (Harasim, 2012) Furthermore, this requires a paradigm shift from a teacher-cantered industrial model of how we view a student through the prism of the student as an agent who is engaged in an independent, and self-directed learning process as envisioned in a post-industrial model. The complexity of an online learning requires new theories rich in diverse variables. Transactional distance learning theory can serve as a starting point by underlining reciprocity between teacher, learner and the environment into a joint dialogue that opens the space for multiple transactions between all parties. It offers higher autonomy for the learner and the possibility of dynamic feedback loops.

## Methodology and Participants of the Study

For the purpose of the study the authors employed a mixture of qualitative and quantitative methods. The authors adapted *Resilience Scale* (ARS – 30) and *General Self Efficacy scale* (GSE) by Schwarzer, & Jerusalem (1995). The GSE by Jerusalem and Schwarzer was used to explore the online environment in the post-pandemic context. The questionnaire included demographic data about participants such as age, year of studies, the program, as well as such variables as previous experience of learning, perception of stressful situations, self-help strategies employed in stressful situations, applied coping strategies during pandemic, and subjective perception of complex situations.

## Research findings from the focus group interviews

The researchers have conducted four focus group interviews with the University students from four departments, namely, nursing, education, sports and management. They identified the main stressors that students have encountered during the post- pandemic and coping mechanisms that they have applied. The participants who agreed to take part in focus group interviews on a voluntarily bases included twenty eight students. The stressors mentioned

by the students spanned all aspects of life, namely, emotional, spiritual, physical and psychical.

Among the most frequently mentioned stressors were panic, anxiety, inability to control emotions, indifference, and illness of close ones. Some participants reported experiencing stressful events in their life caused by the pandemic, such as: "*Illness and death of close people that made this time particularly stressful for me*," " *Every time when I was listening news, I did hear only horrifying news about a number of people who have died, people who have die in hospitals had no chance to see their relatives and family members*."

Among the physical aspects of the post-pandemic period were a sedentary lifestyle and back pain resulting from prolonged periods spent in front of a computer screen.

"*This was already the third year when I was locked in front of the computer screen without opportunities to socialize much with my classmates in real life circumstances*." "*Two long year of studies in front of the screen caused problems with my back pain and emotional imbalance. Now we continue studies online due to energy crises in the world.*" Even in the post pandemic period, the energy crisis compelled many universities to continue online teaching. This shift saved students' travel expenses and time spent commuting to campus, but it also limited their opportunities for social interaction.

In terms of psychological aspects, students reported difficulties in concentrating on tasks and focusing on learning, often opting to spend excessive time on social networks instead. As one of the research participants commented.

"*Sitting too long in front of the screen makes it difficult to concentrate on my tasks. I find myself browsing internet sites for too long and this distracts me from studies*."

The least pronounced was a spiritual dimension as mentioned by the students that involved meditation practice, praying, and spending time in nature. Among the students from nursing program were students over fifty who reported paying more attention to spiritual life, like meditations, long meditative walks in the forest, gardening and fishing. They did not connect their spirituality much with the official religion but related it to practicing yoga, meditation, particularly because this group of students was in a stressful situation due to their work in medicine.

Among the self-care strategies students mentioned avoidance strategies, comfort seeking strategies in eating and receiving encouragement from friends and family members, taking control over their daily life and engaging in physical activities to relieve tension.

Many students reported distancing themselves from negative and destructive information in the news and on the Internet. As one

of the participants commented: "I purposefully do not watch news and try to distance myself from all the negative news as reported in media. I rather choose to walk long hours in nature."

Students' anxiety was related to procrastination, difficulty in waking up in the morning, problems related to time management, difficulty in concentrating on completing the tasks, often completing them hastily. As one the nursing program students commented, "Every day I was bombarded by all that negative news from media that I could not concentrate for my studies and work this all was so depressive."

Among the complaints mentioned by the students were insufficient time for hobbies or neglecting hobbies. There were no anxieties that were typical for the pandemic time in students' response, like fear to be infected and stigmas related to vaccination process. Still, new anxieties were added, including those related to uncertainty, insecurity about the future, increasing financial difficulties in a post-pandemic time, and burnout from combining work and studies.

Among the most typical coping mechanism the students mentioned were cognitive strategies, namely, problem solving strategy, openness to new challenges and experiences, and emotion-based strategies, such as distancing, self-control, seeking social support from friends and family members, taking responsibility for one's life, building psychological well-being, and rewarding oneself for a job well done.

The data gained from the online questionnaire was designed to measure students' stress resilience was filled out by 127 participants from the regional University. Among the participants in the study, 84% were female and 15% were male participants from various Bachelor-level programs: Education, Management, Nursing, Sports, Nature Studies, and IT. Participation in this study was voluntary and anonymous. In response to a question about how students perceive any difficult and novel situation, 42% of respondents perceive any novel situation as temporary difficulties, 35% as a new experience, 11% as a new opportunity, and only 9% as a threat. University students are ready to perceive challenges and deal with them.

The sample of this study is comprised of young bachelor program students for whom a new situation is a new opportunity to succeed. Only 3% of respondents perceived a new situation as a tragedy. 49% of students reported having a range of self-care strategies in case of difficulties and 81% of students reported having their own resources to deal with a novel and stressful situation that they encounter. 34% of students were taking care of their well-being on a regular basis, while 39% of students reported taking care of their well-being when they have some health issues. 51% of students paid attention to all dimensions of their life, namely, physical, spiritual, emotional and social, while 22% of students identified physical aspect as priority to be cared about after two and a half years of studies in an online learning environment. 48% of all

participants reported that difficult situations motivated them for action and 39% were ready to change their career plans if needed. 52% perceived difficult situation as a challenge that made them work harder to succeed. 32% felt depressed in a post-pandemic situation caused by hard economic situation and unclear future prospectus, but still, 71 % reported trying to find a solution out of to any difficulty that comes their way. In case of failure, 66% of students were ready to try finding a way out of difficulties. 67% of students relied on positive experiences in the past to overcome difficulties, which motivates them to succeed in the future.

In case of difficulties, 46% of students turned for help to a teacher, 61% of students cheered themselves up, 61% of students tried new learning strategies, 68% set their own aims and 68% believed that they can improve their own achievement.

*Stress Resilience Scale*, ARS-30 has Cronbach Alfa 0,749. The average age of all research participants was Mean=27.67 with a SD =10.65

The analysis of data gained in Stress Resilience Scale allowed to distinguish three groups of factors, namely, F1- Reflecting and adaptive help-seeking, F2- Negativity and emotional response, and the 3rd factor F3- Distancing from reality.

In post-Covid circumstances, stress-resilience can be evaluated as sufficient. Students have adapted to the New Normal after two years of online learning. They have found enough resources to combine work and studies. Of the three factors (F1: Reflecting and Adaptive Help-Seeking, F2: Negativity and Emotional Response to Events, and F3: Distancing from Reality), the highest indicator was for F1: Reflecting and Adaptive Help-Seeking, which indicates that students have acquired adaptive competency and are able to seek help when new difficulties arise.

Overall, Overall, bachelor-level program students have developed good stress resilience in the post-pandemic era by adopting a wide range of coping strategies during the first and second waves of the pandemic. They were able to view novel situations as opportunities to succeed and managed higher levels of stress and uncertainty.

Regarding the efficacy of work in an online learning environment and stress resilience among the university students, the highest score was for reflective and self-seeking behaviour and efficiency in an online learning environment, while distancing from reality received the lowest score. A negative emotional response to the new reality was reported by almost half of the research participants.

Overall, bachelor-level program students have developed good stress resilience kills skills in the post-pandemic era by adopting a wide range of coping strategies during the first and second waves of the pandemic. They viewed novel

situations as an opportunity to succeed and were able to manage higher levels of stress and uncertainty.

**Table1.** ***Factor analyses of a stress resilience and self - efficacy in an online learning environment***

| | | Reflection and self seeking behaviour | Negativity and emotional reaction | Distancing from reality | Stress Resilience | Efficiency |
|---|---|---|---|---|---|---|
| Mean | | 3,90 | 2,76 | 2,46 | 3,44 | 4,02 |
| Median | | 3,94 | 2,67 | 2,25 | 3,38 | 4,13 |
| Mode | | 3,94 | 2,33 | 2,25 | 3,28 | 4,00 |
| Std. Deviation | | ,53 | ,74 | ,68 | ,34 | ,65 |
| Range | | 4,00 | 3,83 | 3,75 | 3,66 | 4,00 |
| Minimum | | 1,00 | 1,00 | 1,00 | 1,00 | 1,00 |
| Maximum | | 5,00 | 4,83 | 4,75 | 4,66 | 5,00 |
| Percentiles | 25 | 3,63 | 2,33 | 2,00 | 3,24 | 3,75 |
| | 50 | 3,94 | 2,67 | 2,25 | 3,38 | 4,13 |
| | 75 | 4,19 | 3,33 | 3,00 | 3,66 | 4,38 |

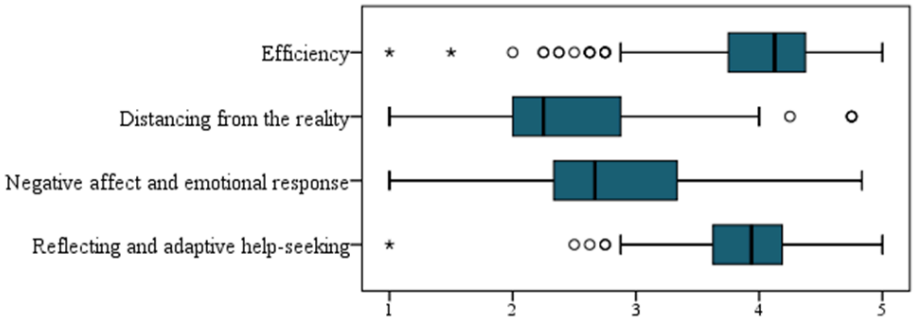


**Figure 1** ***Indicators of efficiency in an online learning environment stress resiliency.***

## Conclusions

The pandemic has caused a long-term impact on students' daily lives and affected their lifestyles and communication patterns. Anxiety and stress became normal responses during the pandemic. Some students reacted very adaptively to the new situation by trying to solve problems, while others could not cope with the new situation successfully. Therefore, the impact of the pandemic cannot be treated as homogeneous. The post-pandemic era brought new challenges and

anxieties such as uncertainty about the future, burnout among students trying to balance work and studies, and financial difficulties due to economic instability.

Therefore, the online learning environment seems to be an option for solving the above mentioned problems. Nevertheless, online learning environment needs to be viewed from a system perspective, as an open, dynamic and complex framework. Then, as viewed from the complexity science theory, online learning system consists of number of systems and factors that are related in a dynamic interaction.

For the transition to an online or hybrid learning process to be more efficient, teachers need to be proactive in setting requirements clearly, providing constant feedback and explaining access to materials timely. Hybrid education can be an alternative in higher education. Hence, online learning is perceived as a system composed of multiple interacting and co-evolving elements. In a post-Covid reality of a New Normal, constant changes have caused a disequilibrium in the system, creating complex problems and stress. To be effective and gain meaningful learning experiences, individuals need to build greater stress resilience. For effective learning to occur, there must be a sense of meaningfulness, self-directed learning, online social interaction, and high stress resilience. Thus, higher education institutions need to foster a culture of meaningful digital transformations that is inclusive of all students, by paying attention to the needs of vulnerable students thus strengthening their stress resilience. By developing students' digital literacy, higher institutions need to address social inequality and increase capacities for student advocacy. Unfortunately, it was observed that during the pandemic, many educators resisted working in an online environment due to a lack of technological skills, poor online course management, and the tendency to replicate face-to-face teaching methodologies and practices.

The exposure of students to an online learning environment will serve as a starting point for adapting new strategies, models, and perspectives. Still, this is the responsibility of both students and University staff members to undertake epistemological shifts by engaging with a complex system of an academic online environment. Students who can embrace the complex reality of an online learning, will be better equipped to develop stress resilience and adopt a more mature epistemological stance for life and work in a complex reality. Universities need to ensure a trustworthy digital environment based on ethical conduct and increasing opportunities for mutual advancement of all participants.

This is particularly important to reflect on the possibilities of higher education in order to prepare students for complex realities of today by promoting a more efficient learning process in relation to the new reality of the New Normal. The pandemic has highlighted the main stressors that students have encountered in an online environment such as anxiety, inability to control emotions, indifference, sedentary way of life, back pain from prolonged time in front

of the computer screen, difficulty concentrating on tasks, difficulty focusing on the educational process due to engagement in social networks. New post-pandemic anxieties include fear of unknowing, insecurity about the future, increasing financial difficulties and burnout from balancing work and studies.

Most of the participants of the study were bachelor-level students who are quite flexible in adapting to new circumstances by developing a wide range of self-care and coping strategies in dealing with a new reality of the post-pandemic context. Among the most frequently used self-care strategies as mentioned by the students were avoidance strategies, comfort seeking strategies in eating, help seeking strategies among friends and family members in case of difficulties, as well as taking control over daily life and engaging in physical activities in order to relieve tension.

## Bibliography


Bandura, A. (1977). *Self -efficacy: The exercise of control*. New York: W.F. Freeman.

Bates, R., & Khasawneh, S. (2007). "Self - efficacy and college students' perceptions and use of online learning systems". In: *Computers in Human Behaviour,* vol. 23 (1).

Beaudoin, M. (2016). "Issues in distance education: A primer for higher education decision makers". In: *New Directions for Higher Education*, vol. 173.

Bellinger, A., Bullen, D., & Ford, D. (2014). "Practice research learning: students as c-researchers and co-constructors of knowledge". In: *Nordic Social Work,* no 4(1).

Brown, T. (2008). "Design thinking". In: *Harvard Business Review,* no 86(6).

Checkland, P. (1991). *Systems thinking: Systems practice*. Chichester, Wiley.

Dusi, D., & Huisman, J. (2020). "It's more complex than it seems! Employing the concept of consumption to grasp the heterogeneity and complexity of student roles in higher education". In: *Higher Education,* vol. 81.

Eppel, E. (2012). "What does it take to make surprises less surprising? The contribution of complexity theory to anticipation in public management". In: *Public Management Review,* no 14(7).

Estrada-Muñoz, C., Castillo, D., Vega-Muñoz, A., & Boada-Grau, J. (2020). "Teacher technostress in the Chilean school system". In: *International Journal of Environmental Research. Public Health*, no 17, 5280.

Taipjutorus, W., Hansen, S., & Brown, M. (2012). "Investigating a relationship between learner control and self-efficacy in an online learning

environment". In: *Journal of Open, Flexible and Distance Learning,* no 16(1).

Fink, G. (2016). *Stress, definitions, mechanisms, and effects outlined: Lessons from Anxiety*. Elsevier.

Harasim, L.M. (2012). *Learning theory and online technology*. UK: Routledge.

Fawaz, M., & Samaha, A. (2020). "E-learning: Depression, anxiety, and stress symptomatology among Lebanese university students during COVID-19 quarantine". In: *Pub Med*, no. 56(1).

Heylighen, F. (2008). Complexity and self-organization. In: M. J. Bates & M. N. Maack (dds.), *Encyclopaedia of library and information sciences*. t. 2. Oxford: Taylor and Francis.

Hemhill, H., Hemhill, L., & Runquist, R. (2019). Improving completion in online education system: An application of systems thinking. Learning, design, and technology. In: M.J. Spector, B. Lockee, M.D. Childress (eds). *Learning, design, and technology.* Cham: Springer International Publishing.

Holland, J. H. (1998). *Emergence: From chaos to order*. Oxford University Press.

Khong, H., Celik, I., & Le, T. et al.(2022). "Examining teachers' behavioural intention for online teaching after COVID-19 pandemic: A large-scale survey". In: *Education Information Technologies*, no 28.

Lawrence, R. J., & Despres, C. (2004). "Futures of trans-disciplinarity". In: *Futures,* no 36(4).

Lizana, P., Vega-Fernadez, G., Gomez-Bruton, A., Leyton, B., & Lera, L. (2021). "Impact of the COVID-19 pandemic on teacher quality of life: A longitudinal study from before and during the health crisis". In: *International Journal of Environmental Research and Public Health,* no 18(7).

Martinez-Sanchez, A., Vela-Jimenes, M.J., Abella-Garces, S., Gogemasns, S. (2019). "Flexibility and innovation: Moderator effects of cooperation and dynamism". In: *Personnel Review,* no. 48(6).

Mao, J., & Shearer, P.L. (2019). Technology affordances in online learning: A system thinking and system dynamics theoretical framework. In: M.J. Spector, B.B. Locke, M.D. Childress (eds). *Learning, Design, and Technology*. Cham: Springer, International Publishing.

Redecker, C. (2017). *European framework for the digital competence of educators: DigCompEdu*. Y. Punie, (ed). EUR 28775 EN. Publications Office of the European Union, Luxembourg.

Pellas, N. (2014). "The influence of computer self-efficacy, metacognitive self-regulation on students engagement, in online learning programmes: Evidence from the virtual world of Second Life". In: *Computers in Human Behaviour,* no 35.

Reigeluth, C.M. (2019). Chaos theory and the sciences of complexity: Foundation for transforming educational systems. In: M. Spectoe, B. Locke, M. Childress (eds). *Learning, design, and technology*. Cham: Springer International Publishing.

Scott, A., Woolcott, G., Keast, R., & Chamberlain, D. (2018). "Sustainability of collaborative networks in higher education research projects. Why complexity? Why not?" In: *Public Management Review,* no 20(7).

Sockman, B, R., Cloosey, L., Carducci, O.M., Batson-Magnuson, L., Mazure, D., White, G., et al (2019). System thinking as a heuristic for the implementation of service learning in a university. In: M.J. Spector, B., Lockee, M. Childress (eds). *Learning, design, and technology*. Cham: Springer, International Publishing.

Taipjutorus, W. (2014). *The relationship between learner control and online learning self-efficacy*. (Doctoral Dissertation), Massey University, Manawatu Campus, New Zealand.

*The Digital Competence Framework (DigComp)*. https://digital-skills-jobs.europa.eu/en/actions/european-initiatives/digital-competence-framework-digcomp, 20.04.2024.

*The Digital Education Action Plan (2021-2027).* https://education.ec.europa.eu/focus-topics/digital-education/action-plan, 20.04.2024.

Tamin, S. (2020). "Analysing the complexities of online education Systems: A system thinking perspective". In: *Technology Trends,* no 64.

Wells, J. (2013). *Complexity and sustainability*.UK: Routledge.

*World Health Organization (WHO) (2020). COVID-19 situation reports. 2020*. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports, 20.04.2024.

Wood, J. (2007). Win-win-win: synergy tools for meta-designers. In: I. Inns, (ed,). *Designing for the 21st century: Interdisciplinary Questions and Insights*. Aldershot: Gower.

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