



Management and Support in Higher Education Ecosystems: Convergence of Psychological and Pedagogical Vectors in the Process of Distance Education

Iryna Barbashova^{1*}, Olha Horina², Nadiia Vakhniak³,
Nataliia Sovtys⁴, Olena Dmytrotsa⁵

¹Department of Primary and Special Education, Faculty of Social, Pedagogical and Artistic Education, Bogdan Khmelnytsky Melitopol State Pedagogical University, Zaporizhzhia, Ukraine

²Department of Psychology,

Higher Private Educational Institution "Dnipro Humanitarian University", Dnipro, Ukraine

³Department of Psychology and Pedagogy of Preschool Education, Hryhorii Skovoroda University in Pereiaslav, Pereiaslav, Ukraine

⁴Department of Ukrainian Language and Slavic Studies, Rivne State University of the Humanities, Rivne, Ukraine

⁵Department of Human and Animal Physiology, Lesya Ukrainka Volyn National University, Lutsk, Ukraine

**scientistua@ukr.net*

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Abstract

Students' mental health can be impacted by studying, academic pressure, institutional culture, and procedures; this is particularly true for distant learning. There are growing requests for universities to promote students' well-being in a caring, all-encompassing manner and to recognize the obstacles posed by university cultures, structures, pedagogies, curricula, tuition, and assessment procedures. Our research, which is based on the integrative review method, shows that relationships with peers (e.g., sense of community and belonging), instructors (e.g., approachability, competence, sense of support), course design (e.g., content, delivery, assessment), and academic resources (e.g., learning materials, physical learning spaces) all have an impact on students' well-being. This is a two-way relationship in which learning can be equally impacted by well-being. However, as research shows, the two domains – students' wellbeing and academic performance – usually are considered separately, and for now the most innovative approach suggested by scholars and implemented by some HE facilities is embedding wellbeing disciplines into curriculum. Based on eco-system paradigm and conceptual modelling methodology, we suggested dynamic capabilities in university distance learning as digital ecosystem,

with connectivity as one of the core elements. In higher education, connectedness and value co-creation are said to signify a change from considering students as passive learners to active participants in their education. In addition to improving learning results, this cooperative approach fosters a feeling of community and equips students for a changing workforce.

Keywords: students' wellbeing, connectivity, digital ecosystem, value co-creation, knowledge sharing.

Introduction

Universities are placing a greater emphasis on the mental health of their students, which is especially important while learning remotely. Students are more susceptible than other groups of individuals in certain ways. There aren't many fresh difficulties for adults who work and perform tasks in nearly the same order every day. For instance, students frequently struggle with just adjusting to the educational process. Independent study in the university requires a lot of time. Students must learn how to prioritize their primary coursework in a timely manner. Mental illnesses may result from such a thorough burden. Poor academic performance may arise from this. When it comes to remote learning, this problem is even more serious.

Distance education is fairly considered an important acceleration in response to the COVID-19 pandemic, becoming widespread in traditional campus-based universities. The rate of remote learning increased dramatically after the pandemic. The acceptance of distance learning in higher education (HE) was greatly accelerated by the COVID-19 epidemic, which turned it from a specialized service into an essential and generally recognized part of contemporary academia. Although there had previously been remote learning, the epidemic forced a worldwide, quick transition to online forms, which are now the method of choice for many students and institutions (Tarawneh et al., 2024). Concurrently, it caused conversations about student well-being to become more intense.

Student well-being (SWB) includes students' social, psychological, and physical well-being-aspects that are more vulnerable in the demanding setting of higher education. Maintaining and improving SWB is becoming more difficult for the higher education industry, which is characterized by heavy workloads, unfulfilled expectations, and uncertainty over degree completion and employment. The scope of current tools for evaluating SWB is constrained, making it unable to fully represent its complex character. The SWB for distance education environment is much less defined, and with the growing prevalence of remote and hybrid education methods in higher education, this issue becomes quite important. In light of this, the goal of this study is to create a convergent model of pedagogical and psychological

components of efficient management and student welfare assistance in the context of higher education.

Literature Review

In the context of distance education, there is evidence that mental health has an impact on academic success, such as academic attainment, progression, and retention. Giusti et al. (2021) warned of the negative impact of distant education on students' mental health, identifying it as the largest predictor of poor academic performance.

Di Malta et al. (2022) used a mixed-methods sequential explanatory design to examine the relationships between the mental health, connectivity, and academic achievement of distant education students during COVID-19. responses to an online survey from 208 students enrolled in remote learning programs. Poorer wellbeing was linked to less emotional intimacy, more loneliness, and lower self-reported academic achievement, according to a subsample study of students who met clinical concern thresholds of anxiety and wellbeing ($n = 123$). Anxiety was linked to lower self-reported academic achievement as well as more relational intensity and less emotional connection with a single individual. Students' feelings of connectedness were used to triangulate and contextualize these paths.

In fact, other researchers point out that encouraging a feeling of community is one element that colleges may be able to use to preserve students' mental health (Di Malta et al., 2022). This is justified by the extensive body of research on the effects of connections and social support—or lack thereof—on mental and physical health (e.g., Holt-Lunstad et al., 2015). There is evidence that university-based partnerships have had comparable effects on students' health. Peer mentorship programs, for instance, have been shown to lower stress and anxiety (Kachaturoff et al., 2020) and enhance student wellbeing (Akinla et al., 2018). Students' wellbeing was also found to be positively impacted by positive relationships with first-year personal tutors (Woolhouse & Nicholson, 2020). Additionally, research indicates that a high degree of contentment, life satisfaction, and a sense of purpose in life have all been linked to a sense of belonging to a university community.

There is evidence that a sense of community at university affects academic engagement and success in addition to its connection to mental health. According to a comprehensive meta-analysis, students' academic performance was influenced by their emotional engagement, which included their sentiments toward peers and teachers as well as their sense of community inside the school (Lei et al., 2018). Additionally, peer ties and a more general sense of institutional belonging and social integration encouraged adjustment to university and student retention, whereas effective friendships that provide emotional support were linked to student retention (Ouyang & Su, 2024). Higher attendance, improved academic performance, a greater sense of efficacy and competence when studying, more

willingness to study, and more time spent studying are all linked to degree completion when one is connected to the university (Li, 2025).

Tarawneh et al. (2024) investigated the effects of psychological health on the performance of distant learning architecture students. Students' online learning experiences were found to be significantly influenced by social issues. There were many worries about family cooperation, privacy, and trust in online education. Student participation was negatively impacted by the unwillingness to use cameras during lectures, which was associated with discomfort and privacy concerns. The lack of peaceful spaces and interruptions from family members during online lectures increased distraction and made the study environment less conducive.

Students' abilities and resilience may also be connected to barriers to wellbeing (Galante et al., 2018; McAllister et al., 2018). According to Lister et al. (2023), students may experience stress, anxiety, and depression as a result of challenges with interpersonal skills, workload management, and discipline-specific study techniques required to get decent marks. In a similar vein, Barrable et al. (2018) discovered that stress related to "study skills difficulties", specifically in relation to "time management, staying motivated, and memory techniques", was a trigger for negative emotions and mental illness.

It is also acknowledged that curriculum and pedagogy contain obstacles to wellbeing. For instance, researchers found that poorly designed learning experiences and lecturers' lack of understanding were obstacles (Henning et al., 2023). Baik et al. (2019) discovered that low levels of classroom interaction, unclear teaching materials, and a lack of variety in activities had a detrimental effect on students' wellbeing. The power dynamics present in faculty-centered pedagogies, as opposed to student-centered pedagogies, have been found to have an impact on students' confidence and wellbeing (Hill et al., 2019), whereas some activities, such as group work, can be harmful to wellbeing (McPherson et al., 2019). Some students have been shown to experience particular mental health problems as a result of distressing curriculum content (Bentley, 2017), and student disengagement has been linked to feeling "overwhelmed" by curriculum content (Weller et al., 2018). Distance learning students do not have the luxury of regular in-person social support from instructors and other students, in contrast to contact education. Kočí (2022) highlights the need of providing them with the tools they need to study efficiently while maintaining high levels of health and well-being.

Meanwhile, a higher education distance learning ecosystem is primarily viewed as an all-encompassing digital environment that integrates LMS, multimedia, and collaboration tools to support flexible learning. It necessitates strong management in vision, curriculum, staff training, and student services. Technical infrastructure, digital literacy, coaching, and robust policies for quality assurance and access are important support systems that go beyond simple technology to create a vibrant, connected learning community for a range of student requirements (Anbalagan,

2019). Key components of this ecosystem, as well as management and support strategies, as they presented in the literature, are briefly summarized in Table 1.

Table 1. HE distance learning ecosystem: traditional vision

<i>Key components</i>
Technology platforms include digital repositories, video conferencing, mobile technology, and learning management systems (LMS such as Moodle and Canvas).
Content & Resources: Interactive simulations, podcasts, and rich multimedia content designed for online distribution.
People: Teachers, administrators, students, and specialist support personnel (IT, coaches).
Processes include feedback loops, communication protocols, curriculum design, and assessment.
<i>Management and support strategies</i>
Strategic Vision & Planning: Creating specific objectives for digital transformation, frequently motivated by national and European regulations for high-performing digital ecosystems
Staff Development: Essential instruction on digital competencies, pedagogy, and the efficient use of new tools for instructors.
Student support includes time management tools, academic tutoring, technical assistance, and community building to prevent loneliness.
Infrastructure & Tools: Providing dependable equipment, software, and internet, frequently by creating “digital twins” of actual campuses.
Using self-assessment tools to track and improve the quality of digital instruction is known as quality assurance.
Policy and intellectual property: Creating precise guidelines for intellectual property and copyright in online environments.

Source: Dao et al. (2025)

Nguyen and Tuamsuk (2022) used an examination of English scholarly discourse from a variety of sources between 2002 and 2021 to investigate the features of the digital learning ecosystem (DLE) in educational institutions. The fundamental conceptual components of the current models were examined using the content analysis method. Using pertinent keywords, researchers gathered sources from Google Scholar and other databases. A total of 35 papers were gathered and examined to give a broad overview of issues, such as (1) DLE models and components, (2) DLE component roles, and (3) DLE enabling and barrier factors. The results demonstrated that DLE comprised a variety of elements, and their interactions were crucial in raising the standard of instruction. Furthermore, a DLE’s development has been impacted by both internal and external variables. The lack of analysis of (1) the relationship between a teacher and a supporter during the learning process, (2) the emerging technologies (such as AI, AR, VR, and IoT) applied

in the DLE, and (3) some concerns about copyright and the intellectual property of educational materials, and the integration of digital contents into learning management systems are some limitations of prior research. While this study, to some extent, goes beyond the vision of digital ecosystem summarized in Table 1 above, it still omits psychological wellbeing of students and lacks seamless tie between psychological and pedagogical vectors of management and support.

Methodology

The methodology of research is based on integrative review and conceptual modelling. The search for literature entries to be included in the sample for review was carried out in ScienceDirect, ResearchGate, ERIC, Springer, and MDPI databases. The core inquires (with variations) included two elements: "HE OR University students wellbeing and academic performance", "HE OR University students mental wellbeing", "management in HE and students engagement".

Research found in databases was exported and stored in ENDNOTE (X9) (Hupe, 2019). Prior to the screening procedure, duplicates were eliminated in ENDNOTE. Microsoft Excel was used to handle data extraction.

Relevant publications advanced to the full text screen after titles and abstracts of studies found through electronic searches were assessed for eligibility. Papers were sent for full text review if there was any doubt about the inclusion criteria at this point. Additionally, whole texts underwent eligibility screening.

The following criteria of inclusion and exclusion were applied:

Include: Higher/third-level education (e.g., university, college), online or offline, in English.

Exclude: Any other stage of education before (e.g., primary, secondary) or after (e.g., post-doctoral) third-level

Based on the results of integrative review, existing gaps and problems were revealed, which served as an environment for designing conceptual modelling of dynamic capabilities in university distance learning as digital ecosystem. In our study, a conceptual model is understood as an abstract model that defines the structure of the system being modeled, the properties of its elements, and the cause-and-effect relationships inherent in the system and essential for achieving the modeling goal.

Results and Discussion

Distance learning students seem to be more prone than campus-based students to report mental health issues and may require assistance even prior to the pandemic. For instance, compared to the UK sector average of 4.2%, 12.2% of students (16,139 in total) at the Open University (OU) in the UK disclosed a mental health condition in 2019–20. The OU's Access and Participation Plan reveals concerning disparities

in degree outcomes for students with mental health issues. Universities must take action.

In the meantime, it has not always been evident how and to what degree colleges should assume responsibility for their students' mental health in addition to their primary duty of teaching (Hughes, 2021). Students' poor mental health is obviously important in and of itself, but it also has an impact on their academic performance. University students' academic performance has been demonstrated to be adversely affected by both anxiety and sadness. In 2019, the United Kingdom Office for Students published a research that identified disturbing evidence of a statistically significant difference in award outcomes for students with mental health issues compared to those without disabilities. Mental health issues have been reported to have a detrimental impact on level of attainment and progression (Hughes & Spanner, 2019) and whether students finished specific modules as well as their degrees (Henning et al., 2023)..

Kočí (2022) suggested a conceptual scheme of multidimensionality of well-being (see Fig. 1).

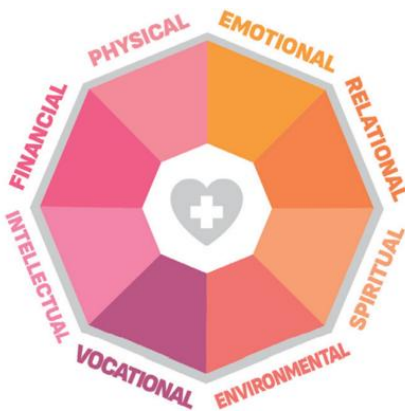


Fig. 1. Multidimensionality of well-being Source: Kočí (2022)

Neagu and Vieriu (2025) look into the relationship between digital well-being and psychological well-being among undergraduate students engaged in technical academic programs at a Romanian institution. The study examines the influence of academic digital technology use, digital autonomy, work-life balance, and the quality of online interactions, as well as the consequences for students' mental and emotional health, as higher education becomes more digitalized. The findings show that there are strong connections between digital engagement patterns and both psychological and subjective well-being, with notable variances depending on sociodemographic characteristics such as gender. As a result, digital well-being has emerged as a fully developed dimension of well-being in remote education.

Higher education institutions are especially vulnerable to the difficulties and opportunities posed by digitization. University students, sometimes referred to as digital natives, face academic pressures, social transitions, and continual connectedness, all of which can have an impact on their well-being in both positive and negative ways (Burr et al. 2020). Existing research indicates that not just the amount of time spent online, but also the quality and intentionality of digital involvement are important in shaping students' psychological outcomes (Hayran & Anik, 2021). Recent research stresses that digital well-being in higher education is determined not just by the amount of technology used, but also by its quality and intentionality. According to theoretical frameworks such as Self-Determination Theory and the Job Demands-Resources Model, students' autonomy, competence, and relatedness play important roles in determining psychological outcomes in digital environments.

This dichotomy of danger and opportunity emphasizes the importance of taking a balanced, evidence-based approach. For designing this approach, we will address patterns of management and support in digitalized ecosystems, in particular:

- Orchestration and governance
 - Support services and technology
 - Strategic collaboration
 - Role of data and technology
 - Operational benefits
 - Dynamic capabilities
-
- The diagram consists of two blue brackets on the right side of the list. The top bracket groups the first three items: 'Orchestration and governance', 'Support services and technology', and 'Strategic collaboration'. To the right of this bracket is the word 'support'. The bottom bracket groups the last three items: 'Role of data and technology', 'Operational benefits', and 'Dynamic capabilities'. To the right of this bracket is the word 'management'.

Although designing and constructing course curricula is frequently the primary focus of online learning, instructional concerns are only one component of an educational environment that contributes to online educational quality and success for learners. Moore and Piety (2022) investigate systemic planning for online learning, built around the concept of an educational ecosystem. Online learners, like in-person learners, benefit from well-planned educational institutions. In their study, the authors end with institutional resilience and how rigorous systemic planning that strategically integrates online planning is critical to the success of online programs required for institutions' long-term resilience.

Volz et al. (2025) argue that digital ecosystems (DEs), powered by ICT, are altering how firms generate, deliver, and capture value across interconnected networks. The effective distance education university landscape, which includes both psychological and pedagogical vectors for enabling students' well-being, is a digital ecosystem. Table 2 displays dynamic capabilities in such a digital economy.

Table 2. Dynamic capabilities in university distance learning as digital ecosystem

Element	Dynamic capability	Description	Key concepts	Operationalization
Ecosystem level: Sense	Digital infrastructure	The ability to establish and maintain technology underpinnings that enable information sharing and seamless data flow among ecosystem members, boosting innovation and collaboration opportunities.	The interoperability and facilitation of curriculum-aligned technical infrastructure	deployment of digital platforms and protocols that facilitate organized data sharing and knowledge exchange across organizational boundaries, backed by a real-time information flow infrastructure
	Formulation of a transparent value proposition	The capacity to create a coherent atmosphere for value co-creation by ensuring that everyone is aware of the potential advantages and contributions of each member	For instance, operational procedures for flexible data transfer, routines for cooperative value generation mechanisms, and a focus on formalized and routinized relationships and interactions within ecosystems	Transparency in benefit sharing throughout the ecosystem is ensured by the provision of explicit documentation and communication frameworks that describe participant contributions and value generating procedures.
Ecosystem level: Seize	Connectivity	Establishing and maintaining data pipelines and sharing mechanisms is essential for fostering cooperative innovation and	For instance, stressing the significance of ongoing connectedness throughout the value chain for value generation	Creation of safe data pipelines and sharing systems that enable the analysis of both historical and real-time data, promoting cooperative

		value generation		innovation among ecosystem players
	Ecosystem structuration	The capacity to create and preserve structural components and governance processes that promote cooperation	For instance, defining recurrent, predetermined interactions and formalizing collaboration routines, or defining organizational transformation and cross-functional collaborative development principles to promote ecosystem collaboration	Establishing formal governance frameworks that specify roles, duties, and cooperative procedures, bolstered by systems that promote a common perspective among ecosystem participants
Ecosystem level: Transform	Formation of ecosystem identity	The capacity to create a shared identity and objectives among people, promoting cooperation and sustainability	For instance, creating exclusivity through strong leadership within the ecosystem or encouraging collaboration by physical proximity and ongoing realignment of ecosystem goals in consideration of participants' aims	Developing a shared vision and goals, as well as building knowledge exchange channels that balance individual interests with collective ecological objectives

Source: developed by the author based on Volz et al. (2025), Bogers et al. (2019)

Sensing capacities in digital ecosystems become a collaborative process that depends on shared data, platforms, and insights among ecosystem participants, as Table 2 makes clear.

Lastly, our results demonstrate the importance of flexible and responsive systems at all ecosystem levels. By developing a flexible organizational structure that allows businesses to both participate in and alter their roles within the ecosystem, these

agile and adaptive structures incorporate agile management methods that allow businesses to react quickly to changes in an ecosystem. Businesses must adopt flexible governance frameworks that strike a balance between strict formal norms and principles and loosely organized couplings as ecosystems alter, evolve, and adapt to both internal and external pressures. It is essential to balance the power relationships between various actors. By integrating sensing functions at various ecosystem levels, this multiactor sensing extends the framework of dynamic capacities. The focus of seizing capacities shifts from internal resource realignment to ecosystemic coordination.

Strong mental and social health directly fuels motivation, focus, and learning success, so managing student well-being and academic performance entails developing supportive, holistic environments that integrate social-emotional learning with academic, focusing on elements like stress management, social connection, emotional literacy, and healthy habits. This transforms schools into places where learning and thriving mutually reinforce each other. Building positive school climates, providing focused mental health support (such as mindfulness), teaching life skills, cultivating strong teacher-student relationships, and making sure students feel a sense of belonging and self-efficacy are all important tactics that improve engagement and achievement (Li, 2025). With a convergence of psychological and pedagogical vectors, the aforementioned ecosystem approach seeks to smoothly integrate administration and assistance in HE institutions. The following performance-enhancing techniques can be put into practice thanks to shared identity formation and data pipelines within the framework of the connectedness principle:

- Stress management and mindfulness: Techniques like mindfulness help students focus better and feel less anxious.

- Time management and goal-setting: Instructing students to make thoughtful plans that balance social time, self-care, and study.

- Academic-wellbeing integration: Create environments and curricula where learning and wellbeing are complementary rather than conflicting goals.

- Leverage strengths: To boost confidence and perseverance, build on students' current strengths rather of concentrating only on their weaknesses.

A wider range of students can be assisted before they experience a crisis (i.e., when specialized or clinical mental health services are required to support the student) thanks to such an embedded approach, which also gives them essential skills that will help them outside of the HE setting.

It should be noted that the global compendium of best practices already includes integrating wellbeing into the curriculum. Some have demonstrated that the strategy, structure, and evaluation of their modules had an unanticipated and beneficial effect on their students' wellbeing; others have set out to increase student

wellbeing on purpose, and this is an explicit learning outcome of their modules (Surdey & Byrne, 2024). When an intervention relates to student experiences that are linked to the formal curriculum—that is, learning experiences that are organized and directed by academic staff and educators—it may be deemed entrenched in the curriculum, according to Bannigan et al. (2025). Curriculum design, or how something is taught, can be changed to achieve this. Examples of such modifications include adjustments to class schedules or to methods of assessment and feedback. Incorporating well-being into required or elective classes or modules (i.e., a whole class or module specifically designed to teach students about well-being topics and practices) or incorporating core concepts and values into pre-existing courses (i.e., including well-being content or activities in parts of an existing course) are two more ways to change curriculum delivery (i.e., what is taught) and take advantage of a student's own discipline to promote knowledge and skills related to their well-being. However, the ecosystem model we present suggests a unified framework for value co-creation that goes beyond such a "linear" concept of support. It means that students are empowered to participate in value creation and make genuine contributions as full-fledged participants in the university environment.

When staff and students collaborate to develop curricula, pedagogical strategies, and other educational materials, this is known as value co-creation. Both the student and the university gain from this cooperative process that produces value for both parties. Students take part in this environment by giving feedback, exchanging expertise, mentoring one another, and designing the curriculum. Students have more control over their education through co-creation, moving from the "passive student" to the "co-producer" paradigm. By allowing students to participate in the decision-making process, universities can guarantee that a variety of viewpoints are incorporated, making the curriculum more inclusive and equitable - that is, 'by default' enabling better wellbeing for every student because, in this case, the system is self-adjusting, eliminating the need for drawn-out, time-consuming, expensive, and labor-intensive processes of curriculum discussion, analysis, and modification (which in the traditional model is often done by specialized, methodical department, without listening to the opinions of students and occasionally even teachers.

Co-creation fosters critical thinking and problem-solving abilities, enhances learning, and boosts student motivation. Additionally, it increases student dedication and contentment, supporting both academic achievement and mental health at the same time, and improving the university's reputation.

In turn, collaborative innovation paradigm, implemented throughout university as eco-system, will significantly improve management practices, based on proactive and Agile approach.

We believe it is highly expedient to design and introduce such ecosystems in universities, and precision and accuracy in reporting results and interpretation are

critical since strong evidence can inform policy and practice, with implications for education, learning, careers, welfare, and university students' future life.

References

- [1] Akinla, O., Hagan, P., & Atiomo, W. (2018). A systematic review of the literature describing the outcomes of near-peer mentoring programs for first year medical students. *BMC Medical Education*, 18(1), 1–10. <https://doi.org/https://doi.org/10.1186/s12909-018-1195-1>
- [2] Anbalagan, G. (2019). *Learning ecosystem for open and distance learning*. IGI Global.
- [3] Baik, C., Larcombe, W., & Brooker, A. (2019). How universities can enhance student mental wellbeing: the student perspective. *Higher Education Research and Development*, 38, 674–687. <https://doi.org/10.1080/07294360.2019.1576596>
- [4] Bannigan, G., McGrath, D., & Matthews, J. (2025). Whole-university approaches to embedding well-being in the curriculum: a scoping review. *Frontiers in Education*, 10, 1534244. <https://doi.org/10.3389/feduc.2025.1534244>
- [5] Barrable, A., Papadatou-Pastou, M., & Tzotzoli, P. (2018). Supporting mental health, wellbeing and study skills in higher education: an online intervention system. *International Journal of Mental Health Systems*, 12, 54. <https://doi.org/10.1186/s13033-018-0233-z>
- [6] Bentley, M. (2017). Trigger warnings and the student experience. *Politics*, 37, 470–485. <https://doi.org/10.1177/0263395716684526>
- [7] Bogers, M., Sims, J., & West, J. (2019). What is an ecosystem? Incorporating 25 years of ecosystem research. *Academy of Management Proceedings*, 2019(1), 11080. <https://doi.org/10.5465/ambpp.2019.11080abstract>
- [8] Burr, C., Taddeo, M., & Floridi, L. (2020). The ethics of digital well-being: A thematic review. *Science and Engineering Ethics*, 26(4), 2313-2343. <https://doi.org/10.1007/s11948-020-00175-8>
- [9] Dao, V.-Ph., Nguyen, T.-L., Bui, V.-H., Nguyen, M.-D. (2025). Developing a digital platform ecosystem for distance learning and STEM education. *Journal of Information Systems Engineering and Management*, 10(38s). <https://doi.org/10.52783/jisem.v10i38s.6842>
- [10] Di Malta, G., Bond, J., Conroy, D., Smith, K., & Moller, N. (2022). Distance education students' mental health, connectedness and academic performance during COVID-19: A mixed-methods study. *Distance Education*, 43(1), 97–118. <https://doi.org/10.1080/01587919.2022.2029352>
- [11] Galante, J., Dufour, G., Vainre, M., Wagner, A. P., Stochl, J., Benton, A., et al. (2018). A mindfulness-based intervention to increase resilience to stress in university students (the mindful student study): a pragmatic randomised

controlled trial. *Lancet Public Health* 3, e72–e81.
<http://dx.doi.org/10.1016/>

- [12] Giusti, L., Mammarella, S., Salza, A., Del Vecchio, S., Ussorio, D., Casacchia, M., & Roncone, R. (2021). Predictors of academic performance during the COVID-19 outbreak: Impact of distance education on mental health, social cognition and memory abilities in an Italian university student sample. *BMC Psychology*, 9(1), 1–17.
<https://doi.org/https://doi.org/10.1186/s40359-021-00649-9>
- [13] Hayran, C., & Anik, L. (2021). Well-Being and Fear of Missing Out (FOMO) on Digital Content in the Time of COVID-19: A Correlational Analysis among University Students. *International Journal of Environmental Research and Public Health*, 18(4), 1974.
<https://doi.org/10.3390/ijerph18041974>
- [14] Henning, M., Krageloh, Ch., Moir, F., Chen, Y., Webster, C. (2023). *Wellbeing in higher education*. Routledge.
- [15] Hill, J., Healey, R. L., West, H., & Déry, C. (2019). Pedagogic partnership in higher education: encountering emotion in learning and enhancing student wellbeing. *Journal of Geography in Higher Education*, 45, 167–185.
<https://doi.org/10.1080/03098265.2019.1661366>
- [16] Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, 10(2), 227–237.
<https://doi.org/https://doi.org/10.1177/1745691614568352>
- [17] Hughes G. (2021). The challenge of student mental well-being: Reconnecting students services with the academic universe. In F. F. Padró, M. Kek, & H. Huijser (Eds), *Student support services: University development and administration* (pp. 1–23). Springer. https://doi.org/10.1007/978-981-13-3364-4_6-2
- [18] Hupe, M. (2019). EndNote X9. *Journal of Electronic Resources in Medical Libraries*, 16(3-4), 117-119.
<https://doi.org/10.1080/15424065.2019.1691963>
- [19] Kachaturoff, M., Caboral-Stevens, M., Gee, M., & Lan, V. M. (2020). Effects of peer-mentoring on stress and anxiety levels of undergraduate nursing students: An integrative review. *Journal of Professional Nursing*, 36(4), 223–228. <https://doi.org/https://doi.org/10.1016/j.profnurs.2019.12.007>
- [20] Kočí, J. (2022). Health and well-being tips for distance learning university students. *Gramotnost, Pregramotnost*, 6(3), 47–63.
https://pages.pedf.cuni.cz/gramotnost/files/2023/03/Gramotnost_03_2022_Koci.pdf
- [21] Lei, H., Cui, Y., & Zhou, W. (2018). Relationships between student engagement and academic achievement: A meta-analysis. *Social Behavior and Personality: An International Journal*, 46(3), 517–528.
<https://doi.org/https://doi.org/10.2224/sbp.7054>

- [22] Li, H. (2025). Students' wellbeing in positive higher education: conceptual frameworks and influencing factors. *Frontiers in Education, 10*, 1607364. <https://doi.org/10.3389/feduc.2025.1607364>
- [23] Lister, K., Seale, J., & Douce, C. (2021). Mental health in distance learning: A taxonomy of barriers and enablers to student mental wellbeing. *Open Learning: The Journal of Open, Distance and e-Learning*. <https://doi.org/https://doi.org/10.1080/02680513.2021.1899907>
- [24] Lister, K., Andrews, K., Buxton, J., Douce, C., Seale, J. (2023). Assessment, life circumstances, curriculum and skills: Barriers and enablers to student mental wellbeing in distance learning. *Frontiers in Psychology, 14*, 1076985. doi: 10.3389/fpsyg.2023.1076985
- [25] McAllister, M., Knight, B. A., Hasking, P., Withyman, C., Dawkins, J. (2018). Building resilience in regional youth: impacts of a universal mental health promotion programme. *International Journal of Mental Health Nursing, 27*, 1044–1054. <https://doi.org/10.1111/inm.12412>
- [26] McPherson, E., Collins, T., and Gallen, A.-M. (2019). 'Enabling inclusive group work', in Proceedings of the 12th annual international conference of education, research and innovation (ICERI 2019). Proceedings of the 12th annual international conference of education, research and innovation (ICERI 2019), Seville, Spain: IATED. <http://oro.open.ac.uk/68480/>
- [27] Moore, S., & Piety, P. (2022). Online learning ecosystems: comprehensive planning and support for distance learners. *Distance Education, 43*(9), 1-25. https://doi.org/10.1080/01587919.2022.2064820?urlappend=%3Futm_source%3Dresearchgate.net%26utm_medium%3Darticle
- [28] Nguyen, L. T., & Tuamsuk, K. (2022). Digital learning ecosystem at educational institutions: A content analysis of scholarly discourse. *Cogent Education, 9*(1). <https://doi.org/10.1080/2331186X.2022.2111033>
- [29] Neagu, S. N., & Vieriu, A. M. (2025). Digital and Psychological Well-Being Among Technical University Students: Exploring the Impact of Digital Engagement in Higher Education. *Education Sciences, 15*(9), 1192. <https://doi.org/10.3390/educsci15091192>
- [30] Ouyang, X., & Su, Z. (2024). The Relationship between college students' sense of community and mental health. *Applied & Educational Psychology, 5*(3), 124-128. DOI: 10.23977/appep.2024.050517
- [31] Stones, S., & Glazzard, J. (2019). *Supporting student mental health in higher education*. Routledge.
- [32] Surdey, J., & Byrne, D. (2024). Wellbeing in the curriculum: opportunities and challenges for higher education. In: S. Edwards, A. Martin, N. Ashkanasy, L. Cox (eds). *Research Handbook of Academic Mental Health* (pp. 291-306). Edward Elgar Publishing. <https://doi.org/10.4337/9781803925080.00026>
- [33] Tarawneh, D., Sawalqa, H., Al-Adayleh, M., Dahabreh, S., Isawi, H. (2024). The impacts of mental health and psychological well-being on architecture

students' performance during distance learning. Lessons learnt from the COVID-19 lockdown in Jordan. *Journal of Accessibility and Design for All*, 14(1), 69-85. <https://doi.org/10.17411/jacces.v14i1.374>

- [34] Volz, F.; Münch, Ch., Küffner, Ch.; Hartmann, E. (2025): Digital ecosystems and their impact on organizations - A dynamic capabilities approach. *International Journal of Management Reviews*, 27(3), 398-419, <https://doi.org/10.1111/ijmr.12396>
- [35] Waterhouse, P., Samra, R., & Lucassen, M. (2020). Mental distress and its relationship to distance education students' work and family roles. *Distance Education*, 41(4), 540-558. <https://doi.org/https://doi.org/10.1080/01587919.2020.1821606>
- [36] Weller, M., van Ameijde, J., & Cross, S. (2018). Learning Design for Student Retention. *Journal of Perspectives in Applied Academic Practice*, 6(2). <https://doi.org/10.14297/jpaap.v6i2.318>
- [37] Woolhouse, C., & Nicholson L. J. (2020). Mentoring in higher education, Case studies of peer learning and pedagogical development. Palgrave Macmillan.