NASCENT TECHNOLOGICAL INTERVENTIONS FOR ENHANCING STUDENT WELLBEING: A REVIEW OF CURRENT TRENDS

BY

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Abstract

Nascent technological interventions for enhancing school wellness are emerging strategies that leverage technology to promote health and well-being in educational settings. These interventions can take many forms, such as web-based platforms, digital apps, and other techbased tools. Staff members and students are using technological interventions to support mental health, particularly in response to issues like the pandemic. Digital platforms for stress management and mindfulness, mental health applications, and online counselling services are a few examples of these approaches. These emerging tech-enhanced programs are a part of a larger movement in schools to incorporate technology into health and wellness programs. They represent an exciting area of development with the potential to significantly enhance school wellness programs. However, the effectiveness of these interventions can vary, and ongoing research is needed to evaluate their impact and optimise their implementation. The article discusses key trends in technological interventions with examples and reasons, and, in light of recent studies, how Technology can be used in several ways to address barriers to student wellness.

Keywords: student wellbeing, digital wellness, nascent technologies, educational technology

Introduction

In the last ten years, there has been an increase in the amount of research done on students' well-being. This research has focused on policy issues as well, specifically on whether or not education systems that place a high priority on student well-being can help students lead more satisfying lives (Pollard and Lee, 2003). The quality of a student's life is defined by the Programme for International Student Assessment (PISA), emphasises which the psychological, cognitive, social, and physical aspects of a student's skills. Additionally, it makes a distinction between several aspects of wellbeing, such as overall life satisfaction, wellbeing linked to oneself, well-being related to school, and well-being outside of school (OECD, 2019). This definition also emphasises students' well-being as an active inner process to achieve their personal and social goals (Borgonovi and Pál, 2016). Studies carried out in 35 OECD member nations by Govorova et al. (2020) looked at the variety of elements found in learning environments and their effects on learners' well-being. Numerous studies, like the one conducted by de Roiste et al. (2012), demonstrate the significant improvements in social and emotional well-being that can be obtained by students who participate

more actively in school activities. These improvements also have positive effects on learning outcomes and experiences, satisfaction, and the quality of relationships engagement levels (Kuurme and and Carlsson, 2010; Lohre et al., 2010; Coombes et al., 2013). Understanding the role that technology may play and the potential effects it may have on these two dimensions is essential when thinking about the issue of students' inclusion and well-being in the classroom. Research reveals that technologies present chances for inclusive education, especially in terms of assisting students with special needs (connected to disability, immigrant background, and socioeconomic disadvantage) in acquiring the skills necessary to succeed in school and in society at large (Benigno et al., 2019). Digital inclusion is one of the main targets for the upcoming years, according to the European Commission's recently released European Digital Strategy (European 2020). The Commission's Commission, efforts to ensure that everybody can contribute to and benefit from the digital economy and society reflect an inclusiondriven approach through digital technologies that centres around four main pillars:

- advancing accessible ICT solutions (design for all)
- developing assistive technologies enabling people with disabilities to interact

- empowering citizens' skills and digital skills to fight marginalisation and social exclusion, and
- fostering social inclusion and participation of disadvantaged people in public, social, and economic activities.

In order to address digital well-being in education, it is necessary to assist students in making responsible and productive use of digital tools. The threats that phenomena like technology addiction and cyberbullying pose to students' personal well-being justify the inclusion of safety as a fundamental component of digital education (Mascia et al., 2020). Corroborate this, illuminating the complex interrelationships that affect teenagers' well-being and demonstrating the detrimental effects of smartphone addiction on self-control and well-being. According to Carrera et al. (2017), the Digital Competence Framework (DigComp 2.1) of the European Commission places well-being in connection with competencies related to safety. According to the framework, safeguarding one's health and well-being involves limiting risks when using technology, protecting oneself and others from potential threats, and realising how technology may be used to promote social inclusion and well-being. Accordingly, DigComp 2.1 characterises leaders' social inclusion and well-being as corresponding goals that come together, particularly when it comes to the opportunities and results of using digital for education (Jones technology and Sandford, 2019). Comparably, at the school level, a thorough foundation for successfully

integrating digital technologies in educational organisations is provided by the European Framework for Digitally Competent Educational Organisations (Kampylis et al., 2015; Mattar et al., 2020).

Technological interventions are increasingly being used to enhance wellness in educational settings. Here are some key trends:

- 1. Digital and Technological Interventions for Mental Health and Wellbeing: Research shows that selective and targeted use of technology within care and welfare can have several advantages, including improved quality of care and active user involvement (NAJ; Joris; Dalae, 2021). The focus is on highlighting and structuring the diverse combinations of technologies and interventions used so far, rather than the effectiveness summarising of singular approaches.
- 2. Student Wellness Trends and **Interventions in Medical Education:** Current trends indicate that mental illness, substance use, and burnout are more prevalent in medical students compared to the general population due to excessive academic, personal, and societal stressors (Klein, 2022). Pass/fail systems and longitudinal. grading collaborative learning approaches with peer support appear to be protective for wellness. The COVID-19 student pandemic has posed unique challenges to the medical education system and has

stimulated unprecedented innovation in educational technology and adaptability.

3. Mindfulness-Based School Interventions (MBSIs): MBSIs have been found to increase prosocial behaviour, resilience, executive function, attention, and mindfulness, and decrease anxiety, attention problems/ADHD behaviours, and conduct behaviours (Phan,2022).

Technology can be used in various ways to improve student wellness:

- **1.** Social-Emotional Learning (SEL): Technology can be used to build socialemotional skills, which are crucial for mental health and well-being. Digital tools like tablets, smartboards, and computers can be used to teach and reinforce key SEL concepts such as empathy, perspective-taking, and gratitude. Incorporating technology SEL within instruction and core academic content can help students work to their strengths, complete assignments at their own pace, and enjoy a more personalised experience in the classroom
- 2. Digital Wellness: This is an intentional state of physical, mental, and social health that occurs with mindful engagement in the digital and natural environment. It involves using media and technology to build digital environments that can help advance the overall wellbeing of children, their families, society, and humanity at large.

- 3. Wellbeing Support Platforms: There are platforms that provide support services for those struggling with depression or anxiety. These platforms can be easily accessed by students and provide them with the necessary support.
- 4. Digital Fitness Apps: With the help of smart devices and digital fitness apps, students can easily track their fitness progress, monitor their sleep patterns, and manage their diet and nutrition. This promotes wellness and improves overall health.
- **5. Intelligent Analytics**: Technology can provide access to intelligent analytics that can help in understanding and improving student well-being.
- 6. Construct, Collaborate, Create: Technology engages students when it allows for students to construct their own ideas, collaborate with peers, and create unique work. For example, students can read two news articles on the same topic and then decide which article was more persuasive.
- 7. Improving Student Engagement: Technology can be used to improve student engagement. For instance, it can foster a feeling of connection, determine behaviour patterns, ensure equal access, create real-world simulations, offer mental health support, enable students to self-assess, and boost interactive learning.

Technological interventions are increasingly being used to enhance wellness in educational settings for several reasons:

- Flexibility: New technologies can allow for more flexibility, offering interventions in the natural context.
- 2. Reach: They can reach a larger population without risk of stigma, making wellness resources more accessible.
- **3. Cost-Effectiveness**: Technological interventions can be more cost-effective compared to existing services.
- **4. Rapidly Updated Information**: The use of tablets and e-books rather than textbooks makes it possible for learners to have extended access to rapidly updated information.
- 5. Youth Well-being: Youth wellbeing is a pressing international problem, and it is a key concern of educational institutions, considering the substantial amount of time that youth spend in school. Technological interventions provide empirically validated and theoretically sound methods to support students' well-being.
- 6. Addressing Barriers: Youth experiencing barriers such as low socioeconomic status and food insecurity are more likely to report lower wellbeing. Technological interventions can help address these barriers and promote equitable access to opportunities.

These factors contribute to the growing use of technological interventions in educational settings to enhance student wellness. However, it's important to ensure that these interventions are used responsibly and are tailored to the specific needs of the students. Here are some examples of technological interventions used in education:

- **1. Digital Readers and Tablets**: These devices can be used to support early literacy. They can provide a wide range of e-books and educational resources, making learning more engaging and interactive.
- 2. 3D Printing: This technology allows students to bring their ideas to life, fostering creativity and problem-solving skills.
- **3. Virtual Reality (VR)**: VR can provide immersive learning experiences, making complex concepts more understandable.
- **4. Gamification**: Incorporating game elements into learning can increase student engagement and motivation.
- **5. Cloud Technology**: It allows for easy access to educational resources from anywhere, facilitating remote learning.
- **6. Artificial Intelligence (AI)**: AI can personalise learning based on each student's needs and progress.
- **7. Mobile Technology**: With the help of smartphones and tablets, learning can happen anytime and anywhere.

8. Remedial **Computer-Assisted** (CAL) Programs Learning in Mathematics: These programs can personalised, provide interactive learning experiences, helping underprivileged or underperforming students improve their math skills.

Technology can be used in several ways to address barriers in student wellness:

- Educational Technology (EdTech): EdTech plays a significant role in enabling learners with disabilities to access learning at school and reduce educational and social exclusion¹. It also enables them to enjoy the benefits of a full school curriculum and to participate in activities in different educational arrangements.
- 2. Inclusive Education: Technology is often an asset for bridging the learning gap and achieving inclusive education for all. However, major obstacles remain in terms of accessibility and connectivity.
- **3. Support Services**: Platforms that provide support services for those struggling with depression or anxiety can be a great help within the educational sector.
- **4. Intelligent Analytics**: Access to intelligent analytics can help in understanding and improving student well-being.
- **5. Immersive Experiences**: Technologies that allow students to explore scenarios from the perspective of others can be

beneficial in overcoming barriers to improving student well-being.

- **6. Collaboration Tools**: Tools that foster collaboration among students can also be beneficial.
- 7. Emotional State Analysis Tools: Tools that help collect and analyse data about students' emotional states can be useful in understanding and addressing barriers to student well-being.

Conclusion

Technological interventions are being developed to improve school wellness, focusing on physical, mental, and emotional well-being. These include mobile apps like Headspace, Calm, and Mood Mission, online counselling services, digital wellness platforms, telemedicine, wearable health devices, virtual reality (VR), online peer support networks, AI-powered mental health screening tools, educational games, and remote learning support tools. These technologies aim to support students' mental health, provide convenient and confidential support, and promote healthy behaviours. Telemedicine allows students to receive medical care remotely, while wearable devices monitor physical activity and vital signs. Virtual reality (VR) offers immersive environments for relaxation and emotional well-being, while online peer support networks foster empathy and a sense of belonging. AI-powered mental health screening tools help schools proactively intervene and provide support to students in need (De Witte et al., 2021; Klein & McCarthy, 2022).

These trends demonstrate the diverse ways in which technology is being utilised to enhance school wellness, addressing the holistic needs of students beyond academic achievement. However, it's essential to evaluate the effectiveness, accessibility, and ethical implications of these interventions to ensure they benefit all students equitably.

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