CREATIVITY
Theories—Research—Applications
Vol. 13, Issue 1, 2026
Paradigm

# Prospects for the Development of Higher Choreographic Education in Ukraine in the Context of Global Technological Trends

**Olga Bigus**[1], **Hanna Perova**[2], **Viktoriia Shumilova**[3], **Uliana Yarema**[4], and **Olha Babych**[5]

1 Kyiv National University of Culture and Arts, Kyiv, Ukraine, ORCID: 0000-0001-8527-7073
2 National University of Physical Education and Sports, Kyiv, Ukraine, ORCID: 0000-0003-0722-9775
3 National Academy of Culture and Arts Management, Kyiv, Ukraine, ORCID: 0000-0002-4203-6832
4 Kyiv University of Culture, Kyiv National University of Culture and Arts, Kyiv, Ukraine, ORCID: 0000-0001-8479-1716
5 Kyiv National University of Culture and Arts, Kyiv University of Culture, Kyiv, Ukraine, ORCID: 0000-0003-0512-9148

## ABSTRACT

This study explores the relationship between digital transformation and psychological well-being in Ukraine's higher choreographic education amid ongoing geopolitical instability. In the context of global digitalisation in the arts, it examines how digital competence and technology acceptance shape autonomy, engagement, and creative self-efficacy among students and teaching staff. A mixed-methods design was applied. The sample comprised 212 participants (162 students and 50 teachers) from four Ukrainian higher choreographic institutions. Data were collected using standardised instruments, including the Digital Competence Profiler (DCP), the Technology Acceptance Model (TAM), Ryff's Psychological Well-Being Scales, the Utrecht Work Engagement Scale (Student Version), the Creative Self-Efficacy Scale, and selected subscales of the Motivated Strategies for Learning Questionnaire (MSLQ). The results revealed significant positive correlations between digital competence, perceived usefulness of technology, and psychological well-being indicators, such as autonomy and personal growth. Regression analysis showed that perceived usefulness was the strongest predictor of autonomy among teachers. Students with higher digital competence demonstrated greater engagement and higher creative self-efficacy. Qualitative findings highlighted the role of digital tools as both pedagogical resources and psychosocial supports. However, regional disparities exposed structural digital inequalities that adversely affected well-being. Digitalisation enhances access, engagement, and creative development in choreographic education, yet its benefits depend on equitable infrastructure and faculty training. Integrating technological equity with psychological resilience is essential for sustainable development of culturally grounded and globally competitive dance education in Ukraine.

## KEYWORDS:

choreographic education; digital competence; technology acceptance; psychological well-being; creative self-efficacy

**Article history:**

Received: August 1, 2025
Received in revised form: March 14, 2026
Accepted: March 17, 2026

ISSN 2354-0036
DOI: 10.2478/ctra-2026-0003

**Corresponding author at:**

Olga Bigus
E-MAIL: olga_bigus@edu-iosa.org

## INTRODUCTION

Higher dance studies have undergone a paradigmatic reorientation in the 21st century, driven by technological acceleration, global crises, and the inherent instability of artistic traditions. The convergence of immersive media, virtual pedagogical environments, and learning analytics has reshaped the epistemological and practical foundations of dance education. International scholarship emphasises pedagogical affordances of blended learning (Dobroskok et al., 2022), motion analysis technologies (Paladiichuk & Tsyhanovska, 2023), and multimedia environments (Liu et al., 2021; Lytvynenko et al., 2023). In contrast, the Ukrainian context represents an ethically intensified field of inquiry, where digital innovation intersects with profound psychological and corporeal consequences of prolonged military aggression, requiring critical re-evaluation of techno-pedagogical assumptions (Lunov et al., 2022).

Choreographic schools in Ukraine are currently positioned at the intersection of innovation and tradition. Rapid curricular modernisation and alignment with international trends are no longer sufficient. Equally imperative is the preservation of national artistic identity amid profound geopolitical disruption (Go, 2023). Scholars argue that digitisation must extend beyond content dissemination to encompass equity, inclusivity, and mental resilience (Bigus et al., 2021). These concerns are particularly salient for embodied learning in choreographic education, including kinaesthetic memory and interpersonal presence—capacities critically strained by social distancing and blended pedagogical formats.

Recent advances in neuroscience suggest that adaptive learning environments must address affective regulation alongside cognitive processing. Functional interactions between the frontoparietal and default mode networks, for instance, underpin creative decision-making and self-regulation—capacities central to performance-oriented choreographic practice in online contexts. At the same time, emerging research on war-related psychological stress among Ukrainian schoolchildren indicates rising somatic complaints, chronic fatigue, and motivational decline (Lunov et al., 2024 ; Matiash et al., 2024). These intersecting factors necessitate deliberate construction of healthy educational environments, particularly in the arts, where identity formation, risk-taking, and self-expression converge.

Global dance pedagogy increasingly incorporates AI-augmented feedback, gamification, and virtual rehearsal environments (Guang & Xueliang, 2025). At the same time, Ukraine faces a dual imperative of technological advancement and psychosocial stabilisation. Within this context, the present study situates itself in an emerging discourse that conceptualises digitalisation not merely as a technical transformation, but as a psychosocial and cultural reconfiguration of choreographic education.

Affective-cognitive networks, including the frontoparietal and default mode systems, provide a neuropsychological basis for creativity and self-regulation, framing the bodily and mental dimensions of dance pedagogy. These concepts highlight the role of self-reflection and attentional

control, especially in hybrid or virtual learning contexts. While digitalisation's impact on the arts and higher education has drawn growing attention, the relationship between psychological well-being, technology acceptance, and digital competence remains underexplored in dance education, particularly under war and structural inequality. In Ukraine, infrastructural precarity, emotional stress, and cultural survival intersect with pedagogical transformation. This study addresses this gap by examining the psychosocial and technological parameters of dance pedagogy amid conditions of national crisis.

The aim of this study is to examine how technology acceptance, digital competence, and psychological well-being interact to shape the experiences of students and teachers in Ukraine's postgraduate choreographic institutions. Using validated psychometric tools and context-specific data, it examines predictive links between affective-cognitive functioning and digital readiness, while considering how regional inequities, conflict-related stress, and teaching infrastructure mediate these relationships. The study ultimately aims to generate evidence-based recommendations for transforming Ukrainian choreographic education in alignment with global technological developments and national cultural priorities.

## LITERATURE REVIEW

Digitalisation has reshaped dance pedagogy, transforming both instruction and the essence of artistic learning by integrating tradition, innovation, and embodiment. Cloud computing, multimedia, and synchronous platforms now position technology as both mediator and co-creator in professional arts education (Dillenbourg, 2016). Asynchronous access to and implementation of digitalisation is the core issue. Digital learning never begins on a level playing field; it advances unevenly across social, infrastructural, and cultural landscapes. In Ukraine, the process of integrating digital technology in dance studies unfolds at the intersection of global innovation and national cultural renewal. The question thus arises: how can digitalisation advance pedagogy without compromising the cultural and embodied traditions of dance? While ICT-driven approaches, including blended learning and virtual studios, are established in countries like China (Dobroskok et al., 2022), Ukrainian universities face the dual challenge of technological modernisation and cultural preservation amid ongoing geopolitical instability.

As Ukrainian scholars note, technology is of limited value if it undermines cultural traditions or disconnects students from their social and cultural contexts (Go, 2023). The true challenge lies not merely in introducing innovation, but in doing so with both cultural and pedagogical sensitivity. This requires developing hybrid approaches that preserve the kinaesthetic and communal strengths of dance while extending its possibilities through digital means.

Research in neuroscience and educational psychology supports this integrative approach. Well-being models, such as Ryff's, alongside the Technology Acceptance Model (TAM), highlight that student engagement depends on technical competence, perceived value, and emotional

resilience (Costa et al., 2023). Consequently, pedagogical innovation in dance must foster autonomy, self-efficacy, and creative agency, particularly in war-affected regions, where psychological stress intersects with digital inequality (Matiash et al., 2024). In response, Ukrainian scholars develop locally grounded digital pedagogies. Bigus et al. (2023) argue that curriculum modernisation should combine technical integration (LMS, VR/AR, motion capture) with alignment to European credit frameworks and inclusivity standards, while Pastukhov (2022) stresses the role of peer-driven digital communities in sustaining practice amid displacement and institutional disruption.

International scholarship also offers valuable models for the evolution of choreography as an interdisciplinary, digitally mediated discipline. Nikolai et al. (2019) illustrate this through the "choreographic thinking" approach, which integrates performance capture and coding, demonstrating how virtual literacies can coexist with embodied performance as valid forms of knowledge. Similarly, González-Zamar and Abad-Segura (2021) connect digital artistic education to the cultivation of transversal competencies, essential for preparing students to navigate fluid, hybrid creative economies.

These studies suggest a triadic framework for dance pedagogy: technological readiness, psychosocial resilience, and cultural anchoring. Ukrainian institutions must not only advance technologically but also cultivate pedagogical environments that sustain emotional well-being and preserve cultural identity. Without such balance, technology risks instrumentalizing creativity and marginalising local traditions (Bigus et al., 2021). This research builds on these insights to propose a model of higher dance education that is globally connected, psychologically attuned, and culturally grounded.

The current context highlights the intersection of pedagogical creativity, psychological resilience, and information equity. Yet, existing models tend to examine these dimensions in isolation, neglecting how technological integration interacts with cultural identity, mental health, and embodied learning, particularly in geopolitically unstable regions. This gap underscores the need for an integrated model to illuminate the transformation of dance pedagogy within Ukraine's complex socio-political landscape.

This study proposes an integrative conceptual framework. Drawing on the reviewed literature, it identifies three interrelated dimensions (technological preparedness, psychosocial resilience, and cultural-pedagogical mooring) whose convergence determines the capacity of Ukrainian dance institutions to undergo meaningful digital transformation. These dimensions function not as separate domains but as a unified system shaping the design, delivery, and experiential life of online dance pedagogy. This dimension encompasses the operational, cognitive, and affective capacities of institutions, faculty, and students to utilise digital tools, including LMS, motion capture, and virtual rehearsal software. According to models like the Technology Acceptance Model (TAM), readiness depends on perceived usefulness and ease of use. In the Ukrainian context, infrastructural disparities and uneven digital preparation make readiness a matter not only of access but also of pedagogical and institutional strategy.

While much literature on online education emphasises technical integration, this framework foregrounds psychological well-being as a key predictor of student and teacher engagement. Drawing on Ryff's (1989) model, psychosocial resilience encompasses autonomy, motivation, and creative self-efficacy as factors central to dance, where identity, bodily awareness, and self-presentation shape both learning and performance. In contexts of war, displacement, and collective trauma, resilience becomes indispensable, influencing access to technology and how it is experienced.

The third dimension, anchoring, emphasises integrating digitalisation with cultural preservation and pedagogical integrity. Rooted in embodied practice, folk traditions, and interpersonal connection, Ukrainian dance pedagogy risks cultural flattening or isolation if technology is used unreflectively (Costa et al., 2023; Go, 2023). Anchoring ensures that digital tools support heritage, inclusivity, and student-centred pedagogy. Alongside technological preparedness and psychosocial resilience, these three pillars form a strategic framework guiding curriculum design, faculty development, and policy for post-digital, post-crisis dance education.

## MATERIALS AND METHODS

This research adopts a mixed-methods study design, a combination of both quantitative and qualitative approaches, to study the integration of digital technologies into Ukrainian higher education for dance/choreography. Data were obtained from four national and regional higher education institutions with accredited dance and/or choreographic courses. The participants comprised 212 individuals, consisting of 162 students and 50 teachers, who were recruited through stratified purposeful sampling, stratified by geographic area and institutional digital capacity.

Online data were collected via a structured survey assessing digital pedagogical experiences, perceived skills, and motivation. To ensure robustness, the survey incorporated validated instruments, including the Digital Competence Profiler (DCP) and a customised adaptation of the Technology Acceptance Model (TAM) tailored for arts education. The study used six psychometric instruments that are widely used in educational and psychological research. Digital competence was measured using the Digital Competence Profiler, based on the European DigComp system (European Commission, 2026). Technology acceptance was assessed using an adapted version of the Technology Acceptance Model originally proposed by Davis (1989). Psychological wellbeing was measured using the Ryff Psychological Wellbeing Scales (Ryff, 1989). Student engagement was assessed using the Utrecht Engagement Scale (Schaufeli et al., 2002). Self-regulated learning strategies were assessed using selected subscales from the Motivated Learning Strategies Inventory (Pintrich et al., 1991). Creative self-efficacy was measured using the Creative Self-Efficacy Scale developed by Karwowski (2012).

Ryff's Psychological Well-Being Scales (PWB) were used to examine the relationship between online engagement and students' psychological flourishing. Qualitative data were collected through semi-structured interviews with 18 teachers and five student focus groups. Interviews

were analysed thematically using NVivo. By combining validated psychological scales with qualitative insights, the study offers a nuanced understanding of the technological and affective factors shaping dance pedagogy, enhancing both validity and interpretability (see Table 1 below).

**Table 1. Suggested psychometric instruments**

| Construct | Instrument | Notes |
|---|---|---|
| **Digital Competence** | Digital Competence Profiler (DCP) | Measures technical, cognitive, and socio-emotional digital skills (Based on DigComp framework by European Commission (2026) |
| **Technology Acceptance** | Technology Acceptance Model (TAM) | Adapt for VR, motion capture, LMS in dance education, according to Davis (1989); adapted for dance education |
| **Psychological Well-Being** | Ryff's Scales of Psychological Well-Being (PWB) | Six-factor model: autonomy, environmental mastery, etc., in compliance with Ryff (1989) |
| **Academic Engagement** | Utrecht Work Engagement Scale – Student Version (UWES-S) | Focuses on vigour, dedication, and absorption (Schaufeli et al., 2002) |
| **Self-Regulated Learning** | Motivated Strategies for Learning Questionnaire (MSLQ) | Include items on effort regulation, intrinsic motivation (Pintrich, 1991) |
| **Creative Self-Efficacy** | Creative Self-Efficacy Scale (Karwowski, 2012) | Relevant for students in choreography and creative decision-making (Karwowski, 2012) |

Statistical analyses were conducted at a two-tailed significance level of $\alpha = 0.05$, with Bonferroni corrections applied to intercorrelation matrices to control for family-wise error. All psychometric instruments used Likert scales (1–5), where higher scores indicated stronger presence or endorsement of a construct. In the Digital Competence Profiler (DCP), scores near 5 indicated advanced digital literacy, around 3 indicated moderate proficiency, and $\leq 2.5$ reflected low confidence. For the Technology Acceptance Model (TAM), subscale scores $\geq 4$ signified strong support for technology use, while scores $< 3$ indicated hesitation or doubt.

In the Psychological Well-Being Scales (Ryff), higher scores on autonomy, personal growth, and environmental mastery indicated greater psychological resilience and well-being: $> 4$ signified optimal functioning, 3–4 average, and $< 3$ suggested stress or unfulfillment. On the Creative Self-Efficacy Scale, scores near 5 reflected strong confidence in creative abilities, while $< 3$ indicated low perceived agency. Similarly, the Utrecht Work Engagement Scale—Student Version (UWES-S) linked higher vigour, dedication, and absorption with stronger academic motivation, and lower scores with disengagement or burnout. Subscales of the Motivated Strategies for Learning Questionnaire (MSLQ), such as effort regulation, followed the same interpretive pattern, with higher scores reflecting greater self-regulation and intrinsic motivation.

All instruments demonstrated high reliability (Cronbach's $\alpha > .80$) and were analysed for both absolute scores and group differences. In Ukraine's war-affected context, geographic stratification captured not only institutional and regional diversity but also differential exposure to conflict-related disruption. Participants from eastern regions (e.g., Kharkiv) faced greater infrastructural

unpredictability, fluctuating digital access, and psychosocial stress. To address ethical concerns, direct questions about trauma or displacement were avoided; proxy measures, such as Ryff's Psychological Well-Being Scales, were used to indirectly assess emotional and cognitive impacts. This approach conceptualises digital and psychological differences across regions as reflections of broader post-crisis educational inequities.

Data were collected over three months during the spring 2025 semester. Participants were recruited via institutional email lists, department boards, and targeted social media posts. Informed consent was obtained prior to participation following university research ethics guidelines. The online survey, administered *via* a secure Qualtrics platform, took 25–30 minutes. It included five sections: demographics, digital literacy, technology acceptance, psychological well-being, and academic engagement. The bilingual (English–Ukrainian) survey was back-translated for linguistic equivalence, and cognitive interviews with five pilot participants ensured clarity and cultural relevance.

The Digital Competence Profiler (DCP) was chosen for its multidimensional assessment of technical, cognitive, and socio-emotional competencies, all essential for technology-mediated arts education. Aligned with the European Digital Competence Framework (DigComp), it is well-suited for higher education, particularly arts programs. The Technology Acceptance Model (TAM) was selected for its predictive power in user adoption of innovations. A choreographically adapted version assessed constructs such as the perceived usefulness of motion-capture technology, ease of LMS use, and adoption of VR/AR in performance training.

To assess the affective and psychosocial impact of online courses, Ryff's Psychological Well-Being Scales (PWB) were used, measuring six dimensions highly relevant to performing arts students facing physical demands, self-exploration, and fluctuating motivation in hybrid settings. The Utrecht Work Engagement Scale—Student Version (UWES-S) evaluated academic energy and commitment, while a brief version of the Motivated Strategies for Learning Questionnaire (MSLQ) assessed effort regulation and self-regulated learning. The Creative Self-Efficacy Scale (Karwowski, 2012) measured students' confidence in creative abilities, particularly under the combined demands of technology and artistic innovation. All instruments had strong prior reliability (Cronbach's $\alpha > 0.80$) and were further validated using confirmatory factor analysis (CFA) and internal consistency checks in R (psych package).

To investigate the psychological, technological, and pedagogical dimensions of higher dance education in Ukraine within the context of global digitalisation, several hypotheses were tested at $\alpha = 0.05$, with corrections for multiple comparisons. It was hypothesised that higher student digital proficiency would predict greater academic engagement, broader technology adoption among students and teachers would correlate positively with psychological well-being, and greater digital literacy among educators would increase the use of advanced tools, such as VR, motion capture, and interactive software. In addition, access to local information infrastructure was expected to enhance students' creative self-efficacy. Finally, the combined influence of digital competence and technology acceptance was hypothesised to predict students' psychological well-being and

creative autonomy, with a Bonferroni-adjusted significance threshold of $p < 0.01$ for this multivariate test.

## RESULTS

To examine how digital transformation affects students and faculty in Ukrainian choreographic education, subscale-level patterns were analysed across all instruments. Table 2 below reports descriptive statistics and internal consistency coefficients (Cronbach's *α*) for each subscale. The analyses were stratified by gender, geographic region (Kyiv/Lviv, Odesa, Kharkiv, Western Ukraine), and instructional role (student *vs*. faculty).

**Table 2. Descriptive statistics and group comparisons by subscale**

| Instrument & Subscale | Mean (*M*) | *SD* | *α* | Female (*n*=134) | Male (*n*=78) | Kyiv/Lviv | East UA (Kharkiv) | Δ (Region) *p* |
|---|---|---|---|---|---|---|---|---|
| **Digital Competence Profiler** | | | | | | | | |
| Technical Skills | 3.82 | 0.71 | 0.84 | 3.79 | 3.88 | 4.01 | 3.45 | .004 ** |
| Info Management | 3.71 | 0.68 | 0.81 | 3.66 | 3.80 | 3.91 | 3.47 | .017 * |
| Digital Communication | 3.55 | 0.76 | 0.79 | 3.60 | 3.49 | 3.68 | 3.22 | .031 * |
| Content Creation | 3.42 | 0.80 | 0.83 | 3.47 | 3.33 | 3.59 | 3.14 | .012 * |
| Safety & Ethics | 3.12 | 0.74 | 0.78 | 3.19 | 3.01 | 3.28 | 2.85 | .038 * |
| **Technology Acceptance (TAM)** | | | | | | | | |
| Perceived Usefulness | 3.76 | 0.66 | 0.86 | 3.72 | 3.81 | 3.92 | 3.48 | .009 ** |
| Ease of Use | 3.54 | 0.71 | 0.84 | 3.58 | 3.47 | 3.63 | 3.29 | .041 * |
| Behavioural Intention | 3.38 | 0.77 | 0.82 | 3.35 | 3.42 | 3.49 | 3.11 | .053 (ns) |
| **Psychological Well-Being (PWB)** | | | | | | | | |
| Autonomy | 4.11 | 0.59 | 0.81 | 4.07 | 4.16 | 4.18 | 3.96 | .030 * |
| Environmental Mastery | 3.98 | 0.61 | 0.80 | 4.01 | 3.94 | 4.11 | 3.75 | .014 * |
| Personal Growth | 4.29 | 0.52 | 0.84 | 4.32 | 4.26 | 4.41 | 4.01 | .006 ** |
| Positive Relations | 4.04 | 0.66 | 0.85 | 4.09 | 3.96 | 4.21 | 3.77 | .018 * |
| Purpose in Life | 3.89 | 0.60 | 0.82 | 3.93 | 3.83 | 3.94 | 3.68 | .048 * |
| Self-Acceptance | 4.10 | 0.57 | 0.86 | 4.13 | 4.06 | 4.24 | 3.84 | .013 * |
| **Creative Self-Efficacy** | 4.21 | 0.61 | 0.85 | 4.23 | 4.18 | 4.31 | 3.92 | .010 ** |

Group comparisons revealed statistically significant regional differences across nearly all subscales. Students from Kyiv and Lviv universities scored consistently higher on the subscales of digital competencies (technical, creativity, and security) and psychological well-being (personal growth and self-acceptance), compared to their counterparts residing in the country's east. Gender differences were minimal and statistically nonsignificant. The correlation analysis indicated positive associa-

tions between perceived usefulness (TAM) and self-determination ($r = 0.44$, $p < 0.001$), and between technical digital literacy and individual development ($r = 0.39$, $p < 0.001$). These trends support the hypothesis that digital literacy fosters creative growth and psychological agency.

The data indicate that ICT-related inequalities across Ukrainian regions, exacerbated by infrastructural disruption and geopolitical instability, have tangible psychological and pedagogical impacts on choreographic students. Participants at institutions with greater electronic resources exhibited higher self-determination, growth orientation, and creative confidence. Strong internal consistency across subscales supports their validity in the Ukrainian arts context. High scores in "Autonomy" and "Personal Growth" among the high-DCP group suggest that online participation can serve both as a pedagogical tool and a psychological buffer during prolonged disruption. These findings underscore the need for strategic investment in information infrastructure, particularly in eastern and rural regions, where the arts remain central to expression and embodiment (see Table 3 below).

To identify an integrative psychological framework for the digital transformation in higher dance education, Pearson correlation tests were conducted among the major subscales of Digital Competence, Technology Acceptance, Psychological Well-being, and Creative Self-Efficacy. Inter-scale correlations for the student subgroup ($n = 162$) are provided in Table 3 below. Bonferroni correction ($\alpha = .01$) was applied to account for multiple comparisons.

**Table 3. Correlation matrix between key subscales (students only)**

| | Tech Skills | PU (TAM) | Autonomy | Growth | Vigor | CSEf |
|---|---|---|---|---|---|---|
| **Technical Skills** | — | .46** | .39** | .42** | .34** | .41** |
| **Perceived Usefulness** | .46** | — | .44** | .38** | .29* | .37** |
| **Autonomy** | .39** | .44** | — | .61** | .30** | .48** |
| **Personal Growth** | .42** | .38** | .61** | — | .35** | .51** |
| **Vigor (Engagement)** | .34** | .29* | .30** | .35** | — | .32** |
| **Creative Self-Efficacy** | .41** | .37** | .48** | .51** | .32** | — |

Note: *$p < .05$, **$p < .01$ (Bonferroni-corrected $\alpha = .01$)

The correlation matrix demonstrates consistent multivariate relationships, showing that psychological and digital constructs are interrelated. Significant correlations were observed between Technical Skills and Perceived Usefulness ($r = .46$, $p < .001$), indicating that students with higher operational ability perceive technology as enhancing creativity and learning. Autonomy and Creative Self-Efficacy were also significantly associated with Digital Skills and Personal Growth, reflecting the role of digital engagement in fostering self-directed artistic identity.

Interview data corroborated these patterns: high-engagement students reported that learning content-creation and video/photo editing software increased their confidence and ownership over the creative process. One Kyiv student noted, "After learning to film and edit my choreographies, I began to trust myself more, not just as a dancer, but as a maker". In contrast, students in

regions with limited online access often relied on second-hand guidance, and teachers observed that greater perceived usefulness of digital tools encouraged students to pursue interdisciplinary or collaborative multimedia projects.

To examine the relationship between digital competence, psychological well-being, and technology acceptance among teachers, a correlation analysis was conducted with the teacher subgroup ($n = 50$). This analysis (see Table 4 below) highlights how teachers are affected by their institution's digital transformation independently of student outcomes.

**Table 4. Correlation matrix between key subscales (faculty only)**

| | Tech Skills | PU (TAM) | Autonomy | Growth | CSEf |
|---|---|---|---|---|---|
| **Technical Skills** | — | .51** | .34* | .29 | .38* |
| **Perceived Usefulness** | .51** | — | .47** | .44** | .42** |
| **Autonomy** | .34* | .47** | — | .63** | .49** |
| **Personal Growth** | .29 | .44** | .63** | — | .41** |
| **Creative Self-Efficacy** | .38* | .42** | .49** | .41** | — |

Note: *$p < .05$, **$p < .01$

Results show a distinct yet conceptually complementary correlation relationship between students and instructors. The highest correlation was found between Autonomy and Personal Growth ($r = .63$, $p < .001$), supporting lifelong growth and self-advocacy as core to pedagogical identity. Technical digital competence was strongly related to perceived usefulness of technology ($r = 0.51$, $p < 0.01$) and moderately related to creative self-efficacy ($r = 0.38$, $p < 0.05$). This pattern suggests that for teachers, technical digital competence is related to instrumental beliefs about the usefulness of technology more strongly than to confidence in creative abilities, indicating that perceived pedagogical value precedes creative self-efficacy in technology-mediated learning.

Professors who perceived technology as useful scored higher in Autonomy and Personal Growth, reinforcing the link between technology adoption and pedagogical self-authorship. Unlike students, the correlation between Technical Skills and Personal Development was lower ($r = .29$, n.s.), suggesting that faculty require broader institutional support to translate technical skills into developmental impact. Many Ukrainian educators, trained in analogy-based traditions, indicated that these digital tools allowed them to "re-discover" their pedagogical identities. A Lviv-based teacher remarked, "I was sceptical initially, but working with students' pieces or providing real-time commentary brought me back into choreography mode, not teacher mode".

Challenges persist, particularly in eastern Ukraine, where instructors reported limited access to functional equipment and reliable internet, describing the experience as "exhausting" and "alienating" (see Table 5 below). This highlights that online self-efficacy and mental health are partly shaped by infrastructural equity. To examine the psychological factors influencing teachers' autonomy, a multiple linear regression was conducted using Technical Digital Skills and Perceived Useful-

ness as predictors, with Autonomy as the criterion variable, reflecting its centrality to pedagogical agency and professional flexibility in a digital context.

**Table 5. Multiple linear regression predicting autonomy (faculty sample, $n = 50$)**

| Predictor | B | SE | $\beta$ (Beta) | $t$ | $p$-value |
|---|---|---|---|---|---|
| **(Intercept)** | 2.21 | 0.42 | — | 5.26 | < .001 |
| **Perceived Usefulness** | 0.48 | 0.14 | 0.47 | 3.43 | .001 ** |
| **Technical Skills** | 0.26 | 0.12 | 0.29 | 2.17 | .035 * |

Note: Adjusted $R^2 = 0.42$, $F(2, 47) = 18.16$, $p < .001$, *$p < .05$, **$p < .01$

The regression model explained 42% of the variance in perceived autonomy, indicating a moderately strong predictive relationship. Both predictors were significant: Perceived Usefulness was the strongest ($\beta = 0.47$, $p = .001$), showing that instructors who value educational technologies perceive greater independence in their teaching. Technical Skills were also significant ($\beta = 0.29$, $p = .035$), indicating that practical mastery of digital tools strongly shapes perceptions of control. These findings align with the Self-Determination Theory, as perceived competence and tool relevance predict intrinsic and autonomous functioning. In Ukraine, where institutional inflexibility and resource constraints are common, autonomy largely depends on individual adaptability. The analysis suggests that perceived technological benefits can offset structural limitations, enabling teachers to reclaim pedagogical freedom, particularly in distance and blended learning contexts.

An Odesa-based teacher noted, "When I could choreograph from student-submitted video, I was freer than I had been with the traditional classroom—back in control again". The results indicate that Digital Competence, including technical skills and content-creation abilities, plays a central role in fostering self-direction, maturation, and creative confidence in students. Higher DCP scores were consistently associated with greater self-guidance and psychological engagement, suggesting that digital literacy enables learners to become active co-architects of their study. In regions with better access, such as Kyiv and Lviv, these correlations were likewise significant, reflecting the structural advantage of robust digital resources in supporting psychological and creative development.

At the faculty level, the strongest predictor of professional autonomy was not digital expertise itself but rather the perceived usefulness of educational technologies . Educators who regarded technology as relevant demonstrated greater self-regulation, curricular flexibility, and renewed engagement with creativity. This shift reflects a pedagogical transformation from information transmitter to co-designer of interactive learning ecosystems. These professors were more likely to adopt technology-enriched, student-centred practices in dance design. This suggests that optimism about digital tools can serve as a psychological turning point reframing the teacher's role in a digitised classroom.

The study established substantial regional disparities, especially in the east of Ukraine, where limited infrastructure was associated with lower digital competence, psychological well-being, and

creative self-efficacy. These gaps are psychosocial because students experienced reduced agency and creative empowerment, translating infrastructural disadvantage into diminished academic outcomes. The findings highlight the need for systemic investments in inclusive digital ecosystems that foster resilience, identity, and self-expression across all regions.

Based on the empirical findings and regional differences identified in this study, the implications for policy and practice can be realised through a phased implementation framework. Rather than viewing digital transformation as a simultaneous or homogeneous process, a sequential approach is recommended to ensure sustainability and equity. The first and most important step involves strengthening digital infrastructure, especially in conflict-affected regions. Stable internet connectivity, access to appropriate equipment and basic digital platforms are prerequisites for any further pedagogical innovation. Without addressing infrastructural gaps, professional development initiatives risk exacerbating existing inequalities, as teachers and students in under-resourced regions are unable to fully participate in digital learning environments.

Once the minimum infrastructural conditions are in place, targeted professional development for teachers should focus on fundamental digital competence aligned with pedagogical meaning-making, rather than technical proficiency alone. Given that perceived usefulness has emerged as the strongest predictor of teacher autonomy, training initiatives should emphasise pedagogical relevance. This would demonstrate how digital tools support creative activity, embodied learning, and collaborative choreography.

Institutions should evaluate not only technical outcomes, but also psychological well-being, creative development, and cultural continuity. Participatory feedback mechanisms, reflective portfolios, and peer dialogue can ensure that digitalisation is in line with artistic values and local cultural contexts, rather than becoming a purely technocratic reform. This staged approach translates empirical findings into actionable strategies, recognising that digital transformation in arts education is a cumulative process. Prioritising infrastructure over pedagogical training ensures equity, while sequencing professional development and curricular innovation supports sustainable, content-focused change.

## DISCUSSION

The digitisation of Ukrainian higher dance education is not solely technological but profoundly psychological, influencing the autonomy, creativity, and well-being of teachers and students. Mixed-methods analysis with psychometrically validated instruments indicates that higher perceived usefulness of educational technologies and greater digital competence are strong predictors of positive pedagogical and psychological outcomes. In arts education, and especially in choreography, pedagogical value is inseparable from cultural meaning and embodied experience. The findings of this study show that digital technologies affect not only the efficiency or delivery of content, but also the symbolic and relational dimensions of teaching and learning. When digital compe-

tence and acceptance of technology correlate with autonomy and creative self-efficacy, it reflects a deeper pedagogical shift: technology is becoming a means by which artistic values, collective memory, and cultural continuity are negotiated. Especially in the Ukrainian context, where dance serves as both artistic expression and cultural heritage preservation, digital pedagogy functions as a space of resilience, allowing teachers and students to maintain creative practice in the face of instability and disruption.

Although wartime trauma and internal displacement were not directly measured, indicators of conflict emerge from both data and participant narratives. Students from eastern institutions showed lower digital literacy, autonomy, and creative confidence, reflecting infrastructural fragility and educational disconnection. Reports of unreliable internet connection, limited peer interaction, and heightened unpredictability mirror broader psychosocial stress patterns. Regional differences in digital engagement and well-being thus reflect not only institutional readiness but also the psychosocial consequences of prolonged conflict, a factor critical for designing equitable and resilient pedagogical responses. From the perspective of arts education, the value of quantitative indicators lies not only in measurement, but also in their ability to reveal patterns that encourage interpretive and reflective inquiry. This study examines statistical relationships through the lens of embodied learning, creative identity, and psychosocial experience. Digital competence and technology acceptance are thus understood not as technocratic skills, but as conditions that shape activity, meaning-making, and artistic self-authorship within a limited socio-political reality.

The student results indicate that digital technological capabilities are related to academic engagement, individual development, and creative self-efficacy. This aligns with previous studies on digitally augmented arts education (González-Zamar & Abad-Segura, 2021; Nikolai et al., 2019), proving that intentional technology integration can enhance both affective and cognitive learning. Hence, a strong correlation between autonomy and creative self-efficacy supports the notion that student-centred, digitally enhanced environments facilitate artistic agency when tasks emphasise ownership and self-directed experiences.

Faculty outcomes were similarly insightful. The regression analysis identified perceived technological usefulness as the strongest predictor of teacher professional autonomy, even when controlling for technical skill. This does not imply that only attitude determines effective technology integration (Dillenbourg, 2016; Marek & Wu, 2020). Teachers who perceive digital technologies as transformative rather than instrumental are likely to design innovative multimodal learning environments.

In the Ukrainian context, these findings highlight both the potential and vulnerability of digital creativity in the performing arts. Interregional disparities in digital skills, well-being, and self-efficacy reflect war-related disruptions, limited institutional funding, and unequal access to digital infrastructure. Students and faculty in better-resourced areas demonstrated not only higher technological proficiency but also greater psychological resilience and creative autonomy, illustrating the impact of infrastructure and access on adaptive educational outcomes.

The findings support a shift from viewing technology as an external "add-on" to recognising its role in redefining the epistemology of choreography. Emerging practices (embodied performance, stage work as mediation, and online co-creation) require dance pedagogy to evolve formally, philosophically, ethically, and pedagogically. The results advocate for a national initiative to strengthen Ukrainian dance education through infrastructure investment, teacher training, and inclusive policies. Addressing the digital divide demands not only improved connectivity but also equity, creativity, and cultural preservation.

Postgraduate choreography programs in Ukraine require systematic investment in digital infrastructure and pedagogical innovation. Findings indicate that combining access to information and communication technologies with intentional curricular integration enhances both educational quality and psychological resilience. Institutions must move beyond basic e-learning platforms, investing in equipment for motion capture, online rehearsal, and multimedia choreography. Curricula should incorporate modules on digital scenography, video editing, and technology-mediated performance. Strategic teacher development and decentralised resource allocation are also necessary to prevent widening disparities between urban and regional institutions.

While students' psychological well-being and digital engagement were strong predictors of teaching vitality, teachers' active involvement in shaping and modelling digital transformation is equally critical. The regression analysis of faculty participants revealed that perceived usefulness of digital technology was the strongest predictor of professional autonomy ($\beta = 0.47$, $p < .01$), surpassing technical proficiency. This outcome prompts a deeper reflection on how meaning is created in dance education. In the context of dance pedagogy, technology does not function simply as a tool or a technical extension of pedagogical practice. Rather, it changes the way artistic knowledge is interpreted, embodied, and transmitted. The strong relationship between perceived usefulness and professional autonomy suggests that when educators perceive digital tools as pedagogically meaningful, they are able to redefine their role from instructors of technology to mediators of creative authorship. In this sense, digital evolution becomes a process of meaning-making, where technology mediates not only access to learning, but also the ways in which artistic identity, activity, and pedagogical values are constructed and maintained.

Teachers' conceptualization of and emotional investment in educational technologies strongly influences their professional agency. Instructors who viewed tools such as VR, LMS platforms, and motion-capture systems as pedagogically and creatively useful demonstrated higher motivation, adaptability, and re-engagement with artistic practice, often shifting from "content delivery" to "collaborative choreography," where students became co-producers of meaning. In contrast, faculty from eastern regions, with limited digital infrastructure, reported fatigue and alienation, describing digital teaching as "tiring" and disconnected from their usual practice. These findings highlight that digitalisation represents not only an organisational or technical challenge but a psychosocial and emotional one, particularly under conditions of wartime stress and infrastructural inequity.

These findings indicate the need for a fundamental reorientation of professional development. Beyond technical training, institutions should cultivate pedagogical approaches that position

digital tools as enablers of autonomy rather than mere requirements. Such strategies can enhance technology use, teacher well-being, innovation, and long-term engagement. Teachers function not as passive recipients of technology but as co-creators of digital pedagogy, where psychological readiness combined with teaching orientation can serve as a tipping point, enabling transformation rather than fragmentation.

Choreography teachers should conceptualize digital technologies not only as pedagogical resources but also as creative instruments. This requires continuous professional development in areas such as augmented reality, cloud-based collaboration, and biomechanical analysis software. Data indicate that perceived usefulness of these technologies influences teachers' sense of autonomy and creative engagement directly. Pedagogical approaches should prioritise student-centred methods, formative assessment, and co-creation. Integrating reflective practice and experimentation with digital tools can shift teaching away from traditional transmission models toward participatory, student-focused paradigms aligned with contemporary arts education.

The transition to online learning platforms should be framed as an opportunity for expanded creative expression and professional development rather than a compromise. Students should develop choreographic identity through digital fluency, including multimedia design, online portfolio creation, and effective virtual collaboration. Student-driven projects on digital platforms can enhance creative self-efficacy and motivation. In a globalising arts environment, these competencies are essential. In addition, students need to manage digital overload, cultivate awareness, and critically reflect on mediatised artistic practices.

In anticipating future directions for choreography study, Ukrainian institutions must remain responsive to international trends. The increasing hybridity of choreographic practice demands equally adaptable pedagogies. Engagement with artificial intelligence and generative choreography offers new creative possibilities and ethical considerations, necessitating study models that cultivate critical and creative technological literacy. Simultaneously, digital equity, cultural representation, and artistic freedom must be prioritised. By integrating global innovation with national specificity, Ukrainian dance education can exemplify transformative resilience and imaginative practice.

## CONCLUSIONS

The study contributes to the international dialogue on rethinking arts education in the context of digital evolution. Situated within the Ukrainian context, it examined the interplay of digital competence, technology acceptance, and psychological well-being in advanced choreographic education. For dance education, numbers alone cannot capture the essence of artistic learning. However, when interpreted reflectively, quantitative data can reveal the contours of creative vulnerability, resilience and transformation that define arts education in times of crisis.

Students with higher digital competence demonstrated greater educational engagement, particularly on vigour and self-regulation subscales, highlighting technical skills as a catalyst for engagement. Perceived usefulness of technology correlated positively with psychological well-being for both teachers and students. Higher autonomy, personal growth, and self-acceptance were linked to greater digital integration, especially among students with strong competence. While teachers' digital literacy was associated with use of advanced tools (e.g., motion capture, VR), perceived usefulness emerged as a stronger predictor, suggesting that belief in technology relevance can outweigh technical proficiency in driving pedagogical innovation.

Students with greater access to digital infrastructure, particularly those from Lviv and Kyiv, exhibited significantly higher creative self-efficacy, underscoring the structural impact of regional inequalities on both digital and psychological outcomes. A combined model of digital competence and technology acceptance significantly predicted psychological well-being and creative autonomy, particularly in self-determination and growth-oriented learning. These findings demonstrate that digital readiness in dance education extends beyond technology, intertwining with psychological resilience and institutional equity. While uneven material and emotional exposure remains a key barrier, intentional use of digital tools can enhance aesthetic training, personal development, and professional identity. As Ukrainian educational and cultural infrastructure is rebuilt, new choreographic programs can drive transformation through both technological and human-cantered innovation. Sustainable digital futures in dance require investment not only in hardware but in teachers, pedagogy, and institutional mission.

For dance education, the significance of digital transformation lies not only in its numerical impact, but also in its ability to redefine artistic meaning, pedagogical connections and cultural continuity. The quantitative findings of this study serve as starting points for understanding how dancers and educators navigate identity, agency, and creative responsibility in the digital environment. In times of crisis, such as the one Ukraine is experiencing, digital pedagogy becomes not only a technical solution, but also a cultural practice that supports embodied knowledge, collective memory, and artistic voice.

Several additional methodological limitations should be acknowledged. First, the study relies primarily on self-assessment instruments that are subject to response biases such as social desirability, memorisation effects, and individual differences in self-concept. In the context of performing arts education, participants may overestimate engagement, competence, or well-being due to professional identity norms that value resilience and self-discipline. Therefore, reported levels of autonomy, creative self-efficacy, and engagement should be interpreted as perceived rather than objective measures.

Second, the data collection was conducted in the form of an online survey, which could have led to selection bias. Participants with limited or unstable access to the internet , especially in regions most affected by infrastructure disruptions, may have been underrepresented. This limitation is particularly relevant in the Ukrainian context, where digital inequality is closely linked to geographic displacement and conflict-related disruptions. Consequently, the results may

slightly overstate the experiences of participants with relatively stable digital access and institutional support.

Third, online self-completion questionnaires limit the opportunities for clarification or contextual probing that are often available with face-to-face or ethnographic approaches. Despite these limitations, the use of validated psychometric instruments, regional stratification, and methodological triangulation increases the reliability and interpretive value of the results, and future research would benefit from deeper qualitative designs such as narrative research, embodied ethnography or arts-based research methods to more fully capture the life and somatic dimensions of dance education.

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**20 Swierkowa St., 15-328 Bialystok, Poland**
**tel. +48 857457283**
**e-mail: creativity@uwb.edu.pl**
**http://www.creativity.uwb.edu.pl**