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DIGITAL YOUTH WORK: SCENARIOS OF USING TECHNOLOGY IN THE YOUTH FIELD

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Abstract: *The rapid technological advancement generates changes in all fields of activity, including the youth sector, reshaping youth engagement and empowering. The aim of this paper is to highlight the role of technology in enhancing youth inclusion, participation and growth, while also addressing disparities in digital literacy. In this regard, a literature review was conducted, based on scientific articles, policy frameworks and reports, with a view to emphasize different scenarios for integrating technology within the youth work field, examining practices, benefits, and emerging challenges. The research concludes that there is a need to develop frameworks and models to ensure not only equitable access, but also the effective and responsible integration of technology in the field of youth work. All of these aligned with the needs of different generations and their socio-economic contexts.*

Keywords: *technology; digital youth work; youth field; digital literacy; youth projects.*

JEL Classification: *O14; O17; O19.*

1. INTRODUCTION

The youth work sector revolves around the development of the individual in social and professional areas, leading to greater civic involvement and participation in decision making processes in the community, which drives progress (Janet & Bernard, 2010). The digital revolution reshapes how society operates, the youth sector making no exception. Recent generations (Z and Millennials) are increasingly immersed in digital environments. The youth work field should adapt and integrate innovations into their practices (Kaun, 2011) to meet those growing needs and leverage technology in order to create opportunities for inclusive participation and empowerment.

Digital practices, ranging from virtual learning platforms to advocacy through social media, are examples of engaging the youth in a meaningful way (Dickson et

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al., 2013). This integration, referred to as digital youth work, represents not only an opportunity, but also a challenge for practitioners and policymakers in the field. Experts describe the concept of digital youth work as involving: digital transformation in youth sector practices and addressing digital media platform as tools, activities and content (digitalyouthwork.eu, 2019). Lack of equal access to technology, dilemmas in regards to data privacy, inconsistencies in digital literacy among youths and in digital skills among youth workers highlight the complexity of the shift and the necessity of frameworks or guides towards a responsible transition (Alicja, 2019).

Previous research outlines how youth workers need to make the transition in digital reality with intention and discernment (Hunt, 2019), understanding the importance of digital norms (Baker, 2017) and aligning strategies to the characteristics of different generations (Yust, 2015). Policy frameworks such as Digital Education Action Plan for 2021-2027 or Smart Youth Work initiative have provided a direction for a transition towards digital youth work, emphasising the importance of inclusive strategies, robust infrastructure and continuous professional development for the youth workers (Council of the European Union, 2023). However, disparities persist in cases of communities with fewer opportunities, which could be overturned by understanding the benefits and limitations of the digital tools channeled on supporting youth engagement and personal growth (C. Smith, 2020). Thus, digital youth projects have been started, but there is limited research in evaluating their impact and the added value (Alicja, 2019).

This article aims to get a broader perspective of how technology transforms the youth sector, starting with the following research questions: “How are technologies currently perceived in the youth field?” and “How are emerging technologies currently used in the youth sector?”.

2. METHODOLOGY

The purpose of this literature review is to explore the role technology plays in enhancing youth participation. The paper looks to identify scenarios of technology integration into youth organisations’ activities, examining benefits, challenges and emerging challenges. In this regard, the research is based on synthesizing previous scientific academic articles, policy frameworks or proposals, project reports and case studies.

Regarding the methodology adopted, the review uses a semi-systematic approach, as the need was to make an analysis on interdisciplinary topics, merging perspectives from academic, political and practical sources. We considered this more

suitable for the evolving field of digital youth work, especially because this terminology is new, not widely adopted compared to technology. Therefore, in order to capture both general and specific scenarios of technological applications in youth work, we used keywords such as: digital youth work, technology in youth work, youth engagement, social media, artificial intelligence (AI), blockchain, internet-of-things (IoT), virtual reality (VR), augmented reality (AR).

Studies and reports were selected from databases (Google Scholar, Scopus and institutional repositories, chosen due to their comprehensive coverage of multidisciplinary literature) based on their relevance: recent publications (past 10-15 years to ensure the findings reflect an updated social and technological landscape), at least a few citations or credible sources (from institutions such as the European Commission and SALTO Inclusion & Diversity). Based on data collected and the qualitative content analysis, we identified recurring themes, such as: how technologies are used in youth work, challenges faced by practitioners and policy responses addressing them.

3. RESULTS

Regarding relevance of the study, the Digital Education Action Plan concluded in 2020 that 90% of jobs would require digital skills in the future, while 35% of employees in Europe lack them and 78% of companies consider the lack of digital skills a major barrier (European Commission, 2020). The Commission proposes transitions in education, equipping 80% of the EU population with digital skills and ensuring companies adopt technologies like AI and big data. While direction is set, the path is reinforced with principles such as: inclusive and safe environments, ethical use of digital tools in youth programs – Smart Youth Work initiative (Council of the European Union, 2017), equal access to assistive technologies, continuous training to youth workers, blended learning formats (online and face-to-face), synchronized and asynchronous education tailored to diverse youths needs (SALTO Inclusion & Diversity, 2021).

Such examples of institutional collective efforts establish an initial framework for integrating technology into youth work, as the European Commission tracks youth policy changes in the digital sector using Youth Wiki platform. Some of their recommendations include: introducing digital activities and tools, shifting from consumer to creator in taking informed and safe decisions, sustaining interactive assessments through continuous training and learning opportunities

(digitalyouthwork.eu, 2019). Findings from our qualitative analysis on such reports are summarised in Table 1:

Table 1. Policy level measures (scenarios)

Policy-level measure (scenarios)	Benefit	Challenge
Assistive technologies for young people with disabilities	Improved accessibility	Resource limitations
Creating inclusive online spaces	Increased inclusivity	Access inequality
Workshops on online safety and data privacy	Enhanced digital security awareness	Implementation cost
Guidelines and procedures for GDPR compliance	Ethical data management	Complexity of regulations
Use of collaborative platforms (e.g., Framapad, HOP)	Improved collaboration	Digital skill disparities
Creating online communities with shared interests	Social connection and support	Engagement consistency
Hackathons and ideathons for competence development	Innovation and skill-building	Participant engagement

Notes: based on information from (SALTO Inclusion & Diversity, 2021)

According to prevelance in the papers found and studied, we identified 5 key technologies: AI, blockchain, IoT, VR/AR and digital media. For each technology, we synthesized insights on usage scenarios, benefits and challenges in order to provide a structured overview of existing practices. This highlights opportunities to take action for the youth workers and organizations in the field, based on their area of interest, ranging from education to creativity, as in table 2.

Table 2. Areas related to technology usage in digital youth work

Area	AI	Blockchain	IoT	Digital Media	VR/AR
Education	✔	✔	✔	✔	✔
Health	✔				✔
Digital rights & safety	✔	✔	✔	✔	
Innovation & creativity	✔		✔	✔	✔
Careers & employment	✔	✔			
Advocacy	✔			✔	
Inclusion & accessibility	✔		✔	✔	
Education	✔	✔	✔	✔	✔

Notes: Source – Own representation.

Table 2 reveals a broad applicability, with AI and digital media being most versatile tools. This reflects their capacity to personalize learning, enhance

communication and facilitate accesibility. Moreover, Table 2 highlights the possibility to use multiple technologies to amplify impact in the same area. Such interplays should be leveraged strategically, based on youth workers and organizations priorities, in order to ensure interventions are innovative, but still inclusive and impactful. However, there is a lack of clarity in the youth field in implementing such mixtures of technologies.

Digital media tools, such as those utilized in the YMCA Youth Institute and digital advocacy projects, offer transformative opportunities for storytelling, advocacy, and collaboration in youth work. Artificial intelligence offers diverse applications in youth work, ranging from personalized education to creative endeavors and career guidance. Blockchain technology usually provides a secure framework for credentials, rewards, and decentralized educational processes, fostering transparency and trust. Internet of Things (IoT) enables practical applications in education, improving resource management, safety, and personalized learning experiences. Virtual and augmented reality offer immersive and interactive environments that enhance learning, creativity and engagement. By grouping all scenarios previously identified on the areas they touch, we obtain an overview in Table 3.

Table 3. Areas related to technology usage in digital youth work

Area	AI	Blockchain	IoT	Digital Media	VR/AR
Education	• Personalized learning systems (e.g., smart tutoring) (A. Hasse, 2019) • Democratizing access to education in underdeveloped regions (A. Hasse, 2019)	• Secure digital certifications and reduced fraud (Smolenski, 2021) • Platforms for validated certifications (e.g., Edgecoin, TeachMePlease) (Hameed et al., 2019)	• Sensors for personalized learning environments (Moreira et al., 2017) • Using Arduino and Raspberry Pi for practical education (Oprea, 2019)	• Collaborative platforms for co-writing (e.g., Framapad) (SALTO Inclusion & Diversity, 2021) • Blended learning courses (synchronous and asynchronous formats) (SALTO Inclusion & Diversity, 2021) • Making digital movies, websites, 3D animation, and graphic design (YMCA Youth Institute, 2008)	• Immersive learning environments (Dickson, Vigurs, & Newman, 2013) • Virtual simulations for skill-building (European Commission, 2020)

Area	AI	Blockchain	IoT	Digital Media	VR/AR
Health	• Diagnostic tools for pediatric rehabilitation (V. C. Kaelin, 2021) • Therapy chatbots for mental health (Grove, 2021) • Facilitating social interaction for autistic children (ECHOES project) (Smith et al, 2018)				• Virtual rehabilitation tools for youth (Dickson, Vigurs, & Newman, 2013)
Digital rights & safety	• Risk detection systems for cyberbullying and online risks (Razi, 2021)	• GDPR-compliant data management and security protocols (Kanavas, 2018)	• Real-time monitoring for safer school environments (Moreira et al., 2017)	• Social media campaigns for raising awareness (SALTO Inclusion & Diversity, 2021)	
Innovation & creativity	• Computational thinking projects (LearningML) (J. D. Rodriguez, 2020)	• Blockchain-based rewards for community innovation (Gu et al., 2019)	• Interactive cubes for collaborative learning (e.g., ConnectUs) (Lechelt et al., 2016)	• Digital storytelling for advocacy (YMCA Youth Institute, 2008)	• Immersive storytelling and creative simulations (C. H. Lee, 2022)
Careers & employment	• AI-driven career guidance platforms (Westman et al., 2021) • Job interview simulations (TARDIS project) (Porayska-Pomsta & Chryssafidou, 2018)	• Verified credentials for job mobility (Smolenski, 2021)			• Virtual career guidance scenarios (European Commission, 2020)
Advocacy	• Personalized social media content for youth mobilization (Thackeray, 2010)			• Social media campaigns and blogs for youth participation (SALTO Inclusion & Diversity, 2021)	

Area	AI	Blockchain	IoT	Digital Media	VR/AR
Inclusion & accessibility	• AI tools for marginalized youth (Okkonen & Kotilainen, 2019) • Facilitating participation for autistic youth (Smith et al., 2018)		• Assistive technologies for youth with disabilities (Vihervaara & Alapaholuoma, 2017)	• Creating inclusive online spaces (SALTO Inclusion & Diversity, 2021)	

Notes: Source – Own representation.

Regarding the scenarios, we notice the ability of various technologies to facilitate personalized, inclusive and collaborative practices in limited environments by systemic inequities, such as different levels of access, resource disparities or literacy discrepancies.

All benefits emerging from the use cases identified reveal adaptability, scalability and collaboration. Serving vastly different purposes, technology facilitates development of critical thinking, problem-solving competences and creativity. Moreover, technology enables the optimisation of resources in youth-led initiatives, while empowering youths to take active roles in shaping their personal development. The capacity to ensure transparency, trust and fairness in such processes through credentials is also an important benefit. Through digital media, connectivity and communication are enhanced, thus building a supportive network of mentorship and mutual interests. The digital transition taking into consideration the youth opinions is as important as the innovation itself.

While benefits are promising, implementations reveal structural and practical challenges that stay in the way of broader adoption: inequalities in access to digital resources, lack of digital literacy, financial constraints and lack of infrastructure. This means broader interventions have to be taken into consideration, at policy-making and institutional level to ensure minimal common grounds for transformation or implementation of digital youth work. Also, we identified among challenges a pattern tied to ethical concerns. Data privacy violations and algorithmic biases raise questions of trust in digital systems, especially in contexts like mental health or education.

4. CONCLUSIONS

Our research has revealed a wide range of approaches among organisations, projects or youth workers. This reflects varying levels of knowledge, familiarity, access or prioritization of digital transformation. Therefore, digital youth work is fragmented, as the absence of systematic ways to drive transformation doesn't allow consistent and scalable implementation of technology in youth projects or organizations. Collaboration between policymakers, youth workers, and technology developers is essential in bridging the gap between innovation and practical implementation.

We believe results show the youth sector needs to design a model that can evaluate digital maturity of youth projects or organizations. This would allow organizations to assess their current levels of digital integration and identify steps needed to advance to higher levels of digital maturity, ensuring they are better prepared to implement effective digital solutions and meet the evolving needs of the youth sector. Leveraging interdisciplinary partnerships can accelerate the development of tools and policies that align technological potential with the core values of youth work. Future research could focus on creating ethical guidelines for technology use in youth work or creating impact evaluation frameworks on social, education and economic components.

Regarding this study, an important limitation is the inconsistency in evaluating effectiveness of digital youth projects. While many initiatives claim success, outcomes are not measured based on standards across diverse contexts and this gap could imply subjective considerations in the research done.

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