

RESEARCH ARTICLE

# Technologies For Developing Pupils' Basic Competencies in Extracurricular Activities

Sharipova Gulnora Anvarjonovna

Teacher of Tashkent University of Applied Sciences, Uzbekistan

VOLUME: Vol.06 Issue04 2026

PAGE: 179-182

Copyright © 2026 European International Journal of Pedagogics, this is an open-access article distributed under the terms of the Creative Commons Attribution-Noncommercial-Share Alike 4.0 International License. Licensed under Creative Commons License a Creative Commons Attribution 4.0 International License.

## Abstract

The integration of technology in extracurricular activities offers significant opportunities to develop pupils' basic competencies, such as critical thinking, creativity, collaboration, and communication. This article explores the role of digital learning platforms, gamification, artificial intelligence, virtual reality, and other innovative tools in enhancing these skills. Supported by expert opinions and research, the discussion highlights how technology bridges the gap between academic learning and practical application, providing pupils with a dynamic and engaging environment. Key benefits include improved engagement, equitable access to resources, and the development of digital literacy essential for the 21st century.

## KEYWORDS

Extracurricular activities, basic competencies, digital tools, gamification, virtual reality, digital literacy, pupil development.

## INTRODUCTION

Extracurricular activities play a vital role in complementing academic education by fostering the development of basic competencies such as critical thinking, collaboration, creativity, and communication. The integration of modern technologies in these activities has amplified their potential to cultivate these skills effectively. This paper explores various technologies that enhance pupils' basic competencies in extracurricular settings, supported by expert opinions and relevant research. Developing pupils' basic competencies through extracurricular activities involves the use of various innovative technologies and methodologies. Extracurricular activities are essential in enhancing pupils' practical skills, creativity, and problem-solving abilities, and the integration of technology can significantly improve their learning experiences.

Importance of Technology in Extracurricular Activities. Incorporating technology into extracurricular activities aligns with the growing emphasis on digital literacy and 21st-century

skills. According to Tony Wagner, an education expert, "The world no longer rewards people just for what they know—Google knows everything—but for what they can do with what they know." Thus, the use of technology in non-academic contexts provides pupils with platforms to apply knowledge, engage creatively, and solve problems collaboratively. Technology plays an increasingly significant role in extracurricular activities, impacting both how they're organized and how pupils participate. Its importance stems from several factors:

Enhanced Accessibility and Engagement: Wider Range of Opportunities, online platforms and virtual events allow pupils to participate in activities that might not be physically accessible due to distance or geographical limitations. International competitions and collaborations are more readily available. Online tools allow for more flexible scheduling, enabling pupils to participate in activities that fit into their busy schedules. Increased participation technology can make

activities more appealing and accessible to a wider range of pupils, potentially breaking down barriers to participation based on prior experience or location.

**Improved Organization and Management:** Communication and collaboration, online platforms facilitate communication and collaboration among pupils, coaches, and advisors. Scheduling, announcements, and information sharing are significantly streamlined. Resource management, technology can help with organizing and managing resources like club finances, equipment, and schedules more efficiently. Monitoring and feedback, some tools allow for tracking pupil participation, progress, and providing constructive feedback more effectively.

**Digital Learning Platforms.** Digital learning platforms like Google Classroom, Moodle, and Edmodo have transformed how extracurricular activities are organized and delivered. These platforms enable pupils to collaborate on projects, access resources, and receive real-time feedback. Dr. Linda Darling-Hammond, a leading education researcher, highlights that "platforms that facilitate peer collaboration and teacher feedback can enhance pupils' engagement and competence." These technologies encourage self-directed learning and allow pupils to develop organizational and communication skills essential for the modern workplace.

**Gamification Tools.** Gamification introduces game-like elements into learning activities, making them more engaging and motivational. Tools such as Kahoot, Quizizz, and Minecraft Education are increasingly popular in extracurricular settings. James Paul Gee, a scholar in education and literacy, asserts that "video games teach players to think critically, strategize, and solve problems," which are crucial competencies. For example, Minecraft Education provides pupils with opportunities to work collaboratively on building projects, fostering teamwork and creativity.

**Artificial Intelligence (AI) Tools.** AI-powered tools like ChatGPT, Grammarly, and personalized learning platforms offer customized learning experiences in extracurricular settings. These tools support pupils in research, content creation, and skill enhancement. AI's ability to analyze performance and provide targeted feedback ensures that pupils develop critical and analytical thinking. Dr. Rose Luckin, an expert in AI and education, notes that "AI can scaffold learning in unique ways, helping pupils reach their potential by focusing on their specific needs."

**Virtual and Augmented Reality (VR/AR).** VR and AR technologies provide immersive learning experiences that bridge the gap between theory and practice. Tools like Oculus and AR-based mobile apps are used for virtual field trips, historical reconstructions, and scientific explorations. According to Chris Dede, a Harvard professor of learning technologies, "immersive technologies engage pupils deeply, making complex subjects accessible and memorable." For instance, a virtual tour of a museum can help pupils understand art history while developing their cultural competence and observational skills.

**STEM Kits and Maker Spaces.** Hands-on learning tools like LEGO Education, Raspberry Pi, and Arduino have revolutionized STEM-related extracurricular activities. Maker spaces equipped with these technologies enable pupils to design, prototype, and innovate. Dr. Mitchel Resnick from MIT Media Lab emphasizes that "when pupils create, they learn by doing, which builds deeper understanding and promotes problem-solving skills." These tools also instill a sense of responsibility and independence as pupils take charge of their projects.

**Collaborative Technologies.** Collaboration tools like Slack, Trello, and Microsoft Teams are instrumental in managing extracurricular projects. These platforms facilitate communication and coordination among pupils, teachers, and mentors. John Hattie, a prominent education researcher, highlights that "collaborative learning has a significant positive impact on pupil achievement and engagement." By using these tools, pupils develop teamwork, leadership, and time-management skills.

**Social Media and Content Creation Tools.** Social media platforms and tools like Canva, YouTube, and TikTok can be leveraged to foster creativity and digital communication skills. Pupils involved in clubs or societies can use these tools to create promotional materials, share their work, and connect with a broader audience. According to Dr. Henry Jenkins, a media scholar, "digital tools empower pupils to become creators, not just consumers, of content, enabling them to develop a range of competencies from storytelling to digital literacy."

**E-Portfolios.** E-portfolio platforms such as Seesaw and Mahara provide pupils with a means to document their learning journey and showcase their achievements. These tools encourage reflection, which is essential for developing self-awareness and critical thinking. Dr. Helen Barrett, an expert

in e-portfolios, states that “e-portfolios are a powerful way for pupils to demonstrate their learning and competencies to various audiences, including future employers. ”

Online Competitions and Hackathons. Online competitions and hackathons in coding, design, or entrepreneurship encourage pupils to think critically and solve problems creatively. Platforms like Codeforces, Devpost, and Ideathon provide pupils with opportunities to compete globally, network with peers, and receive mentorship. These events not only enhance technical skills but also promote resilience and adaptability, as noted by Dr. Sugata Mitra , an education innovator.

Learning Management Systems (LMS). Learning management systems like Blackboard and Schoology are valuable tools for organizing extracurricular schedules, resources, and evaluations. These systems provide a structured approach to managing activities and tracking progress. Dr. Curtis Bonk, an expert in online learning, notes that “these systems create a centralized hub for extracurricular engagement, fostering accountability and consistency.”

Using technology in extracurricular activities offers a multitude of benefits, impacting pupils, educators, and the overall experience. Here are some key advantages. Technology can bridge geographical barriers, allowing pupils in remote areas or with physical limitations to participate in activities they might otherwise miss. Online platforms and virtual events extend opportunities to a broader range of pupils. Interactive technology can make learning more engaging and fun, motivating pupils to actively participate in activities and projects. Activities integrating technology help develop critical digital literacy skills, including communication, collaboration, problem-solving, and creativity, all highly valuable in today's world. Pupils can access resources, experts, and information globally through online platforms, enriching their learning experience beyond the immediate community. Some platforms offer customized learning paths that adapt to individual pupil needs and paces, tailoring the activity to their specific strengths and weaknesses. Technology tools allow for novel and creative expression, expanding the ways pupils can engage with their passions and interests (e.g., digital art, music production, filmmaking). Managing online schedules, collaborating with peers remotely, and balancing virtual and in-person commitments can improve time management and organizational skills. Technology simplifies communication, scheduling, and resource management, saving time and increasing efficiency for educators and organizers. Digital

platforms can provide educators with easy access to a vast array of learning materials, tools, and professional development opportunities. Tracking pupil participation, progress, and engagement allows for more informed decisions about program improvement and resource allocation. Virtual platforms enable educators to connect and collaborate with others across schools and organizations, expanding perspectives and sharing best practices. The integration of technology in extracurricular activities offers numerous benefits:

✚ Skill Development: Pupils develop essential competencies such as problem-solving, creativity, and digital literacy.

✚ Engagement: Interactive and gamified tools increase pupil interest and participation.

✚ Accessibility: Technology ensures equitable access to learning resources, regardless of location.

✚ Real-World Application: Pupils gain practical experience by applying their knowledge to real-world scenarios.

✚ Portfolio Building: Digital tools enable pupils to create and maintain portfolios showcasing their skills and achievements.

It's important to acknowledge that technology isn't a panacea. Effective integration requires careful planning, appropriate training, and attention to equitable access to ensure technology enhances, rather than hinders, the benefits of extracurricular activities for all pupils.

## CONCLUSION

In conclusion, technology is transforming extracurricular activities by broadening access, enhancing organization, fostering skill development, and expanding creative opportunities. Addressing the potential challenges, like the digital divide, will be essential to ensure that technology benefits all pupils in their extracurricular engagements. Incorporating technology into extracurricular activities is a strategic approach to preparing pupils for the demands of the 21st century. By leveraging tools such as digital learning platforms, gamification, AI, VR/AR, and collaborative technologies, educators can enhance the effectiveness of these activities. The opinions of experts like Tony Wagner, Linda Darling-Hammond, and Rose Luckin underscore the transformative potential of these technologies in fostering critical competencies. As education evolves, the role of technology in extracurricular activities will continue to expand, creating dynamic and inclusive learning environments that nurture well-rounded individuals.

**REFERENCES**

1. Wagner, Tony, and Robert A. Compton. *Creating innovators: The making of young people who will change the world*. Simon and Schuster, 2012.
2. Armstrong, David. "Students' perceptions of online learning and instructional tools: A qualitative study of undergraduate students use of online tools." *E-learn: world conference on E-learning in corporate, government, healthcare, and higher education*. Association for the Advancement of Computing in Education (AACE), 2011.
3. Martin, Linda E., and Thalia M. Mulvihill. "Current issues in teacher education: An interview with Dr. Linda Darling-Hammond." *The Teacher Educator* 52.2 (2017): 75-83.
4. Luckin, Rose, et al. "Exploring the future of learning and the relationship between human intelligence and AI. An interview with Professor Rose Luckin." *Journal of Applied Learning and Teaching* 7.1 (2024).
5. Resnick, Mitchel. "Behavior construction kits." *Communications of the ACM* 36.7 (1993): 64-71.
6. Jenkins, Henry. *Transmedia storytelling and entertainment: An annotated syllabus*. Entertainment Industries. Routledge, 2014. 145-160.
7. Barrett, Alan, et al. "Fifty plus in Ireland 2011: first results from the Irish Longitudinal Study on Ageing (TILDA)." (2011).
8. Mitra, Sugata, and Vivek Rana. "Children and the Internet: Experiments with minimally invasive education in India." *British journal of educational technology* 32.2 (2001): 221-232.
9. van der Aalst, Wil, Oliver Hinz, and Christof Weinhardt. "Big digital platforms: growth, impact, and challenges." *Business & Information Systems Engineering* 61 (2019): 645-648.
10. Latane, Henry A., and Donald L. Tuttle. "Criteria for portfolio building." *The Journal of Finance* 22.3 (1967): 359-373.