

“Critically review the effect of digital/mobile technology and social media upon outdoor learning”

Outdoor education, rooted through experiential learning, has long been relied on for its ability to foster personal growth, environmental stewardship, and a deeper connection with nature. (Gilbertson et al., 2022) However, as technology continues to penetrate every aspect of our lives (Williams, 2003), its integration into outdoor education programs has become a topic of considerable debate. This essay delves into the pros and cons of incorporating technology in outdoor education, exploring whether it could shape learning outcomes and participant engagement or hinder the experiences.

There can be many benefits of the use of technology within the outdoors (Cuthbertson et al, 2004), this essay will highlight the benefits prior to discussing the barriers of incorporating technology into outdoor education. By contrasting the two, this essay will conclude on whether technology is an asset or hindrance to outdoor education.

There is no doubt that technology can enhance the overall safety of outdoor education.(Whitacre, 2018) This can be done through a multitude of ways, for example, by providing tools such as GPS or emergency communication devices that can be crucial in remote areas. These devices can aid people to get themselves out of dangerous/emergency situations, as well as providing a tracking or locating beacon for emergency services.

The abundance of mobile phones in modern society (Goundar, 2011) renders them a must have tool for outdoor enthusiasts, offering far more than basic emergency communication capabilities. With the development of outdoor specific apps, people can access a vast range of helpful tips, interactive maps, and facts which will further develop the physical and psychological benefits of a session. For instance, mobile apps offer real-time information about flora, fauna, and geographical features, enriching participants' understanding of their surroundings (Leung et al., 2018).

From a facilitation perspective, mobile phones offer a wide array of risk management and safety functionalities, (Kraalingen, 2023) significantly enhancing the safety protocols and emergency response capabilities during outdoor educational experiences. Fundamental to this is the ability of mobile devices to provide real-time access to critical information regarding environmental conditions, such as weather forecasts, tide patterns, and other important factors. By reviewing weather and environmental apps, facilitators can proactively assess potential risks and make informed decisions to ensure the safety and well-being of participants.

Moreover, the utilisation of offline maps and compass apps equips facilitators with essential navigational tools, enabling them to navigate through challenging terrain or adverse weather conditions with confidence and precision. These technological aids serve as invaluable resources for mitigating risks and responding promptly to emergencies, as emphasised by Cotton et al. (2020). By empowering educators with the means to navigate and orient themselves effectively, mobile technologies facilitate swift and efficient decision-making in high-stress situations, thereby safeguarding the welfare of participants.

The ability to monitor weather conditions prior to the commencement of outdoor activities enables facilitators to tailor their sessions to ensure maximum safety and comfort for participants. For instance, in anticipation of extreme heat, facilitators can proactively plan activities in shaded areas and make provisions for additional water and protective equipment. This proactive approach not only minimises the risk of heat-related illnesses but also enhances the overall experience for participants by fostering a safe and conducive learning environment.

The integration of technology into outdoor education not only enhances accessibility for individuals with disabilities but also fosters a more inclusive and enriching experience for all participants. As highlighted by Ballantyne et al. (2016), adaptive equipment, digital resources with alternative formats, and assistive technologies play a pivotal role in enabling individuals with disabilities to fully and independently engage in outdoor activities.

One of the transformative aspects of technology lies in its capacity to facilitate ways of experiencing nature for individuals who may face physical or cognitive challenges. For instance, the use of cameras as aid tools can provide individuals with disabilities with a means to explore and appreciate the intricate details of nature during sensory walks. By capturing high-quality, magnified photos of natural elements, such as flora and fauna, cameras enable individuals to immerse themselves in the beauty and diversity of the outdoors in ways that might not have been possible before.

In addition to using cameras to help capture and showcase the natural elements, technology can serve as a powerful tool for facilitating overall understanding and participation in practical elements of outdoor sessions for individuals who struggle with auditory instructions. Pre-recorded videos that visually demonstrate instructions, such as fitting a harness, offer a clear and accessible means of conveying information, empowering participants to understand and engage with the activity effectively. By removing barriers to comprehension and participation, these videos enable individuals to remain actively involved in the session without causing delays or disruptions.

The integration of digital tools into outdoor education empowers participants to actively contribute to environmental awareness and conservation endeavours. As articulated by Harris et al. (2017), mobile apps and wearable sensors provide learners with the means to collect data on various ecological parameters, including biodiversity, water quality, and climate patterns. Through these technological platforms, participants are not only able to engage in hands-on data collection but also cultivate a profound sense of environmental responsibility and ecological literacy.

One notable application of digital tools in environmental monitoring involves the recording of animal sightings and species observations during outdoor excursions. From using mobile apps designed for sightings and observations, participants can document the presence and behaviour of wildlife encountered in their surroundings. This wealth of observational data serves as a valuable resource for environmental authorities and conservation organisations, offering insights into the distribution and abundance of different species across diverse habitats.

Furthermore, the systematic collection of biodiversity data through digital platforms enables conservation experts to assess the health and resilience of ecosystems, identify areas of high ecological significance, and formulate targeted conservation strategies. By analysing trends in species diversity and habitat occupancy, conservation practitioners can make informed decisions to safeguard biodiversity and promote the persistence of endangered or rare species within a landscape. Additionally, specialised outdoor websites dedicated to environmental conservation and outdoor ethics serve as invaluable resources for promoting environmental awareness and stewardship. These platforms provide access to educational resources, best practices, and community-driven initiatives aimed at preserving and protecting natural landscapes.

The development and use of Virtual Reality (VR) technologies enables a transformative experience in outdoor education by offering immersive simulations of natural environments. These virtual experiences transcend geographical constraints, granting participants access to otherwise inaccessible or endangered ecosystems. As highlighted by Kuo et al. (2020), such immersive simulations stimulate curiosity, empathy, and ecological awareness among participants, fostering a profound sense of connection to the natural world.

By virtually immersing participants in diverse ecological settings, VR technologies encourage a heightened appreciation for the beauty, complexity, and fragility of natural environments. This experiential engagement cultivates a deep-seated sense of care and responsibility towards the environment, compelling participants to adopt more environmentally conscious attitudes and behaviours.

Moreover, VR simulations serve as powerful tools for environmental education and advocacy, enabling educators to convey complex ecological concepts in an accessible and engaging manner. By utilising the immersive capabilities of VR, educators can show the connection within ecosystems, showcase the impacts of human activities on the environment, and inspire a collective commitment to conservation efforts.

By integrating VR technologies into outdoor education, educators can broaden the scope of learning beyond mere adventure and experience, fostering a holistic understanding of the planet and the imperative to protect it. Through experiential immersion in virtual natural environments, participants emerge with a heightened sense of ecological stewardship and a renewed dedication to safeguarding the wild natural environments and species of the world.

The integration of apps into learning experiences offers a dynamic platform for enhancing skill progression and fostering continuous improvement, particularly in coaching contexts. A common practice among coaches is to utilise video recording apps to capture athletes' performances during training or activities. This enables both the coach and the athlete to engage in a reflective process, leveraging technology as a review tool to identify areas for refinement and development.

Through video analysis, coaches and athletes can pinpoint specific aspects of performance that may require further attention or improvement. This reflective process facilitates a deeper understanding of strengths and weaknesses, enabling athletes to refine their techniques, strategies, and decision-making abilities. By identifying areas for growth and implementing

targeted practice regimens, athletes can enhance their proficiency in their sport, ultimately progressing to higher levels of performance.

Technology serves as a powerful medium for highlighting environmental awareness among all outdoor users and enthusiasts, fostering a culture of responsible and informed outdoor recreation. Platforms such as social media, forums, and specialised outdoor websites play a pivotal role in facilitating the exchange of information, experiences, and insights within the outdoor community.

Consider the scenario of an incident occurring at a popular climbing crag, resulting in the dislodging of rocks from the wall. By posting to forums on official climbing websites, such as the BMC Incident Reporting Forum, individuals can promptly report and share details of the incident with the broader climbing community. This live disperse of information serves as a vital warning to other climbers, alerting them to potential hazards and changes in the climbing environment.

Furthermore, the use of social media platforms enables outdoor enthusiasts to raise awareness about environmental issues, share conservation tips, and advocate for responsible outdoor practices. Through the posting of photos, videos, and educational content, individuals can amplify their message and inspire others to adopt eco-friendly behaviours and attitudes while enjoying outdoor activities.

While social media platforms offer a way for individuals to share and promote their outdoor experiences, they also present a host of negative consequences for users. One notable drawback is the prevalence of negative comments and criticism that individuals may encounter when sharing their outdoor adventures online.

The accessibility afforded by social media platforms can sometimes encourage individuals to express negative opinions or criticisms, often without considering the potential impact on the recipient. Negative comments, criticism, or cyberbullying directed towards individuals sharing their outdoor experiences can have detrimental effects on their mental health and well-being. (O'Reilly, et al., 2018) Such experiences may lead to feelings of inadequacy, self-doubt, anxiety, and stress, ultimately detracting from the enjoyment and positivity associated with outdoor activities.

Moreover, the constant exposure to negative comments and criticism on social media can erode individuals' confidence and enthusiasm for sharing their outdoor experiences, potentially deterring them from engaging in outdoor activities altogether. This phenomenon underscores the importance of promoting a supportive and inclusive online community that fosters positivity, encouragement, and mutual respect among outdoor enthusiasts.

The over-reliance on electronic devices in outdoor education poses significant challenges that detract from the immersive and experiential nature of outdoor learning. As noted by Brown et al. (2019), excessive screen time can lead to a diminished appreciation for the natural environment, hindering participants' ability to fully engage with their surroundings and capitalise on sensory experiences.

One notable consequence of excessive screen time is the erosion of attention spans, which can impede participants' ability to maintain focus and sustain meaningful engagement with the outdoor environment. Rather than immersing themselves in the sights, sounds, and sensations of nature, individuals may become preoccupied with their electronic devices, missing out on opportunities for discovery, exploration, and sensory stimulation.

Moreover, the over-reliance from participants on electronic devices may disrupt the flow of outdoor educational activities, as participants may become disengaged or distracted by technology-related distractions. This can pose challenges for facilitators in maintaining a high level of engagement and participation throughout the session, potentially diminishing the overall effectiveness and enjoyment of the learning experience for participants.

The over-reliance on technology in outdoor settings presents a significant risk, as individuals may become codependent on electronic devices for navigation, communication, and emergency response. This dependence on technology can lead to a deterioration of individuals' own skill sets and a loss of proficiency in essential outdoor competencies. Furthermore, technical glitches, battery depletion, or network outages have the potential to compromise the safety and integrity of outdoor excursions, as highlighted by Humberstone et al. (2019).

One notable consequence of codependency on technology is the phenomenon of skill fade, wherein individuals' proficiency in traditional navigation methods or survival techniques diminishes over time due to reliance on electronic aids. In the event of technology failure or malfunction, individuals may find themselves ill-equipped to navigate or address emergency situations effectively, potentially placing themselves and others in danger.

The practical implications associated with the use of technology in outdoor settings present significant challenges for educators and experience providers. One key consideration is the durability and resilience of technological devices, which must withstand the rigours of natural environments. Technology used outdoors must be designed to be waterproof, shockproof, and capable of withstanding adverse conditions such as exposure to water, impacts from drops or collisions with rocks, and fluctuations in temperature.

Moreover, the financial costs associated with incorporating technology into outdoor education programs present a substantial barrier for many centres and experience providers. While some apps may offer basic functionalities for free, accessing advanced features often requires a paid subscription or membership fee. Additionally, the provision of tablets or other technological devices for participants incurs significant upfront costs, including the purchase of equipment and ongoing maintenance expenses.

Furthermore, there are practical considerations regarding the management and security of technological devices in outdoor settings. Centres must ensure that participants handle devices responsibly and do not misuse or damage them. Moreover, there are concerns about data security and privacy, particularly when providing participants with access to digital platforms or online resources.

In conclusion, the integration of technology into outdoor education is indeed an inevitable trend, given the increasingly digital landscape of our world. While technology offers

undeniable opportunities for enhancing learning experiences and engagement in outdoor settings, it is crucial for educators to approach its implementation with careful consideration and mindfulness.

As highlighted in this essay, there are significant challenges associated with the use of technology in outdoor education, including costs, logistical complexities, and practical considerations such as durability and security. These factors may deter some providers from fully embracing digital innovations. However, with careful planning, thoughtful consideration, and prudent use, educators can harness the potential of technology as a complementary tool to enrich outdoor experiences for participants.

By using technology judiciously, educators can develop traditional outdoor learning approaches with digital resources, interactive tools, and immersive experiences that enhance engagement, facilitate learning, and foster deeper connections with nature. From interactive maps and educational apps to wearable devices and virtual reality simulations, technology offers a myriad of possibilities for enhancing outdoor education programs.

Crucially, educators must strike a balance between utilising technology to enhance learning and protecting the integrity and importance of nature-based learning. By integrating technology as a complementary tool rather than a replacement for traditional outdoor experiences, educators can ensure that participants receive maximum benefit from both digital innovations and direct interactions with the natural world.

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