

Unpacking Learning Preferences of Generation Alpha Students: A Scoping Review

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Abstract: This study explores the unique educational needs and preferences of Generation Alpha, the cohort born after 2011, who are characterized as digital natives. Utilizing the scoping review methodology based on Arksey and O'Malley's framework, the research synthesizes findings from studies published between 2010 and 2024 to analyze the ecological, behavioral, and learning traits of this generation. Key findings reveal that Generation Alpha exhibits high levels of digital literacy, a strong inclination towards technology-driven learning, and a preference for interactive, multimedia-rich, and multisensory educational experiences. They thrive in environments offering quick feedback, adaptive learning tools, and autonomy. However, challenges such as screen dependence, reduced social interactions, and risk-taking behaviors are also noted. The review highlights the importance of innovative teaching strategies tailored to their tech-savvy nature while addressing potential cognitive and emotional impacts of excessive technology use. The paper underscores the need for longitudinal research to better understand the evolving learning preferences of Generation Alpha, particularly as they transition into higher education. Future studies should focus on optimizing digital tools for fostering critical thinking, creativity, and socio-emotional skills while mitigating adverse effects like distraction and over-reliance on screens. This research provides valuable insights for educators and policymakers aiming to design effective educational frameworks for this emerging generation.

Keywords: Generation Alpha; Learning Preferences; Digital Natives; Scoping Review; Educational Technology.

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Introduction

The uniqueness of individuals arises from a blend of biological, psychological, and sociological elements. While understanding diverse personalities is crucial for fostering healthy relationships, it is impractical due to complexity. Psychologists like Bowlby, Freud, and Piaget emphasize the significance of early life stages in establishing secure attachment, fostering development, and forming a resilient, adaptable personality. The lifestyle, relationships, and gender roles have significantly changed in the present millennium compared to earlier times.

Social researchers employ various factors like gender, age, region, and occupation to delineate research cohorts. Generation is a widely used cohort in literature. Generation reflects individuals who experienced and responded to the same historical events in the same period. The term 'generational location' is unique to each cohort in a specific historical period (Manheim, 1952; Ryder, 1965). The typical generation length spans 15 years, with Generation X (1965-1980), Generation Y (1981-1995), Generation Z (1996-2010), and Generation Alpha (born from 2011).

Generation Alpha is the first-millennium generation who will live longer, work longer, and be wealthier (McCrindle & Fell, 2020). They will significantly influence technology, education, and markets (McCrindle & Fell, 2020; Tomas et al., 2020). Generation Alpha's education needs to adapt to meet the needs of digital natives to fulfill their potential. Formal education for Generation Alpha is predicted to be unparalleled, with a high percentage obtaining a university degree. Further research is needed to fully understand this generation (Ziatdinov and Cilliers, 2021). The study aims to explore the ecology, learning preferences, and future research scope in Generation Alpha's higher education.

Materials and Methods

To achieve the objectives of the study, a scoping review was conducted on the content of recently (from 2010 to 2024) published research papers relating to Generation Alpha. The method adopted for identifying literature in a scoping study needs to achieve in-depth and broad results (Arksey, O'Malley, 2005). This study adopts a scoping review methodology, examining published data from electronic

databases and searching through reference lists of the relevant papers. Following the Arksey and O'Malley (2005) five-stage framework, the review progresses through stages such as identifying the research question, locating relevant studies, selecting studies, charting data, and collating, summarizing, and reporting results using thematic analysis.

Table: 01 exact the identified research papers for this study.

Author/s	Year	Title of the study	Research Context
Ramadani and Wibisono	2017	Visual Literacy and Character Education For Alpha Generation	The study specifically examines the influence of technological advancements on communication and emphasizes the significance of visual literacy and character education for the Alpha generation. Their discussion revolves around the impact of technological improvements on human interactions, namely in the realm of visual communication, within the context of cyberculture.
Apaydin & Kaya	2020	An Analysis of The Preschool Teachers' Views on Alpha Generation	This study examines the perspectives of preschool educators in the Antalya province regarding the Alpha Generation. The study employed a qualitative case study design, purposive sampling, and conducted semi-structured interviews. An analysis was conducted on the data to reveal themes pertaining to teachers' perspectives. The objective was to offer valuable perspectives for the literature on educational management and to direct the formulation of policies that cater to the requirements of the Alpha Generation.
Zaidinov & Cilliers	2021	Generation Alpha: Understanding the Next Cohort of University Students	This paper investigates the distinctive attributes, inclinations, and anticipations of Generation Alpha in the context of higher education. It examines how these factors influence teaching and learning methods, as well as the role of technology, social media, and experiential learning in shaping their educational encounters at universities. The study emphasizes the necessity for innovative teaching approaches tailored to this particular generation.
Silva, Bussadoni, Santos, and Rezende	2021	Behaviour Management of the Contemporary Child in Paediatric Dentistry: An Overview of the Research	The study investigates behavior control strategies for modern youngsters, particularly Generation Alpha, in the field of pediatric dentistry. This emphasizes the significance of comprehending and tackling the requirements of young children, who possess distinct attributes

Author/s	Year	Title of the study	Research Content
Drugas, M.	2022	Screenagers or "Screenagers"? Current perspectives on Generation Alpha.	The study explores the attributes and consequences of Generation Alpha. Drugas analyzes the obstacles and possibilities faced by Generation Alpha, with a particular emphasis on how their technology-saturated upbringing influences their cognitive growth, social connections, and general welfare.
Arslan, Esenaleva, & Doğan	2023	Generation Alpha from the Perspective of Faculty Members	The study examines the level of awareness and preparedness among faculty members about Alpha Generation students in higher education. The study investigates the perceptions of learning styles, characteristics, and technological integration among Generation Alpha students. The study investigates the influence of these perspectives on instructional approaches, interactions within the classroom, and the overall educational setting.
Hutajulu et al.	2024	Special characteristics of Alpha Generation Children Behavior in Dentistry: A Literature Review	The literature study on Generation Alpha largely focuses on comprehending the influence of technology on the learning preferences and behaviors of the newest generation in educational settings.

Results and Discussion

Ecology of Generation Alpha

High Exposure to Digital Technology: Based on the information gathered from the literature, Ramadlani and Wibisono, (2017) categorized generation alpha as ‘digital natives’ owing to the considerable early exposure to digital technology. Along the same line of thought, Hutajulu et al., (2024) noted that Generation Alpha is more profoundly connected with dig tech devices and platforms due to the early childhood exposure status. Drugas (2022) also stressed that this generation is informally called tech-savvy, which means that they have been raised with computer technology and are already accustomed to be under screens two-thirds of their lives. Also, they don't think twice about sharing their experiences with others.

Consequently, they do not require privacy. (Barkowitz, 2016). Also, Ziatdinov & Cilliers, (2021) note that Generation Alpha is born into a digital environment, exhibiting high technology literacy compared to some educators.

Technology and Screen Dependence: Drugas (2022) indicated that one of the generation alpha attributes is growing up in front of the smart device screens and social media with familiarities with Instagram and Snapchat. In a recent article published by Drugas (2022), he coined what he called “Screamagers” which he attributed to possibly affect the later generation known as Gen Alpha thanks to the abuse of screens. In their study, Ramadlani and Wibisono (2017) have established that this generation utilizes display screen and touch devices most of the time a tale of interaction and behaviors that are digitally altered strongly. Similarly, Ziatdinov & Cilliers, (2021) highlighted that the Generation Alpha's learning style is largely dependent on and connected to technology, which influences their perceptions and expectations related to education.

Individualistic Behaviour: Hutajulu et al. (2024) also pointed out that Generation Alpha overemphasizes individuals' independence and self-concerns as compared to other generations like generation Z. Barkowitz (2016) did ethnographic research on the Alpha Generation, which revealed that the group dislikes sharing and prefers to own everything themselves. Drugas (2022) also mentioned potential negative character, including improper temper, self-centredness, and questionable absence of traits like loyalty, being thoughtful, compassionate, or open-minded and responsibility.

Information Processing Skills: This is because generation Alpha has advanced abilities in processing the information and showing versatile in handling many tasks at once due to availability of digital technology(Hutajulu et al. , 2024). Ramadlani and Wibisono (2017) noted that this generation is versatile in the way they organize information within a short span of time owing to their element of digital literacy. Similarly, Ziatdinov & Cilliers, (2021) highlighted that the Generation Alpha demonstrates high levels of perception, effective use of numbers, meticulousness, and emotional intelligence. Both Generation Z and Generation Alpha share a tendency towards technology, with Generation Alpha being more

open towards knowledge and having high numerical intelligence (Ziatdinov & Cilliers, 2021).

Creativity and Dynamism: In a recent article authored by Drugas (2022), it is revealed that Generation Alpha is more innovative and inquisitive as compared to earlier generations.

Self-Determined: As it is already mentioned, Generation Alpha shows signs of self-determination, which means that they are capable of responding to conflicts in an independent manner (Drugas, 2022).

Need for Recognition: Referring to the same paper, with the permission from the author, I would like to highlight the fact that one of the areas to consider when designing teaching and assessment strategies for the generation alpha is the 'need for recognition'. Likewise, Jha (2020) informed that they probably expect achievement, accomplishment, and appreciation also their attention-seeking behavior was prominent. Generation Alpha is infamous for posting their experiences and opinions online; thereby, influencing social media and other aspects of the modern world (Jha, 2020; McCrindle & Fell, 2020).

Risk-Taking Behavior: As stated by Drugas (2022), risk-taking behavior has been widely recognized as one of the most significant problems parents and educators face. Jha (2020) posited that dimensions like self-entitlement, vindictiveness, emotional dysregulation, boredom susceptibility, and sensation-seeking are permeating and likely to gain prominence among Generation Alpha as time goes on.

Less Social Formation: In their works, McCrindle and Fell (2020) pointed out that the Generation Alpha has limited formation compared to previous generations as they spend more time on computers, smartphones and tablets, and playing games through apps. However, this generation may prove to be even more culturally diverse than previous generations because of the possibilities for global interactions that the ease of digital technology offers. Generation Alpha is better known as the/net generation as they are the most globally connected compared to any other generation. Also, Ziatdinov & Cilliers, (2021) highlighted that Social

media platforms have a significant influence on Generation Alpha, shaping their learning styles and necessitating innovative teaching methods.

Learning Preferences of Gen Alpha

Online Reading and Learning: Hutajulu et al. (2024) found that Gen Alpha effectively applies online reading skills and demonstrates a strong ability to interpret information through digital mediums. This study also highlighted their propensity for engaging in online learning activities. The COVID-19 pandemic further accelerated technology integration in education for Generation Alpha, leading to early and extensive exposure to online learning platforms and virtual classrooms (Drugaş, 2022).

Interactive and Engaging Content: Generation Alpha's early and extensive use of technology fosters a preference for digital learning tools and resources. Drugaş (2022) emphasized that this generation gravitates towards interactive and engaging educational content, such as educational apps and games. Similarly, Ramadlani and Wibisono (2017) noted that Gen Alpha responds positively to interactive and engaging learning materials, thriving in environments that offer hands-on experiences, simulations, and multimedia elements that capture their attention and facilitate active participation. Also, Generation Alpha expects visual, aural, and kinesthetic methods to be used in classroom management, and they are more prone to distractions (Ziatdinov & Cilliers, 2021).

Multisensory Learning: Ramadlani and Wibisono (2017) highlighted that Generation Alpha prefers visual and audio communication over text-based messages, reflecting the importance of visual literacy in engaging with this generation. Hutajulu et al. (2024) also noted that Gen Alpha students favor the use of visual, auditory, and kinesthetic tools for learning. This preference is further supported by Drugaş (2022), who observed that Gen Alpha's familiarity with multitasking, facilitated by technology, influences their preference for activities allowing simultaneous engagement in multiple tasks. Consequently, Generation Alpha shows a strong preference for visual and multimedia learning materials, which aligns with their digital literacy and comfort with multimedia formats (Ramadlani & Wibisono, 2017).

Quick Answers and Immediate Feedback: The tendency of Generation Alpha to seek quick answers and immediate feedback is influenced by their exposure to instant information and communication technologies (Drugaş, 2022). This preference underscores the importance of incorporating rapid response mechanisms in educational settings to maintain their engagement and facilitate effective learning.

Dependence on Technology: Gen Alpha's learning is heavily dependent on digital and communication technologies, including social media (Hutajulu et al., 2024). Their familiarity with these technologies means that they benefit significantly from educational approaches integrating digital tools and platforms. They are comfortable using devices for learning purposes and appreciate interactive apps, and educational games, and noted that online resources enhance their understanding and engagement (Ramadlani & Wibisono, 2017). Similarly, Ziatdinov & Cilliers, (2021) Generation Alpha's learning style is largely dependent on technology, and they are well-versed in interacting with digital devices such as smartphones, iPads, and laptops.

Adaptive and Flexible Learning: Drugaş (2022) suggests that Generation Alpha exhibits cognitive flexibility and adaptability, indicating a preference for learning environments that allow for autonomy and decision-making. This adaptability aligns with their comfort with technology and the dynamic nature of modern educational tools.

Scope of the Future Research in Gen Alpha

While comparing Gen Z with other generations, including Gen Alpha, in terms of their learning attitude, behavior, and academic ability, it is possible to gain important information and better understand how learners transform in the age of digital learning (Apaydin & Kaya, 2020). This implies that at the time of this study, Gen Alpha students enrolled in primary and secondary schools many are expecting to join universities in the near future. Research following the development of Gen Alpha students over time where their learning preferences, behavior and progress is followed over an extensive period to identify changes that occur across the different year levels could provide further insight into understanding this generation and their education needs (Apaydin & Kaya, 2020).

As per Apaydin and Kaya (2020), more studies are need to explore the factors of IT use in education in Generation Alpha in the future contributions. This can entail examining the factors that define the impact of different technologies assisting infancy to learn and interact more effectively. Likewise, Drugaş (2022) draws attention to the fact that more research needs to be conducted on the effectiveness and motivational effects of digital learning environment and educational tools in the learning process and engagement of the Generation Alpha. Ziatdinov and Cilliers (2021) also point out the need to research about the effects of innovative technology in determining the learning modalities and grounded inclinations of Generation Alpha students, plus, the efficiency of visual, auditory and physical approaches on leaning trends and accomplishment levels of the students.

Consequently, adequate research on the various ways in which excess technology use impacts their cognitive, social, and emotional learning is crucial (Druguş, 2022). Further research about the socioprofile of students of Generation Alpha, especially on how they engage technology and present minimal social interaction, can be of relativity value in understanding their growth in formal education (Apaydin and Kaya, 2020).

Future studies could continue the exploration of parenting practices and attitudes of the parents of the Gen X, Y and Z as opposed to those of the Alpha Generation. To answer the research question, it could be informative to identify the relations and dynamics of parenting styles and Gen Alpha children's development and learning (Apaydin & Kaya, 2020). Therefore, it is important comprehension how to enhance the approaches of effective parenting and educators to help Generation Alpha improve learning preferences as well as socio-emotional behavior while handling Information Communication Technology devices (Druguş, 2022). Ziatdinov and Cilliers, (2021) recommend that future research focus on seeking ways of closing the digital technology differentials particularly when teachers are in touch with their students from Generation Alpha with an aim of improving the quality of delivery of services.

Analyzing how multitasking affects the Generation Alpha students, particularly their attention span, and their academic performance is crucial to deciphering how device distractions affect learning performance (Drugaş, 2022). Further research is required for the implementation of local and international strategies that will enable Generation Alpha to foster critical thinking skills in the era of the digital world and learn to discern credible information from the social media posts (Drugaş, 2022). However, to identify the educational potential of technology in teaching creativity, innovation, and problem-solving skills to Generation Alpha, it is necessary to discuss the integration of these tools in their learning process, as well as their excessive usage of the devices (Drugaş, 2022).

It is therefore crucial to comprehend how screen time as well as social media and digital interactions impact the mental health and wellness of Generation Alpha and the hazards, as well as advantages, that may be contained therein (Drugaş, 2022). Particularly, in the sphere of learning, future research might consider the effects of social media networks on performance and on students' interactions within university settings as suggested by Ziate and Cilliers (2021).

Conclusion

Personal identification refers to the combination of biological, psychological, and sociological characteristics that define an individual. The focus and understanding of diverse personalities are essential yet difficult, leading social researchers to rely on generational cohorts to aid in analysis. Generation refers to discrete parts within cultures that undergo historical events and advancements in distinctive manners. These groupings are referred to as generational cohorts, encompassing Baby Boomers, Generations X, Y, Z, and Alpha. Gen Alpha, the generation born fully in the postmillennial era, is projected to become the largest generation ever recorded by 2020. A comprehensive examination of children's development is essential to comprehend the initial and significant impact of technology on their learning preferences and activities, considering their early and extensive exposure to electronic devices. Contemporary children interact with various types of multimedia and social media, and they typically choose content that is more lively and attractive. Nevertheless, the impact of these technological breakthroughs on their intellectual and social development remains undetermined.

Recognizing the changes in parenting methods and how they affect the appropriate schooling and socio-emotional growth of Generation Alpha is of utmost importance. Given the widespread influence of electronics, it is important for study to examine how they engage in multitasking, maintain focus, accomplish tasks, and enhance their critical thinking abilities. Generation Alpha is characterized by a heightened affinity for digital technology and the internet as a tool. However, they also encounter certain drawbacks. Emphasizing the importance of conducting longitudinal and subsequent research on the influence of technology on future employment is crucial. It is vital for the successful development and progress of technology in our contemporary society, which impacts every aspect of our life.

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