Human Educators in 2050: Anticipating *The Artificials*

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ABSTRACT

The COVID-19 pandemic triggered profound changes in the global education landscape, triggering tertiary institutions to escalate investments in education technology (EdTech) and permanently adopt innovative, online initiatives. As the dust settles on these disruptions, individual human educators at universities are preparing for the next unavoidable waves of EdTech that will accompany the arrival of the next generation of new learners; Generation *Alpha (Gen Alpha)*, born between 2010 and 2024. However, with the passage of time, many of these *Gen Alphas* will ultimately become parents themselves, supporting their own offspring's admissions into universities around 2050. By that time, human educators will be working firmly within the framework of an educational model driven by Artificial Intelligence (AI) and dispense university courses to this yet to be born generation who are expected to propagate their own natural curiosities for artificial concepts, hence referred to as *The Artificials* (born 2025-2039).

This new cohort of young learners are projected to absorb knowledge differently, having grown-up in a world shaped directly by revolutionary technology and *Strong AI,* they will bring to university their own particular set of unique learning styles. This article makes predictions about this new education realm and explores the notion of a typical university teaching and learning experience in 2050 as human educators discover the nuances of *The Artificials*. While it is anticipated the university domain in 2050 will be largely governed by a sophisticated *Strong AI*, future recruiters will be judiciously screening for *The Artificial* graduates who have successfully completed the highly sought-after human literacy and soft skills courses at the university level, essential for genuine human interaction, in order to grow a competent and capable workforce.

Keywords: human educators, EdTech, Strong AI, educational models, The Artificials, soft skills, emotional intelligence

STRONG AI AT UNIVERSITY IN 2050

Presently we live with *Artificial Narrow Intelligences or Weak AI* systems which are essentially learning algorithms that are designed to accomplish laborious, repetitive tasks such as image and facial recognition, chatbots, self-driving vehicles and recommendation engines (Ng & Leung, 2020). University human educators already are familiar with a teaching domain influenced by *Weak AI* models that complete administrative tasks. However, by 2050, researchers predict that a *Strong AI* will offer applications that mimic some actions of a human being, including our capacity to reason, understand and perform complex tasks (Aoun, 2017; Dong et al., 2020; Ng & Leung, 2020; Wirtz et al., 2018). It is anticipated that tertiary institutions world-wide will not only adopt this sophisticated *Strong AI* but be significantly governed by its robust and adaptive behaviour to revolutionize content delivery, assessment, and managerial tasks and provide unprecedented efficiency and personalization, similar to a human, as shown in Figure 1 (Durmus, 2019; McMurtrie, 2023; Wirtz et al., 2018).
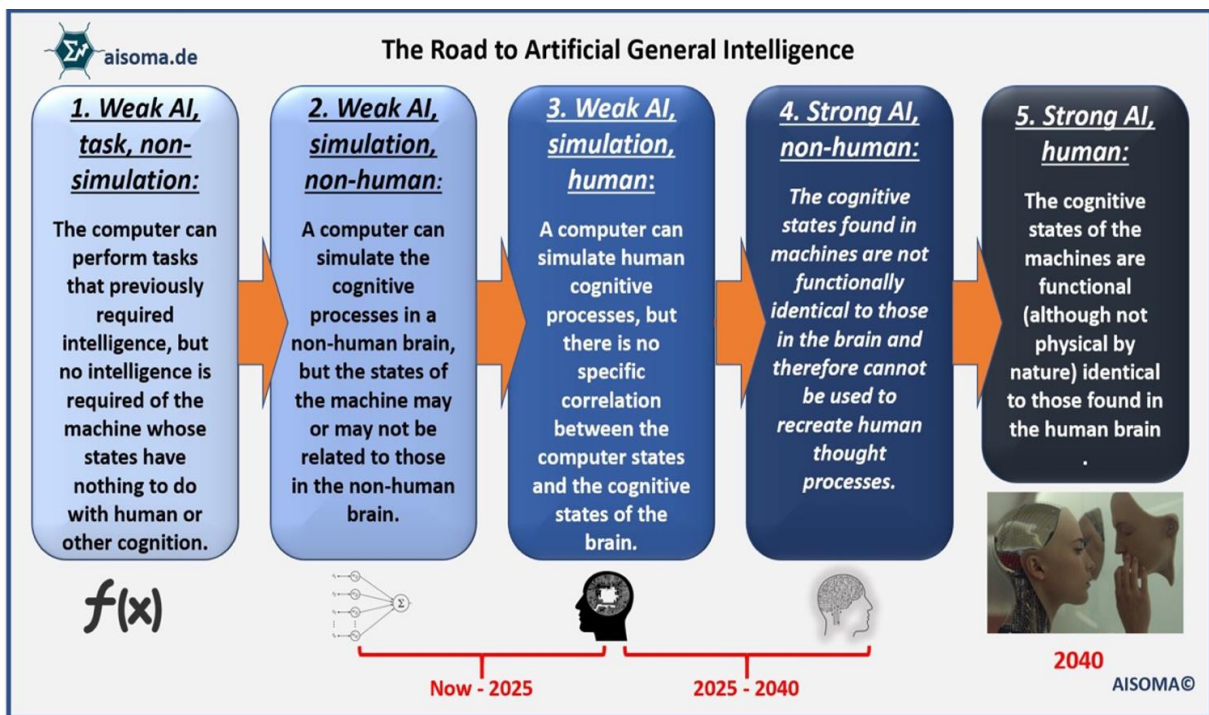
Figure 1: The Road to Strong AI

Note. Murat Durmus, author of the *AI Thought Book* which includes 13 coloured illustrations & 3 essays for the fundamental understanding of AI. From "5 variations of Artificial Intelligence" by M. Durmus, 2019.

It has been predicted by some analysts of Edtech that in order to provide personalized learning experiences, the conventional one size fits all educational model currently used by many universities globally, will be gradually superseded by *Strong AI*-powered adaptive learning platforms (Bhutoria, 2022; Borbajo, 2023; Graesser et al., 2012). With the increased use of more robust AI-driven virtual assistants providing instant access to information, course materials, and academic queries, this custom-made approach will enable learners to progress, be graded at their own pace and receive bespoke, targeted support (Roser et al., 2015). More significantly, the reach of *Strong AI* in the university arena will gift human educators more time to focus on higher-order pedagogical activities and learner engagement (Aoun, 2017; Joshi, 2022). This means that human educators will have the opportunity to build upon *The Artificial* learners' well-established academic toolkit of reading, writing, arithmetic and technological literacies, with especially commissioned subjects such as human literacy.

THE VALUE OF A HUMAN EDUCATOR IN THE UNIVERSITY DOMAIN 2050

Currently the human educator function is regarded as more than a simple data delivery role within the university educational model, commonly operating as role models, giving direction on academic pathways, helping guide to make decisions, pointing out overlooked opportunities, generally preparing learners for the trials of the workforce and the real-world (McCrindle & Fell, 2021). As opposed to machines, human educators possess unique qualities, such as empathy and emotional intelligence, which enable them to cater to students' diverse emotional needs, stimulate purposeful intellectual discussion and make emotional connections (Ishizuka, 2019). Social instruction with a human touch fosters trust, motivation, and engagement, generating a conducive learning environment where learners are encouraged to be creative, and above all feel valued (Polson & Scott, 2018; Zarei et al., 2021).

Even *Strong AI* will lack the ability to offer genuine emotional support or form authentic

connections with learners which means the demand for human educators is predicted to intensify not diminish (Haddadin, 2013; Tai, 2020). While *Strong AI*-driven platforms will provide anthropomorphic, immediate feedback that might mimic a human response, the interaction skills of a human educator will always outrival *Strong AI* in providing precise feedback that nurtures a learners' growth and development and provide a sense of belonging to a community of practice (Kovanović et al., 2015).

WHO WILL RAISE AND EDUCATE *THE ARTIFICIALS?*

To consider the characteristics of *The Artificials* it is important to first gain some insight into the influences and inspirations of their parents who will start having families in or around the 2030 mark, the *Gen Alphas,* as shown in Figure 2. The *Gen Alphas* emerged in 2010, the year the iPad was launched, which is probably why they are also known as *Generation Glass* or *Screenagers,* as these devices have been a natural extension of their daily digital lives. The next generation are already being shaped by ground-breaking technology and *Weak AI*, making them uniquely the very first generation to grow up in an entirely digital world, resulting in unparalleled tech-savviness (McCrindle & Fell, 2021). They are accustomed to instant access to information, rapid communication, and interactive learning experiences and are very familiar with being taught by human educators who are sensitive to their particular learning style and are able to leverage technology and adapt instructional methods that align with their individual learning needs (McMurtie, 2022).
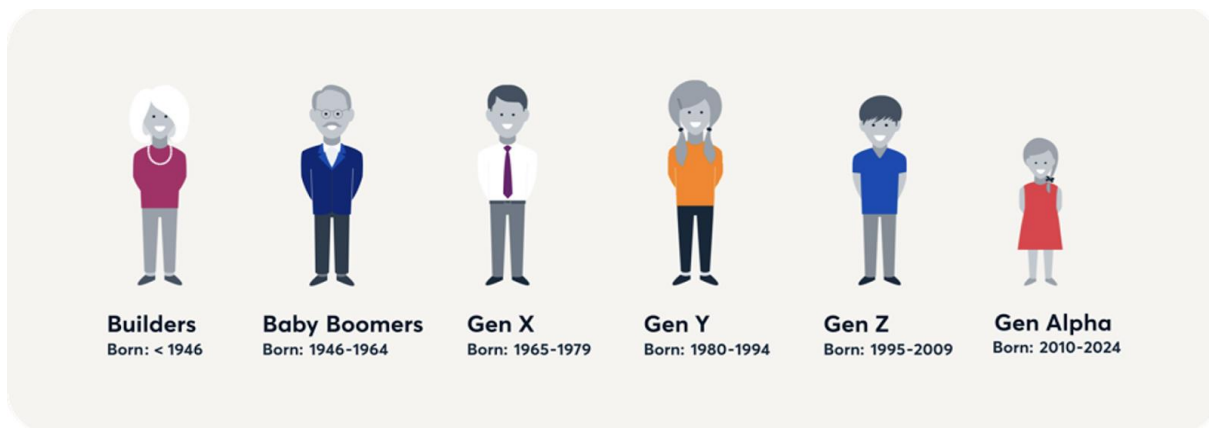

Figure 2: The Generations Defined
Note. McCrindle is a social analyst and demographer who tracks social trends and analyses generations coining the term for the latest generation, Generation Alpha. From *Generation Alpha: Understanding our children and helping them thrive*, by M. McCrindle & A. Fell, 2021.

While terrorism and war frequently overshadowed the generations from *the Builders* to the *Gen Zs*, the predominate social marker that has punctuated *the Gen Alphas'* life experiences to date, has been the Covid19 pandemic, as shown in Figure 3. This global transmissible disease kept the *Gen Alphas* locked down at home for long periods in virtual remote learning environments and fortified many learners to be autonomous co-creators in their own self-directed studies as they became increasingly comfortable with intelligent machines (McCrindle & Fell, 2022). Research goes further to suggest that in some cases *Gen Alphas*, are now preferring to choose to spend more time with technology rather than humans (Anderson, 2018; Hernandez-de-Menendez, 2020; Tai, 2020). The everyday recognizable and predictable responses and interactions from these intelligent machines that surround the *Gen Alphas* offers a sense of familiarity for these young learners, leading to a natural predisposition to prefer to engage with machinery rather than other humans for various tasks and needs (Hernandez-de-Menendez, 2020; Tai, 2020).
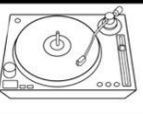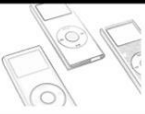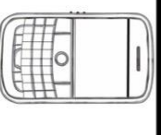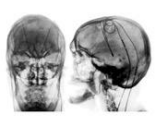
Figure 3: Generations: Social Markers & Devices
Note. Own Work

This growing ease and comfort with technology like Chatbots (as shown in Figure 4) among the *Gen Alphas* challenges the traditional perceptions of social human interaction and growth and raises intriguing questions about the future dynamics of human-machine relationships (Daugherty & Wilson, 2018; Jones et al., 2021). This leads to the notion that in order to adapt educational and social frameworks for future generations such as *The Artificials*, it will be critical to closely observe the technological habits and daily routines of their parents, *the Gen Alphas*, to compare the types of technology they are using, the time spent and their level of human interaction (Daugherty & Wilson, 2018). Some alarms have already been raised about the current generation, *Gen Alpha* and the potential impact of their over reliance of AI in education even suggesting a tendency of learners choosing to interact more with AI trained and digital versions of themselves on social media rather than human exchanges (Garcia & Miller, 2020). It is likely that these *Gen Alpha* parents will seek out advanced *Strong AI* applications to enhance all aspects of their children's lives and easily support this next generation, *The Artificials,* in the transition from Weak AI to *Strong AI* context with relative ease. However, it will be interesting if human interaction will be prioritised and ranked high on the education agenda as fundamental for social and emotional development.

Current Generations in 2023: Anticipating The Artificials						
Category	**Builders**	**Boomers**	**Gen X**	**Millennials**	**Gen Z**	**Gen Alpha**	**The Artificials (hypothetical)**
Born	Pre 1946	1947-1964	1965-1979	1980-1994	1995-2009	2010-2024	**2025-2039**
Personality	neutral	reliable	cognizant	creative	explorers	connected	**introverted**
Slang	prescriptive grammar	fink wet rag	peace out cool	what sup ghosted	awks YOLO	hundo IDRC	**betame buzzbot**
Social Markers	World War 2	Cold War	moon landing	world wide web	Sept 11	Covid 19	**strong AI**
Iconic Cars	T-Ford	Mustang	Hummer	hybrids	Tesla	self-drive	**autonomous**
Devices	record Telegraph	cassette telephone	walkman Fax	iPod flip mobile	iPhone laptops	IoT iPad	**holographic biometrics**
Social Media	X	X	Bulletin Board	messaging Six degrees	Facebook LinkedIn	Twitter Instagram	**immersive avatars**
Leadership	control	direction	coordinate	guide	empower	inspire	**inclusive**
Learning	memory	structure	participate	interactive	eclectic	virtual	**socratic**
Influence	official	expert	practitioner	peer	forum	chatbots	**human-like AI**
Marketing	print	mass	targeted	linked	social	real time	**bespoke**

Figure 4: Current Generations in 2023 & Anticipating *The Artificials*

Note. Adapted from ABS, McCrindle "Future Forecast" infographic *Generation Alpha: Understanding our children and helping them thrive,* by M. McCrindle & A. Fell, 2021.

PREDICTING THE TRAITS OF *THE ARTIFICIALS*

This unique group of young learners*, The Artificials* (born 2025-2039), will begin enrolling in the university system around 2050 and will have been fundamentally influenced and shaped by their daily interactions with intelligent machines and *Strong AI* as shown in Figure 4 (Daugherty & Wilson, 2018; Magni, 2023; McCrindle & Fell, 2021; Tai, 2020). As *Strong AI* becomes more integrated into their everyday life and education, *The Artificials* are projected to display exceptional problem-solving and analytical skills, owing to their early exposure to AI-driven learning tools (Johnson & Johnson, 2014). However, alongside ramping up their technological skills, modifications in their communication style might develop with favouring more well-organised, succinct, efficient and data-driven interactions, rather than spontaneous, organic human connections (Jones & Lee, 2021).

This propensity for both *Gen Alphas* and potentially *The Artificials* to lean towards more synthetic models for collaborating and communicating will greatly impact on how they develop their social skills, the growth of their emotional intelligence and how they successfully express themselves with other humans. While the traits of the next hypothetical generation are still speculative, it is clear that *Strong AI's* pervasive presence will undoubtedly form a significant portion of *The Artificials'* worldviews and their unique style of communication.

This leaves human educators playing a critical role in catering to certain demands and specific changes in the characteristics and learning styles of the next unborn generation, *The Artificials.* While tailored, personalised *Strong AI* instruction might be one solution, human educators will still have the distinct advantage to leverage their own emotional intelligence and highlight human connections to create a learning environment that prepares *The Artificials* for meaningful interactions with other humans within that AI-driven world (Zarei et al., 2021).

CHANGING EDUCATIONAL MODELS BY 2050

Since the late 19th century, the idea of being formally educated has been trending and nowadays to be awarded a university degree is still seen as noteworthy in most modern societies around the world. For those learners who are the fortunate elite who can afford internet access along with the EdTech devices necessary to successfully learn and graduate, they have experienced some of the tech disruptions that have shaped education to date; remote learning, blended learning, online testing, flipped online classes, MOOCS, simulators, gaming, 3D printing, hybrid classes, biometrics and augmented and virtual reality and flexible displays (Mystakidis, 2022; Mystakidis et al, 2022).

However, despite impressive EdTech advancements in absorbing and delivering information in the Metaverse, the conventional educational model has remained largely untouched since the 19th century. For example, global educational systems still divide learners by age, deliver off standardised curriculums with specific subject matter, offer the same style of examinations such as quizzes and oral presentations and all operated by a central, hierarchical control centre within each institution (Chrispeels & González, 2023; Holcombe et al., 2023).

Thus, human educators are currently functioning in a digital age, facing a *Strong AI* age with educational models stuck in the industrial age, with the knowledge that when society changes so must education. It is critical that the educational models be modified to not only accept the innovative, tech-driven pedagogies but engage the human educators' offering of personalized, human teaching and learning experiences (McMurtrie, 2023; Zarei et al, 2021).

SIGNIFICANCE OF LEARNING SOFT SKILLS AT UNIVERSITY & BEYOND

In the fast-paced and tech-driven world of 2050, soft skills, such as face to face human contact and communication, emotional intelligence, problem-solving, and adaptability, will be essential for *The Artificial* learners to navigate complex face to face relationships with humans (Sandeep & Ranganatham, 2018). While *Strong AI* can facilitate content delivery and assessment, the teaching of soft skills is best nurtured and developed through physical human interactions. Human educators can design experiential learning activities, group discussions, and role-playing exercises that promote collaboration, communication, and emotional aptitude (Kalaitzidakis, 2019). Emphasizing the importance of soft skills in the curriculum will empower learners to become balanced individuals who can effectively contribute to and participate successfully in society and the workforce (McMurtrie, 2023).

Emotionally intelligent conversations between human educators and learners will be necessary as managing emotions is essential for building strong relationships (Graham, 2022). Human educators who are mindful of emotional intelligence will not only empathize with their learners, identify weak areas of concern and understand their emotional needs but will be able to build a level of trust and rapport that cannot be simulated with a machine (La Count & Jackson, 2019; McMurtrie, 2022).

Furthermore, in this digital age of continuous flows of information, teaching depth of thought will be a critical skill in demand for *The Artificial* learners in 2050. While *Strong AI* might be able to process vast amounts of data and provide quick answers, human educators will be able to guide learners through complex problem-solving multifaceted tasks that require critical thinking and analytical skills (Christensen et al., 2017). By incorporating interactive and experiential learning activities, human educators can create a supportive environment that encourages deeper investigations, intellectual curiosity and inspires learners to explore diverse points of view (DiMaggio, 2019). Human educators will have the unique capacity to challenge *the Artificial* learners to go beyond surface-level understanding and develop a deeper analysis of complex concepts, cultivating their competence for original thinking and creativity (Ziatdinov & Cilliers, 2022).

While *Strong AI* will automate many tasks, soft skills such as communication, adaptability, and human interactions in teamwork will still be uniquely human traits that will be indispensable for effective collaboration and leadership in future workplaces (Karimi, & Pina, 2021; Satpathy et al, 2020). Employers will continue to seek out candidates who possess strong soft skills in addition to technical competencies, as these abilities are crucial for building positive work cultures and driving innovation (Haddadin, 2013). Human educators will play a vital role in nurturing these soft skills in learners, empowering them to thrive in a future job market that demands both technical expertise and strong interpersonal abilities (McMurtrie, 2022).

CONCLUSION

Three principal investors will be interrelating in 2050 to shape the tertiary educational model; the human educators, their fledgling *Artificial* generation of new young learners and *Strong AI*. While *Strong AI* will principally revolutionize how content is delivered, the spotlight will be on the human educators to cultivate and nurture the depth of thought and the emotional intelligence of *the Artificial* learners. However, human educators themselves need to acquire expertise in soft skills, persuade their organisation to include these communication proficiencies in their university programs and continue to embrace the inevitable waves of *Strong AI* by constantly refining their EdTech skills and knowledge. Then, the 2050 *Artificial* university graduates, will be poised to be purposeful, well-designed functional humans equipped for a *Strong AI* driven, evolving workforce.

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