The EdTech industry: Effects of Increased Technology in Education on Students

As technology has integrated itself into everyday life, it has also firmly planted its roots in the education system. Even more so since online schooling has been forced upon students around the globe. Technology utilised for education purposes is commonly referred to as EdTech, with 58% of this sector focusing on Primary aged students (Bolton, 2020), this influenced the design and focus of my product. Its goal is to introduce children to coding fundamentals, classifying it as an EdTech product. Technology has the potential to massively improve the education of students, allowing for more personalised education for each student and 24/7 access to education. However, some concerns arise with increased screen time, access inequality and removal of a safety net for students. Evaluating both the benefits and downsides is important, a challenge many EdTech companies are experiencing right now.

With technology impacting worldwide industries, its effect in the education system, while noticeable, has been miniscule until the rampant increase of online learning due to COVID-19 . Despite this, according to a recent Gallup study, a vast majority of teachers, principals and administrators believe that digital learning tools are far superior to analogue equivalents in almost every situation (Calderon & Carlson, 2019), shown in figure 1. The same study found that most teachers believe technology better prepares students for their future jobs (Calderon & Carlson, 2019), shown in figure 2. At the Southern New Hampshire University's innovation arm, select students can utilise VR, AI and blockchain systems to further enhance their learning experience. Introducing technology earlier in the schooling system allows students to be better prepared for this eventuality in their later education (Marcus, J 2020). An increase in technology in schooling could also inspire students to pursue careers in STEM fields, which are in dire need of employees (Australian Government, 2020). A great example of an EdTech product aimed at primary school students is Lalilo, an interactive AI based playful game with the goal of improving childrens comprehension skills (Lalilo, 2020). Emulating a similar environment to this will be a key focus of my product.

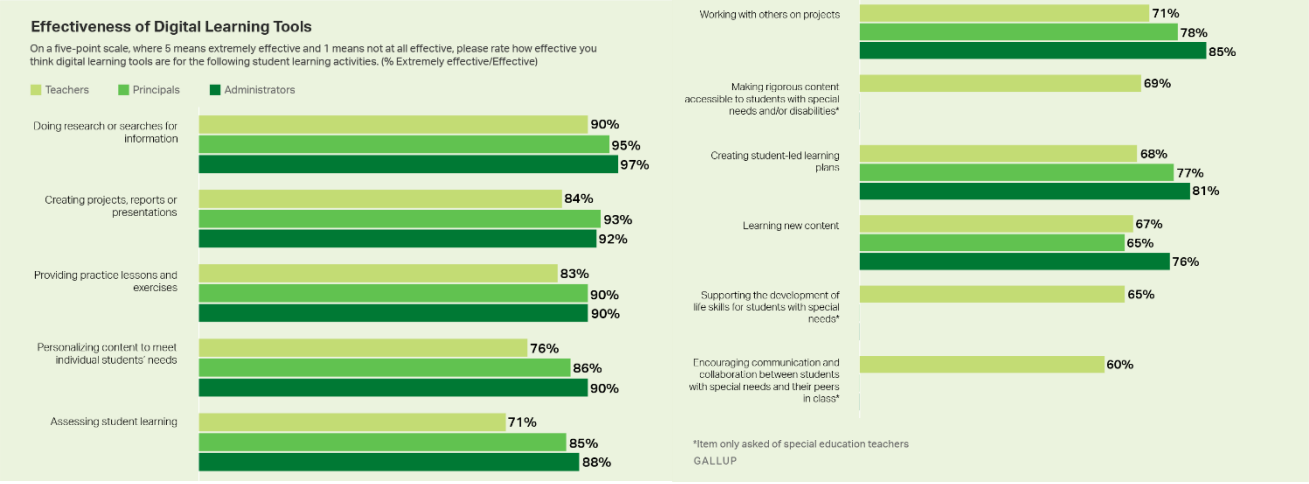

Figure 1 - Gallup Poll illustrating Staff members views on Digital Learning tools

Comparing the Effectiveness of Digital and Non-Digital Learning Tools

Please indicate whether you think digital learning tools are generally more effective than, as effective as, or are generally less effective than non-digital tools in the following ways. (% More effective)

	Teachers	Principals	Administrators
	%	%	%
Connecting learning to students' future jobs and careers	63	68	70
Personalizing instruction	57	65	73
Engaging students with school and learning	52	55	59
Communicating with students	50	47	56
Giving students ownership of their learning	45	43	54
Assessing student learning	40	51	56
Helping students to collaborate	38	39	57
Helping students to learn	30	31	37
Managing the classroom	27	23	25

GALLUP

Figure 2 - Staff members views on the effectiveness of digital vs non digital tools

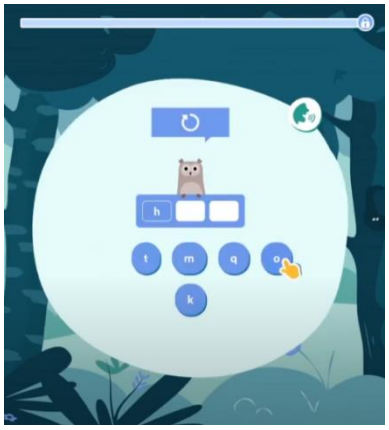

Figure 3 - An Image from EdTech Product based at primary school children: Lalilo

While technology seems beneficial for education, the concerns raised, especially during the COVID-19 pandemic, must be equally considered. A major concern is access inequality (Jaisinghani, P 2020). With globally 1.38 billion students locked at home (World Economic Forum, 2020), shown in figure 4, only able to attend lessons through applications like Zoom, the students without access to computers or fast internet connections at home are unable to attend lessons necessary to complete their schooling. In the US, 10% of school students do not have access to a computer (Jaisinghani, P 2020). Even more families struggle with one computer between multiple siblings and parents, and substandard internet access further impeding less fortunate students (Jaisinghani, P 2020). These already disadvantaged students will fall further behind. This number is even greater in developing countries, with only 34% of Indonesians having access to a computer, further widening the education gap (Li & Lalani, 2020). Another issue considered is the increase in screen time. While risks of "too much" screen time are contentious and unproven, some links to aggressive behaviour, sleeping disorders and developmental delays have been made (Intel 2020). The consensus is that the effects of "too much" screen time aren't due to the quantity, but rather the context, content and connections (how, what and whether human connections are being made) (Intel 2020). Furthermore, schools provide counsellors and time away from parents. Removing these from children in potentially abusive households could be detrimental to their emotional and physical wellbeing (Jaisinghani, P 2020).

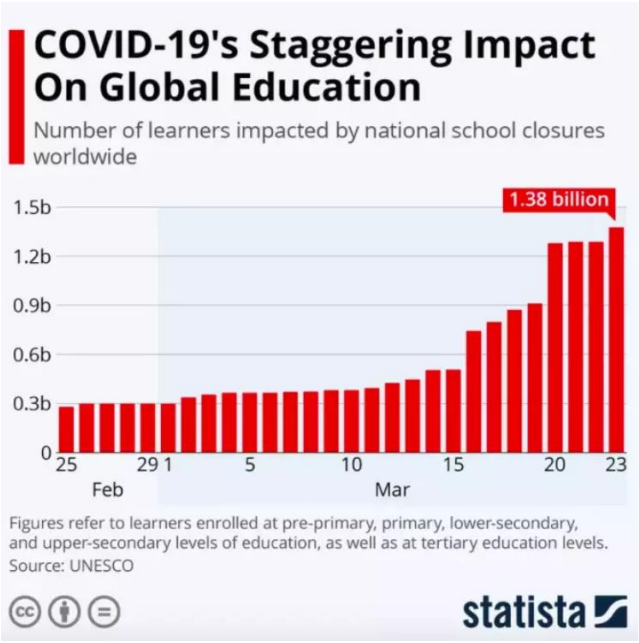

Figure 4 - Number of students effected by the COVID-19 Pandemic Globally

While technology clearly has a future in the education industry, the potential downsides of increased screen time cannot be overlooked. Clearly, a middle ground between a completely remote, virtual technology-based learning environment and the current face to face system must be made. CEO and president of non-EdTech non-profit Digital Promise Karen Cator claims “The role of education technology is to support learning and support the classroom,” as opposed to eliminating the need for a classroom (Gossett , 2020). Unfortunately, most EdTech companies are still in early phases of development, with a major hurdle being procurement (Gossett , 2020). Because of this, there are calls for teachers to have greater autonomy when deciding which tools to use to educate, rather than heads of school districts (Gossett , 2020). In order to make a “great” EdTech product, these 3 pillars must all be nailed: Know the goal of your product, Ensure your product is engaging, and Allow teachers meaningful control over how the product is used (Higgin, 2018). A focus on these three elements is maintained throughout the development of my product. As an “Avalanche” of new EdTech products are unveiled the paradox of choice is intensified, making it increasingly difficult to choose the “right” product (Gossett , 2020). EdTech companies are also focusing on creating more sophisticated, subject specific tools, and improving them through machine learning and data analytics (Gossett , 2020). Technology clearly has a strong future in the education industry, with likely teachers using subject specific EdTech tools in physical classrooms, that utilise machine learning algorithms to adapt to the needs of individual students.

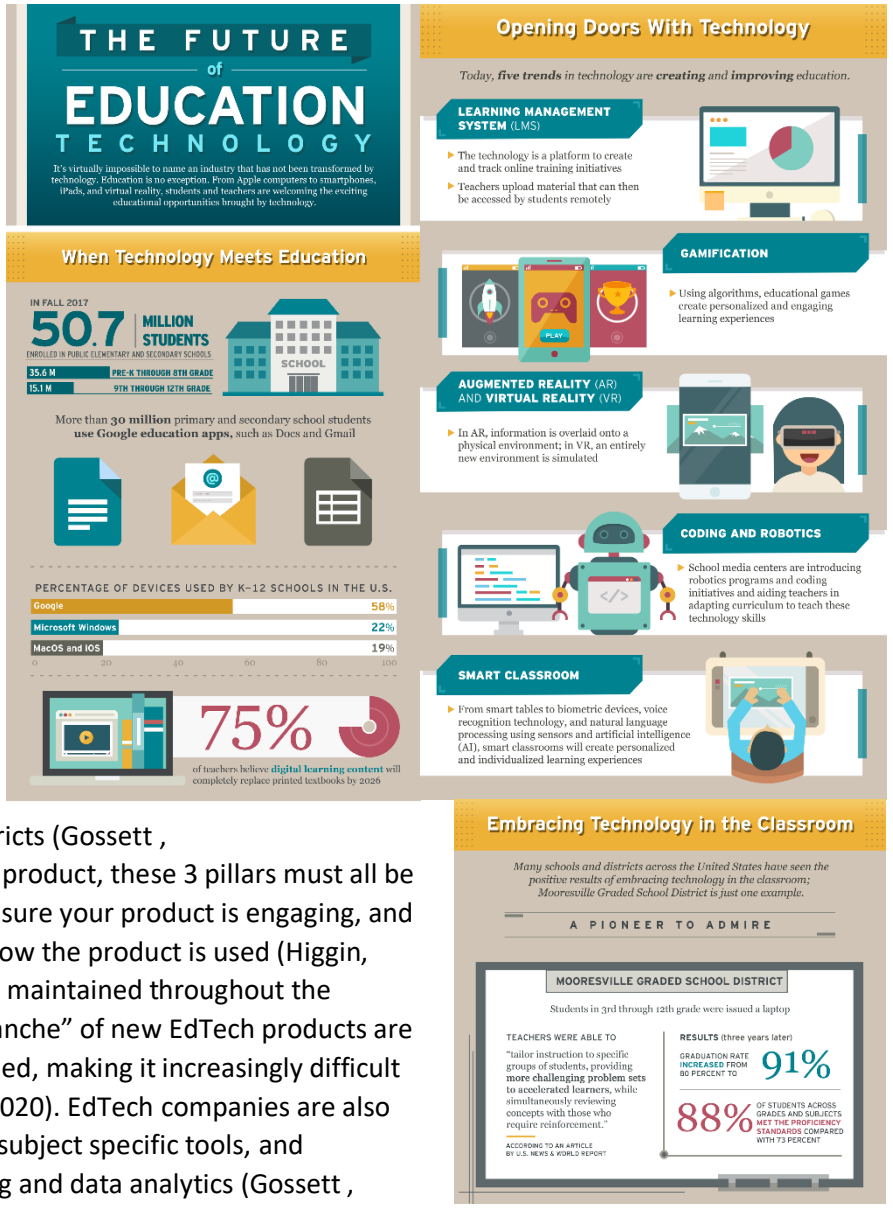

Figure 5 – Infographic Illustrating the benefits of EdTech

EdTech products, including mine, will be an important asset in educating the future generations, preparing them for tech-based careers and enhancing their learning experience. The downsides of remote learning have been highlighted throughout the covid-19 pandemic, making it clear that these products will be used in conjunction with, not instead of, physical, face-to-face learning environments.

Reference

Australian Government 2020, STEM jobs growing almost twice as fast as other jobs, viewed 11 September 2020, <https://www.employment.gov.au/newsroom/stem-jobs-growing-almost-twice-fast-other-jobs>.

Bolton, R 2020, Edtech is a solution to some of the flaws revealed in education, Australian Financial Review, viewed 11 September 2020, <https://www.afr.com/work-and-careers/education/edtech-is-a-solution-to-some-of-the-flaws-revealed-in-education-20200228-p545cp>.

Calderon, V & Carlson, M 2019, Educators Agree on the Value of Ed Tech, Gallup, viewed 26 August 2020, <https://www.gallup.com/education/266564/educators-agree-value-tech.aspx>.

The Current State of Education Technology and Where It Is Going 2018, Pdf, EdTech, viewed 26 August 2020, <https://edtechmagazine.com/k12/article/2018/12/current-state-education-technology-and-where-it-going-infographic>.

Gossett, S 2020, THE FUTURE OF EDUCATION TECHNOLOGY, BuiltIn, viewed 26 August 2020, <https://builtin.com/edtech/future-education-technology>.

Guerre, L & Godbarge, C 2020, How income-sharing agreements can improve access to education, World Economic Forum, viewed 26 August 2020, <https://www.weforum.org/agenda/2020/07/how-income-sharing-agreements-can-improve-access-to-education>.

Higgin, T 2018, What Makes a Good Edtech Tool Great?, EdSurge, viewed 11 September 2020, <https://www.edsurge.com/news/2018-07-21-what-makes-a-good-edtech-tool-great>.

Intel 2020, Balancing Screen Time and Learning, viewed 26 August 2020, <https://www.intel.com.au/content/www/au/en/education/right-device/screen-time-and-learning-brief.html>.

Jaisinghani, P 2020, COVID-19 is widening the education gap. This is how we can stop it, World Economic Forum, viewed 26 August 2020, <https://www.weforum.org/agenda/2020/08/we-must-resist-covid-19-widening-us-education-gap/>.

Lalilo 2020, Lalilo, viewed 14 September 2020, <https://www.lalilo.com/>.

Li, C & Lalani, F 2020, The COVID-19 pandemic has changed education forever. This is how, World Economic Forum, viewed 26 August 2020, <https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning>.

Marcus, J 2020, How Technology Is Changing the Future of Higher Education, The New York Times, viewed 26 August 2020, <https://www.nytimes.com/2020/02/20/education/learning/education-technology.html>.

Strauss, V 2020, The education technology students will need — and won't — after coronavirus, The Washington Post, viewed 26 August 2020, <https://www.washingtonpost.com/education/2020/08/06/education-technology-students-will-need-wont-after-covid-19/>.

U.S. Department of Education n.d., Use of Technology in Teaching and Learning, US Government, viewed 26 August 2020, <https://www.ed.gov/oii-news/use-technology-teaching-and-learning#:~:text=Used%20to%20support%20both%20teaching,skills%3B%20increases%20student%20engagement%20and>.

United Nations Confrence on Trade and Development 2020, Coronavirus reveals need to bridge the digital divide, United Nations, viewed 26 August 2020, <https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2322>.

Walsh, P 2020, Innovative Technology Is The Future Of Education, Forbes, viewed 26 August 2020, <https://www.forbes.com/sites/forbestechcouncil/2020/07/23/innovative-technology-is-the-future-of-education/#18fc026670e3>.

World Economic Forum (2020) 27 March. Available at https://twitter.com/wef/status/1243187226361704450 (Accessed 26 August 2020).