

Video games and their positive impact on society

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Introduction:

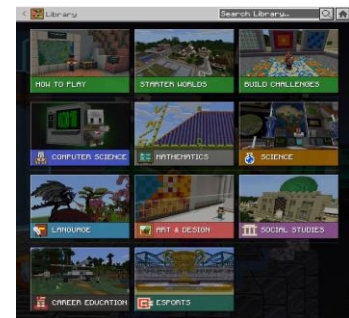
Video games are among the most popular forms of entertainment, appealing to users of all interests, ages, genders and disabilities. Per Demandsage, there are 3.32 billion gamers worldwide as of 31st December 2025 [1]. This ever-growing form of entertainment can teach users' educational content, social constructs, transferrable skills and more. Video games have the potential to positively impact a person's social, cognitive and emotional development, providing them with more beneficial and creative means of learning.

Case study 1- Minecraft Education Edition [2]

Upon the immense success of Minecraft [3] Mojang studios recognised the educational potential of the video game and developed Minecraft Education, the perfect integration of gaming and learning [4] "providing teachers and parents with a unique way to teach their kids essential skills and concepts" [5]. With the ability to fully customise and produce lesson plans suited to a learner's needs, no individual can miss the opportunity to develop their knowledge with this game. The game officially launched on November 1st, 2016 [6], almost 5 years after the original title.

Educational content

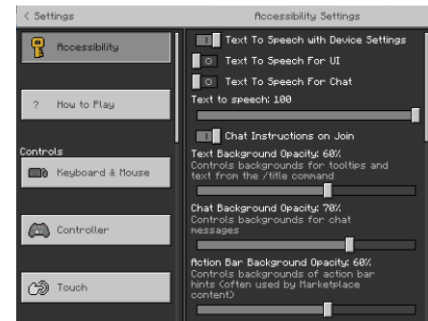
Minecraft Education Edition [2] provides a positive impact to modern day education through its presentation of educational and accessible gameplay. The game prides itself on fun and inclusive learning, providing hundreds of prebuilt lessons which educate in subjects across recognised curriculums. These subjects include Computer science, mathematics, science, social studies, language and art & design. There is no limit to who can use Minecraft to further their learning, as Minecraft Education is suitable for students; from primary school to higher levels of education [7], increasing the video game's player base and potential success.



[2] Minecraft Education- Lesson library

Accessibility

Minecraft Education edition provides an inclusive experience, provided by an extensive array of accessibility features. These features include text-to-speech, immersive reader customisable inputs, text duration, and GUI modifiers [2]. Learners can play using either a gaming controller, mouse and keyboard, or even touch screen. Through integrating these features a greater audience can be included, ensuring as many children can enjoy this unique learning experience. Motor, visual, cognitive, and emotional impairments aren't an issue for learners wanting to experience Mojang's hit education title [8], as these are all accommodated to with the correct customisation and freedom of choice. By allowing multiple input devices and button remapping, Motor impairments are accommodated for. The screen reader enables visually impaired players to navigate through menus and the game. Text-to-speech and on-screen text duration helps to include players with cognitive impairments. While the multiplayer functions and the online community can provide the player with a sense of belonging, potentially helping players with any emotional impairments [8].



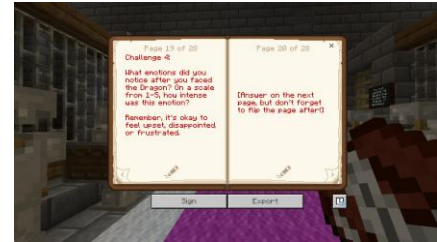
[2] *Minecraft Education Accessibility settings*

Development of transferrable skills

Aswell as educating learners in their favoured field, “Minecraft Education prepares students for the future, building future-ready skills like creativity, problem solving, and systems thinking, and nurturing passion for play” [8]. The sheer success of this form of education has been proven by Karen Carnes, a special education teacher from the United States. She stated that “My students have been able to practice task management skills, problem solving, and personal relationship skills. Being able to see them excited and engaged with their learning is priceless” [8]. This evidence further supports Minecraft's diverse accessibility features, providing Miss Carnes' special education class with an exciting way of developing skills that will help shape their futures.

Increasing social awareness

Within Minecraft Education an interactive world known as “The Mindful Knight” was created, introducing children to social awareness, mindfulness and self-regulation. This is done through a series of educational quests based within a medieval world [9], with each quest tackling each of the following: social management, coping skills, and self-awareness. The player is given a quest journal containing challenges that must be completed and answered throughout the duration of the game. Upon completion their answers can be submitted to the teacher to review.



[9] Player's quest journal

Positive portrayals of character/culture

Equity and inclusion are one of the many areas covered in the game with its own curriculum. Allowing learners to understand the concept of diversity, social justice and culture. An example of downloadable worlds that address these topics are “Lessons in good trouble” which educated learners about social justice, “The “I” in identity” which helps learners understand all the visible and non-visible elements that shapes their identity, then “Manito Ahbee Aki” which takes the learner back in time to live among the Anishinaabe Nation to learn and understand their way of life[10]. Learners will be able to understand not only how, but why certain movements occurred in history, understanding how people are able to live the inclusive life they live today.

Case study 2- The Last of Us Part II (TLOU2) [11]

The Last of Us Part II is a third-person action, survival horror developed by Naughty Dog available on PlayStation and Steam. Released on June 19th, 2020, the game tells a new chapter of the story following the events of the first game. This chapter in the series delves into the themes of trauma, revenge, and the consequences of violence. Despite all of this, the video games in-fact contributes a positive impact on society.

Accessibility

TLOU2 has an outstanding range of accessibility options, consisting of more than sixty accessibility settings, “with expanded options focused on fine motor and hearing, as well as completely new features that benefit low-vision and blind players” [12]. The list of customisations is incredible, allowing for players to utilize these features to ensure the best possible experience when playing the game. The list of accessibility controls in TLOU2 includes:

- Vision, hearing and motor presets
- Alternate controls
- Button inputs
- Camera and lock on assist
- Magnification and visual aids
- Motion sickness
- Navigation and traversal
- Text to speech and audio cues
- HUD customisation
- Subtitles
- Game difficulty

This heavily inclusive customisation places this title above most games regarding accessibility.

In an interview with the BBC Steve Saylor, an individual who's legally blind, got to try The Last of Us Part II. "For the first time in my entire life, I was able to sit back on the couch and play the game without any barriers getting in the way" [13]. In a separate review, Chad B said "I could only cry when I started up the game with the accessibility options, I picked to make the game play I needed it to be for me. I've never felt so included in a video game before and it touched my very soul. Thank you Naughty Dog." [14]. To provide an individual with the opportunity to enjoy an emotionally engaging narrative while forgetting about issues in their day-to-day life is lifechanging. Allowing for individuals like Steve to feel like an equal when playing video games.

Educational

In the chapter titled "Seattle Day 1- Ellie", there is a mission called "The Birthday Gift- flashback" [11]. In this mission you play as Ellie [15] reliving a flashback of a previous birthdays spent with Joel, her adoptive father. During the mission Joel surprises Ellie by taking her to an old museum, still containing pieces of history despite the events of the story. At the beginning of the museum the player can encounter full dinosaur skeletons on



[11] Dinosaur skeleton interaction

display, allowing for the player to put into perspective the sheer scale of the dinosaurs. These also included interaction prompts that will have Ellie refer to the museum's leaflet and read the information given on the specific dinosaur. For example, when interacting with the Triceratops, she learns and announces, "Triceratops means

“three-horned-face””. There is also fun information across the walls of the museum. These messages help set the tone of the upcoming area, while providing helpful information. An example of this is present just after the Ankylosaurus, with a section of the wall explaining the extinction of the dinosaurs, with theoretical statistics supporting what caused their extinction.



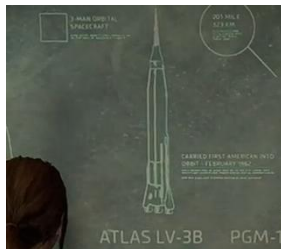
[11] Extinction information

Towards the end of the museum, Ellie’s fascination for space is fuelled by an area all about space. There are interactable areas for the player such as a functional orrery, which allows for players to manually orbit the planets of our solar system around the sun. It helps the



[11] interactive orrery

player understand which planets are a part of the solar system and how orbit works. For example, the player can understand the Earth’s placement in the solar system as well as all the other planets. They can also compare how long it takes all the planets to complete a full orbit of the sun.



[11] Atlas LV-3B diagram

At the end of the museum there is a display of miniature models of rockets and missiles that have played a part in American history. By taking the time to interact with the display the player will learn that the Atlas LV-3B carried the first American into orbit in February 1962. Upon reflecting on this mission, it has the capability of teaching the player educational scientific information on astronomy and the Jurassic period, such as what roamed the earth during this period and what caused their extinction. While supported by scientific theories, and information regarding our solar system and famous rockets and missiles.

Case study 3- Sumdog [16]

In 2010, Andrew Hall set out to create an engaging platform with the potential of supporting all children with their maths practise, despite their ability or background [16]. This platform is now known as Sumdog, “the adaptive maths platform independently proven to deliver statistically significant attainment gains, with the strongest progress for SEN and lower-attaining pupils” [17]. Used by over 2700 UK schools and given a 4.8/5.0 teacher rating, Sumdog’s repetition undoubtedly cannot be argued [17].

Educational content

Within Sumdog there are thirty-nine games available to the learner, which provides them with an educational yet enjoyable experience [18]. The thirty-nine games are made up of



[16] Example of available games

both single player and multiplayer experiences, providing the learner with the freedom to enjoy the experience in their preferred way. Sumdog aids in the development of the learner's maths and spelling, including "curriculum-aligned maths practise" for learners across the United Kingdom. As a means of assessing all learners in a class the teacher can set up and

officialiate online competitions amongst the students, encouraging them to spend more time at school and at home answering questions to compete for first place. Per the Mathematics Teacher Training Scholarships [19], they state that extra-curricular activities such as competitions provide numerous benefits for students. They claim that "most maths competitions require a different style of mathematical thinking" and that students will surprise themselves and recognise improved performance, as well as the key fact that students love winning prizes, so friendly competition will bring the best out of them, resulting in a large confidence boost upon victory [19].

Social content

Players can develop their own sense of identity by creating their own avatar, as well as designing their own personal areas to suit themselves [20]. This function enables players to present themselves to others exactly how they'd wish.

Players can then play games online with their friends and see each other's avatars in the process. Providing learners with the ability to play together will encourage them to play more frequently, hence the students will be further improving their mathematical level outside of school.



[20] Player customisation

Accessibility

Sumdog is inclusive to players of all mathematical abilities. Through "Evidence-based maths fluency practise" [17], every player will be presented with questions suited to their ability. As a player becomes more comfortable answering questions, the difficulty of questions will gradually increase at a pace that won't negatively affect the learner.

Conclusion

Video games have proven first hand the positive impact they can have on society through educational content, accessibility features and social content. Minecraft Education and Sumdog provide learners with the ability to learn through entertainment, while The Last of Us Part II demonstrates the significance accessibility features can have. Video games should never become exclusive, as happiness will always remain inclusive.

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