# **Literature Review**

## **Secondary Research**

Education, business, security, health, and many more fields rely on technology. A research by the Pew Research Center [(Pew Research Center, 2021)](#pl1) provides a good example of Kenya, where smart phones are common yet food is scarce. This trend is expected to continue, with data being created and gathered at a phenomenal rate, contributing to big data. According to IBM, 90 percent of the world's data was created in the last two years. Big data has caught the curiosity of many in order to store and manage data and, as a result, discover a pattern for decision making. In addition to the majority of industries, the educational sector is being increasingly digitalized, resulting in massive data output. In this circumstance, the educational sector is hardly an exception. A huge amount of data is generated in the education sector through online courses, teaching, and learning activities. Teachers can now examine their students' academic achievement, learning habits, and give immediate feedback leading to the advent of big data. Students are motivated and satisfied with timely and constructive feedback, which has a positive influence on their performance. Academic data can assist teachers in analyzing their teaching methodology and making modifications to satisfy the requirements and demands of their students. Many online educational sites have been created, and different courses have been developed depending on individual student preferences. Acquisition and technology are both important factors in educational development. Large-scale administrative data can be extremely effective in overcoming a variety of educational issues. As a result, teachers' understanding of big data is critical for all educational sectors to implement [(Promises and Pitfalls", 2021).](#pl2)

In 2015, the world's largest educational hackathon, HackingEDU, was held over three days at San Mateo Event Center in San Francisco, with over 1,000 student software engineers and hackers in attendance. It was designed to assist software engineers and programmers, the most of them college students, in ‘revolutionizing the education industry' while competing for over $100,000 in prizes [(Hunckler, 2021)](#Litertature2). HackingEDU 2015 included professional workshops, panel discussions, and guest speakers, and was sponsored by big technology firms such as IBM, Google, Uber, PayPal, and Automattic, as well as successful educational technology companies such as Chegg and EdModo. HackingEDU was a significant event that identified education as a problematically flawed system in need of revolutionization. Thiel, a strong supporter of educational technology, has backed and funded several firms and startups aimed at ‘revolutionizing' education through data-driven software applications [(Levy, 2021).](#Litertature3) Since around 2010, Silicon Valley entrepreneurs have been supporting educational technology initiatives with unprecedented financial zeal for new businesses that successfully transition from the incubation and acceleration stages [(EdSurge, 2021).](#Litertature4) It suggested that the availability of enormous volumes of educational data might be utilized to get insights into educational problems while also identifying solutions. As well demonstrated how technology companies in the corporate sector have grown focused with education and their own role in addressing it. However, it does not address how big data can be implemented on educational data for solution generation, and how its literacy to teachers/schools could help improve students' and educational futures in its field [(Big Data in Education, pp. 18-20, 2021)](#Litertature).

## **Primary Research**

Technology implemented within the learning process of students leads to the assembly of an enormous amount of data and information. Furthermore, as data has been stored in cloud storage, the amount of digital data is growing at an incredible rate. Students look out e-learning programs on the internet, download software, and get their assignments evaluated online. Educational institutions use video streaming technologies to conduct courses remotely. The availability of a wide range of e-learning technologies is rapidly changing education. All of the data generated can be examined through a massive data process, producing all of the information about how this software was used, what problems users experienced, what their preferences were, how frequently or rarely they attended, what tests they passed successfully, and what information was typed in. The student's conduct will be learned through the huge data procedure. As a result, the information provided to institutions regarding students can have a greater positive impact on education.