For my second Data Science reflection I am going to touch on the use of data science in the field of education. Education is very important and constantly growing. The amount of knowledge in the world today is unfathomable and the only way to keep up with the amount of data is to use the ever growing technology. Some of the technologies like data mining, big data analytics, predictive analytics, and natural language processing will be explored below.

In education, learning is more than being able to comprehend material out of a book. Social-Emotional Skills are an important area that needs to be developed through education. Through this, a child learns to acquire a capacity to understand, analyze, express and manage emotions. He also learns how to develop a relationship with others. Facilitating growth in social-emotional skills is an important task of educational institutes. This is an example of a non-academic skill that plays a major role in defining the learning capabilities of the students. There were various statistical surveys that would assess these social-emotional skills. However, with the advancements in computational methodologies, it is possible to gather a large amount of data. With the formalized knowledge discovery models in Data Science and Data Mining techniques, it is possible to gather such large information and incorporate it with the existing tools to produce better results. Furthermore, with the data that is extracted, data scientists can apply various predictive analytical techniques to help the teachers in understanding the motivation of the students.

With education being so broad, there are many different ways to teach. Quite frankly, some students learn differently from others. There are several evaluations and assessment techniques that are utilized by educational institutes. However, such traditional methodologies were often unable to capture all the important trends and patterns of student services. Most of the assessment techniques were not in real time. With the advancements in Big Data analytics, it is now possible for the teachers to look over their student requirements based on their performance and reviews. As a result of monitoring student requirements, teachers are able to provide appropriate responses and even change their teaching methods to meet student needs. Many times, teachers have an unconscious bias towards certain students. A data platform will treat its users with a zero bias, meaning that there will not be any bias in the evaluation of student performance. This will provide an equal platform for all the students to engage and develop their skills.

Another way data science helps to enhance education is by innovating the curriculum. Various Universities have to keep themselves updated with the demands of the industry so as to provide appropriate courses to their students. It is a challenge for the universities to keep up with the growth of industries. In order to accommodate this, universities are using Data Science systems to analyze growing trends in the market. Using various statistical measures and monitoring techniques, data science is useful for analyzing the industrial patterns and helps the course creators to create useful topics. Furthermore, using predictive analytics, universities can analyze demands for new skill sets and curate courses that address them.

One of the most crucial parts to an education is who is teaching. The performance of students depends on the teachers. While there are many assessment techniques that have been used to assess the performance of teachers, it has been mostly manual in nature. For example, student reviews about the performance of teachers have been the standard tool for quantifying teaching methods. However, all these techniques are not an efficient method and usually take time to assess. Within data science, it is possible to keep track of a teacher's performance. This is not only valid for recorded data but also real-time data. As a result, with real-time monitoring of teachers, rigorous data collection is possible, along with its analysis. Also, we can store and manage unstructured data like student reviews on a big data platform. And, with Natural Language Processing, it is possible to analyze the sentiments of the reviews and provide a comprehensive analysis of teacher performance.