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The dataset in question contains over 2 million rows and 132 columns, and surrounds Elm City Stories, an educational video game for middle school and high school students that is meant to prevent future risk-taking behavior. The dataset has a vast amount of NA values, so data cleaning was the beginning task. Irrelevant columns were removed, and multiple new columns were created for the clean dataset. The column “Skill” was created, which listed the skill types that were originally in rows. The column “MeanSkill” was created, which gives the mean skill level for each specific player and skill. Because there are five different types of skills, each player has five different mean values assigned to them. From there, the clean dataset was joined with the provided dataset that gave the S5 scores for specific students, as well as which week they took the S5 assessment. Lastly, avatar age and gender were added, and the dataset was filtered to only include real values.

After the cleaning was completed and the new dataset was created, analysis was done. The goal was to determine if there is a disparity in risk-taking behavior between male-selected avatars and female-selected avatars, as well as a difference across skill types. Several visualizations were created and analyzed. The visualizations exemplified that female-selected avatars had higher skill levels than male-selected avatars, but not by a large amount, as shown in the visualization below. When analyzing S5 scores over time, there did not appear to be a significant difference between when they started playing the game and when they stopped. When looking at S5 scores by gender, female-selected avatars tended to score higher than male-selected avatars, but the distributions were similar. All of this information backs up the hypothesis that girls engage in less risk-taking behaviors than boys. To back this up, outside research was conducted. A study done at the University of Guelph, boys behave more impulsively, thus participating in more risk-taking behaviors and injuries.

Overall, there appears to be patterns that female-selected avatars make less risky decisions within the game than male-selected avatars, but further research would need to be done to see if this is significant or if it reflects real life.

