Evaluating Problem Solving Approaches Using Child Safety Locks

Powell, Amberley

The way the project is now focuses on which puzzle solving approaches different ages use primarily. The project started out with the intention to measure the effectiveness of each approach, but the methodology of each age group was assumed. The clear success of different age groups on different types of locks led to the question of whether or not the assumed methods held up to the original hypothesis. The original hypothesis is that if adults solve puzzles using experience and small children use different puzzle solving methods, then young adults will solve puzzles faster because they will use an equilibrium of the two methods. 12 different child safety locks were used, and some of which were unusual enough for adults to not have seen before. A questionnaire was used to evaluate which skill sets each person individually had to predict which methods they would use on the test. The questionnaire asked about siblings, children, date of birth, and other important factors. Prior research has been done to calculate which locks were popular when these participants were of child safety age. The data show that unusual locks were solved fastest by young adults, and more familiar locks were solved fastest by experienced adults. 2nd and 3rd graders used brute force solutions to perform well on some tests. The results show solution times decreasing as age increases. These results disproved the hypothesis that young adults would be the superior age group, but only barely – they performed almost as well as the adults even though they had less experience. Overall it can be concluded that child safety locks are indeed a good way of measuring the development of problem solving skills. Evaluating these methods could provide insights in many careers, professions, and education.

Awards Won: