Abstract: Methods of learning are a prevalent topic in psychological research. The object of this study was to determine a method by which learning style can be predicted using the explanatory variables gender, handedness, age, family size, birth order, and cerebral dominance. The learning styles studied were visual, aural, reading/writing, and kinesthetic. The sample consisted of 432 students between the ages of 8 and 18 and all data were collected using a survey and series of questionnaires. Cerebral dominance was determined to be the only variable of statistical significance although gender did play a minor role in predicting learning style. Though the data were statistically significant, the regression model produced in the multivariate analysis proved a poor fit for the data. However, there exists a positive correlation of visual and reading/writing learning with left brain dominance and a positive correlation of aural and kinesthetic learning with right brain dominance. Extensions for this project include replacement of the surveys with performance based assessments to test for strengths rather than preference, refinement of the sample, and incorporation of additional variables.