Question 3

 There was a research study conducted at a middle school consisting of grades 6-8. A total of 24 students took the posttest but only 23 students took a pre and posttest. There were seven 6th graders, nine 7th graders, seven 8th graders and one 9th grade who took both test. The following is the results of the pretest grade 6 (M=54.00, SD= 29.43), grade 7 (M=55.00, SD= 22.58), grade 8 (M=49.57, SD=19.09), and grade 9 (M=75.00, SD=87.74). The results of the posttest for grade 6 (M=81.50, SD=11.83), grade 7 (M=91.70, SD= 11.84), grade 8 (M=92.00, SD=7.72) and grade 9 (M=87.72, SD=0).

 The 24 students were asked to rate the program according to their satisfaction, engagement, and motivation on a Likert scale of 0-5 with 5 reflecting the highly level rating. The most reoccurring number given for the level of satisfaction (*M=*4.04, *Mo=*5) was a 5. The most reoccurring level of engagement (*M=*4.42, *Mo=*5) was a 5. The most reoccurring number given for level of motivation (*M=*3.54, *Mo=*5) was a 5. The average students would have 2 technology devices in their house hold (*M*=3.6, *Mo*=2).

 A Pearson product-moment correlation coefficient was computed to assess the relationship between the middle school pretest and posttest to see the effectiveness of robotics instruction on computer programming. A five point Likert Scale was provided for the students to rate their satisfaction on the instruction and programing. Table 1 shows there was a positive correlation between the two variables, (r = 0.521, n = 23, p = 0.011).

The correlations for the rating, satisfactory, engagement, and motivation (r = 01, n = 0.24, p = 0.162). Overall there was a positive correlation between the effectiveness of robotics instruction on computer programing.

Table 1

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| Descriptive Data Analysis Effectiveness by delivering Pre and Post Test | PretestPearson Correlation .521 | Sig (2- tailed) 011 | N 23 |
| Descriptive Data Analysis rated on satisfactory using a Likert Scale | Pearson Correlation .1 | Sig (2- tailed) 0.59 | N 23 |