Extended Summary

Purpose: Attitude is a mental tendency shown by individuals towards other people, objects, subjects and events. In analyzing students’ attitudes, three components of an attitude should be considered: the affective, the cognitive, and the behavioral. The affective component is essentially the evaluative of an attitude that determines if the object is considered to be good or bad by the individual. When one expresses the affective component he/she may use words such as “liking”, “disliking”, “fearing”, or “boring”. Cognitions are beliefs about the attitude object based on information or knowledge. When someone expresses these beliefs, phrases such as “comes from”, “will lead to”, “results in”, “causes”, “produces”, or “prevents” are used. The behavioral component represents an intention to act. Behavior may be expressed as “choosing”, “rejecting”, “voting for”, etc. Peoples’ feelings toward objects and issues are relatively stable over time; although attitudes can be changed, such occurrences are not random; something must happen to cause the change. Peoples’ actions reflect their feelings toward relevant objects and issues in a probabilistic way. This study focused on revealing the attitudes towards science and technology course, one of the basic disciplines for the students who plan to serve for the aim of producing science. Studies of attitude toward science reveal that the decline in attitudes from classes four through eight was much more dramatic for females than males. There exists a need, therefore, to explore alternative processes of teaching science, particularly in the elementary school, that would improve attitudes toward science. Improvement in attitudes toward science could possibly encourage participation in high-level courses and result in greater scientific literacy, particularly for female students. Studies of attitude toward science revealed declines in attitudes during grades four through eight was much more dramatic for females than males. The purpose of the study was to examine the effect science and technology lesson programme and 4+4+4 systems had on the attitudes of fourth grade students toward science and technology in comparison to fifth grade. Another purpose of the study was to examine the effect science and technology lesson programme and 4+4+4 systems had on the attitudes of female students toward science and technology in comparison to the attitudes of male students.
Method: This study was conducted with the first level fourth year students and one year later, in fifth grade with same students in the 2011-2012 and 2012-2013 academic years. The instrument used in this study measured the dependent variable of attitudes toward science and technology course in eighteen items. Attitude Scale, which used in this study, was adapted by Yangın (2007). A likert scale of choices of: 1- to no extent, to 5 – to a great extent, is provided for each item. The reliability of the instrument was established with a test-retest technique. The students were asked to reflect on all the science and technology courses they have ever taken including the present one when completing the survey. Approximately one year later, the same group of students completed the same pretest, and again, were asked to reflect on all the science and technology courses they have ever taken including the present one. The scores were compared to see if there were any differences after forth grade semester. After the end fifth grade semester, the groups were posttested. The scores the first measurement and second measurement were compared again to indicate differences in the attitudes at the end of the education-teaching semester. An alpha of .05 level of significance was used on the pretest and posttest. This research design permits an examination of the effect of treatment variable - fourth and fifth grade science and technology course, and 4+4+4 education system- on a dependent variable –attitudes of fourth and fifth grade students toward science in each of the following domains: enjoyment of science class, usefulness of information learned in science and technology course, feelings about science and technology course in general, attitudes about what took place in the science and technology classroom, overall response to science and technology course. The target population for this study consisted of male and female elementary school fourth grade students. The total treatment sample consisted of eight hundred thirty six fourth grade students. this study was uygulanmıştı to same students (fifth grade) after one year again. Some posttests were eliminated due to a lack of demographic information, an excess of incomplete answers, and school change of students.

Results: In this study, males scored lower than females in attitudes. In summary, the data show that the females had more positive attitudes than the males. While the scores indicating the attitudes of the females were slightly higher from the pretest to the posttest. But, the declines in the scores the females were higher than males after one year. In as much as the results indicated that there was statistically significant difference between the mean scores of the females/males and fourth/fifth grades from pretest to posttest. At the end of the study, a statistically significant difference was found between the first attitude levels of the students and the last attitude levels the same students, defending the latter’s lower attitude level.
Discussion and Conclusion: The investigation of students’ attitudes towards studying science has been a substantive feature of the work of the science education research community for the past 30–40 years. Research studies have identified a number of factors influencing attitudes towards science in general. These can be broadly defined as gender, personality, structural variables and curriculum variables. In this study, gathered results are disquieting. 2004 science and technology lesson programme and 4+4+4 systems had negative effect on the attitudes of fifth grade students toward science and technology in comparison to fourth grade. There is a significance difference between in fourth grade students’ science and technology attitude scale pre-test scores and fifth grade students (same students) science and technology attitude scale post-test scores. There is a significance difference between girls’ fourth grade pretest scores and same girls’ fifth grade post-test scores according to their attitudes towards science and technology. There is a significance difference between boys’ fourth grade pretest scores and same boys’ fifth grade post-test scores according to their attitudes towards science and technology. In context, some recommendations are presented at last of this article.