



Science Leadership Program Evaluation Study – Interim Findings

March 2015

Program Description

The Science Leadership program combines science study with social leadership. For many young people it creates a strong foundation not only for the study of sciences but also for personal and social empowerment. Students in grades 10 through 12 who are highly capable and motivated work as counselors with elementary school pupils, tutoring them in different areas of science, together with experiential social activity. The program takes place in many centers in the Galilee and throughout the Negev, including the Bedouin population. After military service or national service, the graduates are offered academic scholarships in the sciences, so that a continuum is created – from elementary school through academia.

Purpose of the study

The evaluation study was requested to provide information during the program (that continues throughout the academic year), and to evaluate a three-day camp during the Sukkot holiday. The present research examined the attitudes of the counselors towards the program at the beginning of the annual activity – before and immediately following the intense activity that took place during the Sukkot holiday. This activity was intended, among other things, to enrich the counselors as well. The evaluation at this point in the year was intended to provide real-time information about the program, in order to learn lessons that may be implemented during the same year, without waiting for questionnaires at the end of the year. It is also intended to examine the effectiveness of the intensive camp. The evaluation will be completed with receipt of findings from the questionnaire at the end of the annual activity and from the children's questionnaires – elementary school students (at the beginning and the end of the year).

Methodology

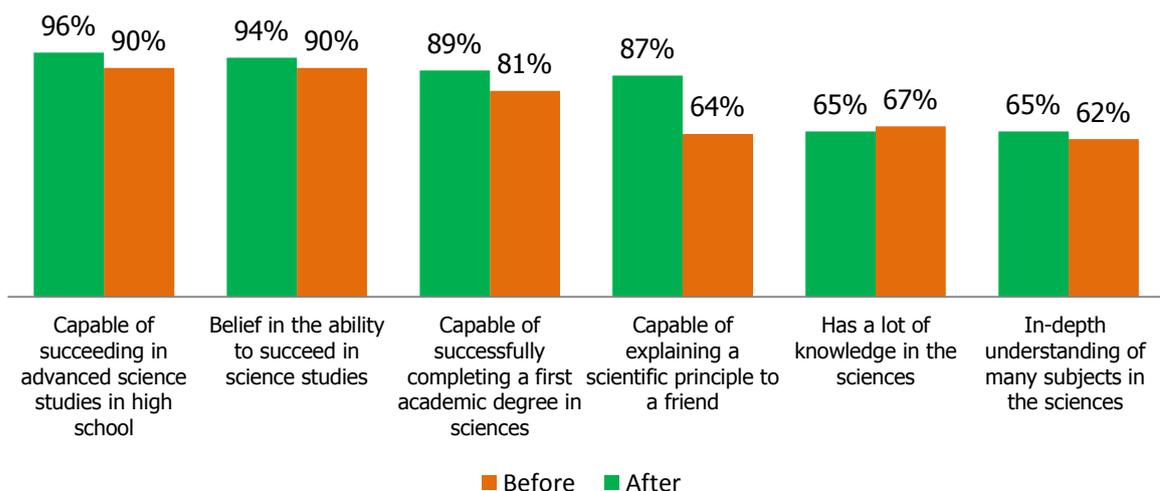
52 counselors from grades 9-12 filled out a questionnaire at the start of the enrichment activity during the Sukkot holiday; 46 counselors responded at the end of the three-day camp. The parameters that were examined include subjective ability, scientific competence, interest in the sciences, scientific experience, attitudes towards the world of science, scientific knowledge and ability, scientific view of the future, and more. The findings were analyzed, among other considerations, from the perspective of gender, in light of the increasing interest of including women in science programs.

Main Findings

Scientific competence, knowledge and ability

- It appears that the camp was effective in increasing the sense of scientific-technological capability among the counselors. Although the change was moderate, one must remember that the counselors had a high capability to begin with. Similarly, one must consider that the camp was only three days long. For example, at the beginning of the camp 90% of the counselors thought that if they exert efforts, they will succeed in their science studies in high school. After the camp, this level went up to 96%. In a similar fashion, 81% of the counselors believed that if they want to, they could successfully complete a first degree in the sciences, as compared with 89% at the end of the camp. In summary, the average level of capability among the counselors increased by 4.68%, from 6.33 to 6.63 (on a 1 to 7 scale).
- The level of knowledge and subjective ability among the counselors also increased moderately. For example, at the beginning of the camp 62% of the counselors stated they have in-depth understanding of many subjects in the sciences, as compared with 65% at the end of the camp. In conclusion, the average level of knowledge and ability of the counselors increased by 3.73%, from 5.78 to 6.00 (on a 1 to 7 scale).

Capability, knowledge, and scientific ability*

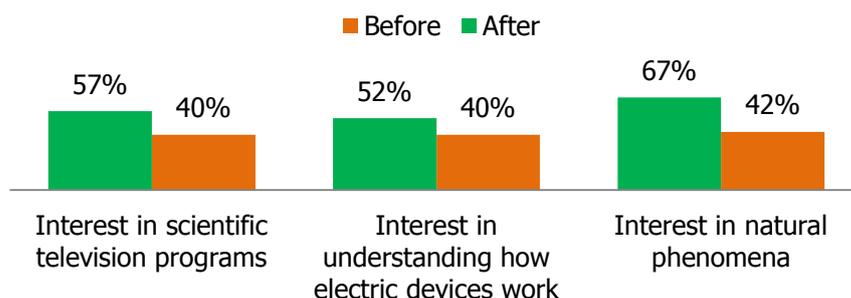


* The percentage of counselors who agreed with the statements

Interest in Science

- The interest in science and technology increased to a higher level. For example, before the camp only 42% of the counselors said that they are interested in understanding natural phenomena such as the solar system, as compared with 67% at the end of the camp. The average level of interest among the counselors increased by 6.44%, from 5.18 to 5.51 (on a 1 to 7 scale).
- In addition, at the beginning of the camp, the counselors were asked about their interest level in science and technology – on a scale from 1 to 10. At the beginning of the camp the counselors rated themselves with an average score of 8.44, as compared with 8.78 at the end of the camp – an increase of 4.03%.

Interest in Science*



* The percentage of counselors who agreed with the statements

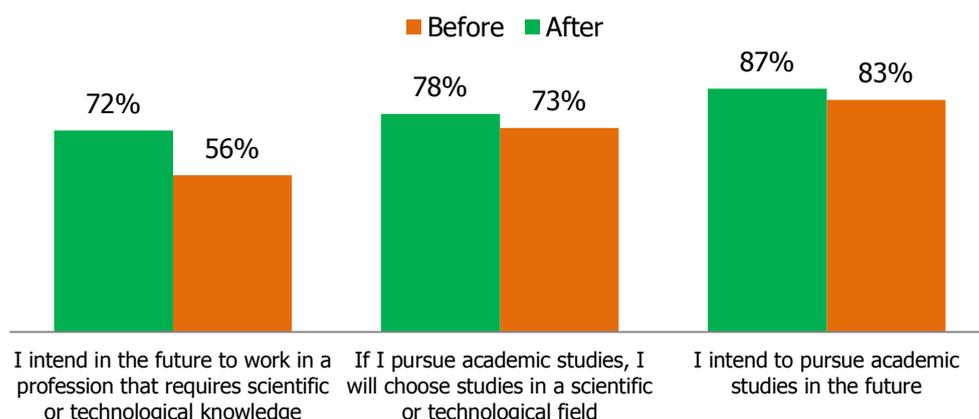
Attitudes towards the world of science

The counselors' attitudes regarding the world of science were very positive at the beginning of the camp, and remained so when it ended. For example, at the beginning of the camp 83% of the counselors stated that they greatly love the world of science, as compared with 85% upon its completion. In summary, the attitudes of the counselors increased slightly by 0.64% - from 6.26 to 6.30 (on a 1 to 7 scale).

Image of the Future

Here, too, the scores of the counselors were very high at the beginning of the camp and slightly increased after its completion. Before the camps, and even more so after, the counselors see themselves working in sciences in the future. For example, at the beginning of the camp 83% of the counselors indicated that in the future they intend to pursue academic studies in science, as compared with 87% at the end. In conclusion, the intention of the counselors to choose sciences in the future increased by an average of 3.53%, from 6.18 to 6.40 (on a 1 to 7 scale).

Image of the future

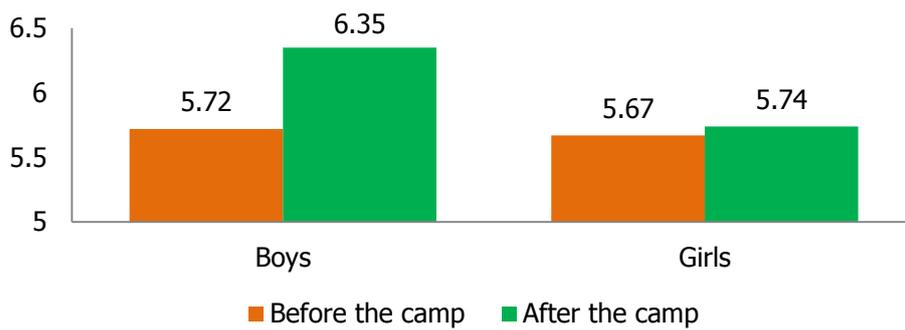


* Percentage of counselors who agreed with the statements

Gender Differences

The attitudes of the boys and girls are fairly similar at the beginning of the camp, but after its completion the boys open a significant gap. In fact, the average increase in all the parameter among the boys was 11.02% as compared with only 1.23% among the girls.

Effectiveness of the camp from the perspective of gender (total score)*



* Average of all the statements on a 1-7 scale

Summary and Conclusions

- The camp was found to be effective in raising the levels of all the parameters. Thus after the camp the counselors show increased interest in science, have a greater feeling of scientific capability, express more positive attitudes towards the world of science, and have greater intentions to work in science in the future.
- The increases in the different parameters were moderate, and ranged from 0.64% (attitudes towards the world of science) to 6.44% (interest in science). This is possibly due to the fact that the counselors already came to the program with positive opinions about science. In addition, the camp took place for only 3 days and it was evaluated with tools that were intended for examining the program through the whole year.
- It seems that boys benefit from the program more than girls. This issue will be further examined with receipt of the end-of-year data, but the program staff must concurrently try to understand the source of the gap and how it may be narrowed.