

Cognitive Education Around the World

Implementation of Feuerstein Instrumental Enrichment Program in a Primary School in New Zealand

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The Feuerstein Instrumental Enrichment (FIE) program was implemented in a primary school in New Zealand for 10 years old students with average educational ability. Targeted goals were to examine if the FIE program helped students to be less impulsive, plan well, and better in solving problems. The program started with 17 students for the first two school terms and from this group 8 students continued with two more school terms (one year). Results of this field study suggest that the 8 students who continued the FIE program made good gains in the targeted goals. This is only an exploratory project with a small sample of students and not a formal research study.

Keywords: impulsivity; bridged; cognitive functions; instrumental

Since July 2014 after the first workshop on the Feuerstein Instrumental Enrichment (FIE) program in Auckland, there was great interest among many parents and professionals in the FIE program. Many continued to attend and qualify as practitioners in this program. A selected few practitioners started to document and conducted small-scale studies on the benefits of the FIE program in children. The study below is exploratory and briefly shares the journey of one such study.

The goal of this study was to explore to what extent the FIE program can benefit 10-year-old students of average ability and without special education needs. More specifically we wanted to check whether FIE helps students to be less impulsive, plan well and better at problem-solving in class and school.

FIE (Feuerstein, Rand, Hoffman, & Miller, 1980) is a cognitive intervention program aimed at developing a broad range of students' cognitive functions and enhancing their learning potential. Unlike other cognitive programs that "infuse" cognitive strategies into curricular lessons,

FIE offers as separate, content-neutral lessons aimed at the development of cognitive strategies and function in their “pure” form. These strategies and functions are then “bridged” to particular content during regular curricular lessons. FIE materials include several series of paper-and-pencil tasks targeting such cognitive skills as comparison, classification, analytic perception, orientation in space and time, and so on.

METHODOLOGY

The study was conducted with a group of 17 primary school students. All students, 4 girls and 13 boys were 10-year old at the start of implementation. An absolute majority of them (82%) were of European ethnicity, 2 students were Maori, and 1 student was of mixed Indian/European ethnicity. All students were of average ability and no one of them had any special education needs. However, some students demonstrated behavioral problems and it was concluded that the entire group could benefit from more active learning engagement and better planning and problem-solving skills.

The FIE program has been implemented 3 hours per week for a period of two terms, for example, one semester. The following FIE instruments were used: *Organization of Dots*, *Orientation in Space I*, *Analytic Perception*, and *Comparisons*. The lessons were given by the author who has been trained in the Feuerstein methodology and the entire FIE program (14 instruments).

The impact of the program was evaluated by a series of measures that were administered before and after intervention:

- Cognitive: Raven Standard Progressive Matrices—RSPM (Raven, Raven, & Court, 2003)
- Teacher’s observation: Teacher Observation Schedule for FIE (Blagg, 1983)
- Students’ questionnaire: Students’ self-reporting questionnaire (created for the current study)
- Students’ self-efficacy scale (Bandura, 2006)

FIE PROGRAM IMPLEMENTATION AND RESULTS

Each FIE lesson included introduction made by the teacher, independent work with FIE tasks by students, the whole group discussion, and “bridging” exercises transferring cognitive skills to curricular subjects. Apart from the FIE tasks, video clips and posters have been used.

Observations made during the two terms confirmed that *Organization of Dots* tasks were the most challenging for students, but at the same time the most motivating. Students reported that they were able to focus better or/and for a longer period of time, that they can follow teachers’ instructions better, started to think more about what they are learning, improved their planning behavior, enjoyed making posters that presented selected cognitive functions to the class, and in general were looking forward to the next FIE lesson.

The pre- to post-intervention change in students’ problem-solving evaluated with the help of RSPM (raw scores) was significant and the effect size (d) medium:

Pre-test: 33.12 (SD 7.25); Post-test: 36.71 (SD 7.25); $d = 0.49$.

At the end of the first semester it was decided to continue FIE implementation with a subgroup of 8 students. The decision was made on the basis of students’ behavior rather than their cognitive ability. The selected 8 students demonstrated no behavioral problems and the teacher believed that they will successfully work with higher level FIE tasks.

The subgroup of these 8 students (6 boys and 2 girls) studied FIE for two additional terms completing level one of the Standard FIE program and started Level 2 of the Standard FIE program using the following FIE tasks: *Temporal Relations, Illustrations, Family Relations, Instructions, Categorization*. So this subgroup studied FIE for an entire school year, 3 hours per week. As can be seen below, though the selection of this subgroup was made without checking their cognitive test results, actually they scored higher at the pre-test of RSPM than the rest of the group. They also made a more significant cognitive change both during the first (Post-test 1), and in the second semester (Post-test 2). The effect size (d) of a year-long intervention was large.

Pre-test: 37.5 (SD 5.88); Post-test-1: 41.25 (SD 7.48); Post-test 2: 42.87 (SD 7.94)
 $d = 0.78$

DISCUSSION AND CONCLUSION

The current small-scale study confirmed the relevance of FIE program for students with typical development who, nevertheless need better learning and school engagement skills. The results of the study also support Feuerstein's recommendation to implement the FIE program for at least 1 academic year: The subgroup that received FIE for two semesters made more significant cognitive gains than the subgroup that received it for just one semester. It seems important that there is a considerable overlap between students' identification of the changes that take place in the classroom and the goals of FIE program, such as ability to ask relevant questions, following instructions, and listening to other students.

The present article is just a report from the field and it should be followed by a more formal study with a larger sample and a relevant comparison group of students.

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