

Assessment and Intervention in Technological Schools in the Arab Sector in Israel

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The goal of this article is to describe an educational intervention project in technological high schools in the Arab sector of the Israeli educational system. The intervention was in keeping with the Response-To-Intervention (RTI) approach, which was adopted by the Israeli Ministry of Education, following the American experience. The goals of the intervention were to develop assessment procedures and tools that would identify the difficulties, and to work with the teachers in order to improve their instruction.

Response-To-Intervention (RTI) is the systematic use of assessment data to most efficiently allocate resources in order to improve learning for all students (Burns & VanDer Heyden, 2006). Thus, it is the latest stage of the data-based decision-making movement that began with Bloom, Hastings, and Madaus's (1971) seminal work on formative assessment (Burns, 2008). However, the recent federal provision for RTI was the culmination of years of experience that affected how RTI is conceptualized today.

RTI involves four components; [1] systematic use of assessment data; [2] efficient allocation of resources; [3] enhanced learning; and [4] applicability to all children.

The Ministry of Education in Israel created a "work-model" for the schools based on these principles. The model includes several steps:

- (A) The teacher identifies the children who have learning difficulties in his own class.
- (B) The teacher with the support of specialists, prepares a work- plan for the child.
- (C) The teacher implements the work-plan and assesses the child's progress.
- (D) If the child progresses, he continues this work-plan; if not, he is referred for individualized assessment.

This "work-model" was utilized in intervention programs mainly in the Jewish sector in elementary and middle schools (grade 7 to 9). There is less application of this "work-model" in the Arab sector, especially not in the technological schools.

In order to understand the complexity of the work in the Arab sector, I will briefly describe the schools in this sector. The Arab population has its own schools in which the language of

instruction is Arabic and Hebrew is taught as a second language. In the Arab sector there is a continual increase in the number of technological high schools . These schools prepare the youngsters for technological professions such as: automobile mechanics, electricians, etc. The educational materials are often translated by professional and academic organizations from Hebrew into Arabic.

Another issue that is critical for the understanding the complexity of learning in Arab schools is the uniqueness of the Arabic language. Arabic has unique features of deglossia (differences between the spoken language and the written language), a phonological gap that exists between both strata of the language, orthographic complexity and finally, morpho-expressive complexity.

This uniqueness has many implications for the process of reading acquisition because reading skills require vast knowledge in the early stages of the acquisition process. Specifically, the phonological distance that exists between the spoken and written languages is considered to be a delaying agent in acquiring linguistic skills in mastering the standard language and in basic reading processes such as sensitivity to phonemes, phonological representation of phonological units that are typical to the standard language, recall of sight words, precision in word decoding, reading fluency, and listening comprehension. This causes failures in the stages of acquiring reading skills especially for children with low linguistic abilities (Abu Rabia, 1997; Raffik, 2008)..

Learning to read becomes a double mission in which the child is required to acquire both a linguistic system and an orthographic system simultaneously. This requires a systematic professional intervention at early stages, so that a beginning Arabic learner can overcome these difficulties. If such an intervention is not implemented, one of the possible results is continual difficulties in reading and writing. Most of the pupils in the technological schools are those who failed in regular schools and were referred to these schools in order to acquire a profession.

The intervention process

The intervention in the technological schools took place in three stages:

- (a) **Planning** – the theoretical concept of RTI was chosen to be the basis for the intervention, combined with the “work–model” of the Ministry of Education regulations. The planning stage included the following activities:

- (a1) Clarifying the needs of the school and understanding the characteristics of the

student population together with the supervisor of the schools, and determining the grade level to be assessed; (a2) Planning the sequence of the assessment procedure and the intervention that followed it; (a3) Identifying educational experts in assessment of learning skills and training them for this task; (a4) Designing informal assessment tools for identifying the students who are failing in schools. As there are no normed and standardized assessment tools in Arabic we had to utilize informal tools which can be the basis for future standardization research.

(b) Performance

(b1) The assessment battery was administered by the class teacher and the expert professional (called a “Matalit” in Hebrew – an “assessor of learning skills”); **(b2)** The “Matalit” scored the students’ answers and created 3 main profiles: A - students who performed well; B - students who have difficulties in reading comprehension or auditory comprehension but not in basic language skills; C - students who failed in basic skills such as: phonology, orthography, and spelling. The students in group B need an intensive and specific intervention program (tier 2 according to the RTI model) while the students in group C were also candidates for a more individualized educational evaluation. The purpose of this type of evaluation is to recommend individualized intensive support and accommodations on examinations; **(b3)** The Matalit planned workshops for the teachers in order to teach them how to incorporate the necessary teaching accommodations in their classes.

Methodology of data collection

Sample

The sample included 375 tenth grade pupils, 341 boys and 34 girls. All were pupils in 5 departments in technological schools: Electricity, secretarial skills, computer technician, automobile mechanics, and design. The socio-economical status of the students’ families was varied, from low SES to medium – high SES. All the schools were located in the northern part of Israel where the spoken Arabic language of the population is similar.

Screening tools

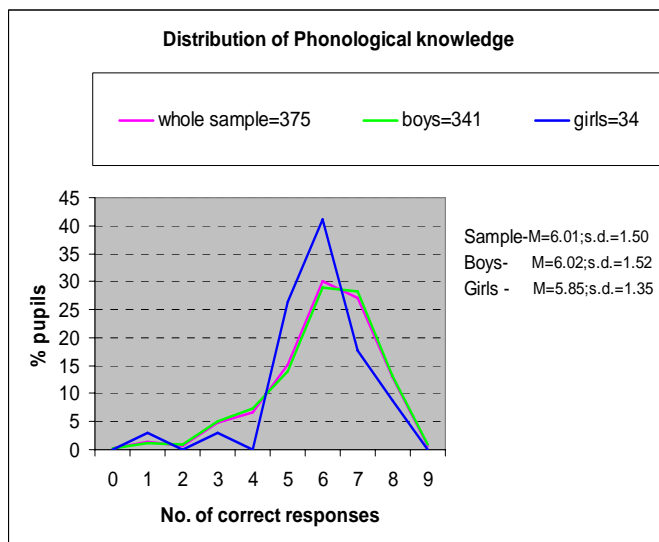
The test battery includes:

- 9 items testing phonological knowledge.

- 10 items testing orthographical knowledge.
- A 15 word spelling test
- Reading comprehension of both a narrative and an informative text: identifying details, understanding sequence, identifying main ideas, cause and effect, global understanding.
- Auditory comprehension: identifying details, making inferences, identifying main ideas, global understanding.

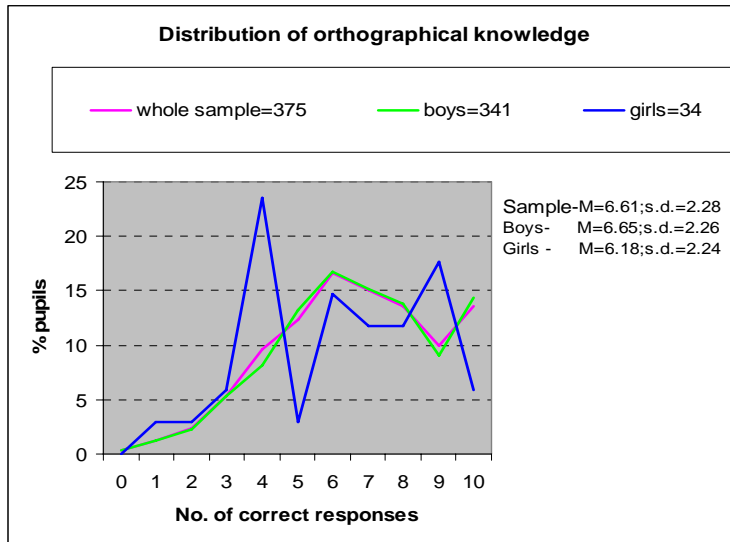
Screening results

- A.** A Pearson correlation of 0.386 ($\alpha= 0.01$) was found between phonological knowledge and orthographical knowledge; 0.181 ($\alpha=0.01$) between phonological knowledge and spelling; and 0.333 ($\alpha=0.01$) between orthographical knowledge and spelling.
- B. Phonological knowledge:** The distribution of the percentage of correct responses to the phonological items is presented in Graph # 1.



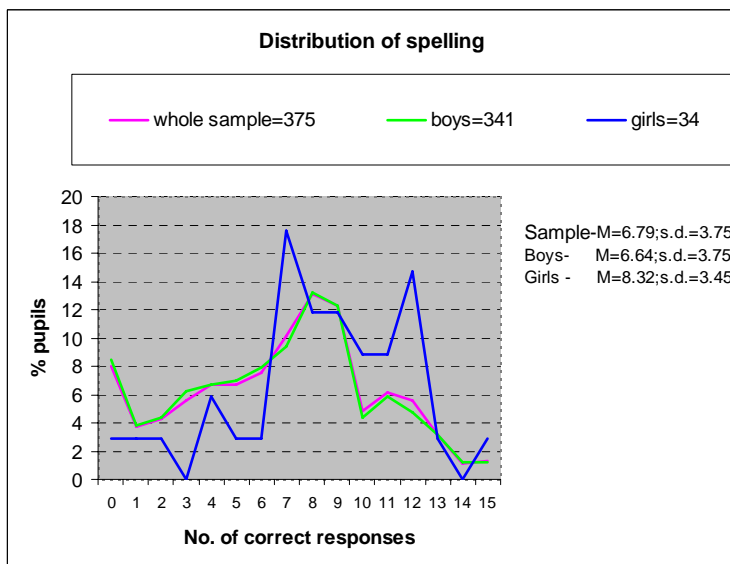
Usually, one would expect that pupils in grade 10 have mastered phonological knowledge and should achieve perfect scores. Here we can see that less than 1% of the sample performed well on all the nine items. Those falling below the mode (6 correct answers) can be considered the weakest group. This group consisted of 28.8% of the whole sample, 21.3% of the boys and 32.3% of the girls. The group with scores above 6 was considered to have relatively better phonological knowledge. This group included 40.8% of the whole sample, 42.3% of the boys and 26.4% of the girls. In general, the girls were weaker than the boys.

C. Orthographical knowledge - The distribution of the orthographical knowledge is presented in Graph # 2.



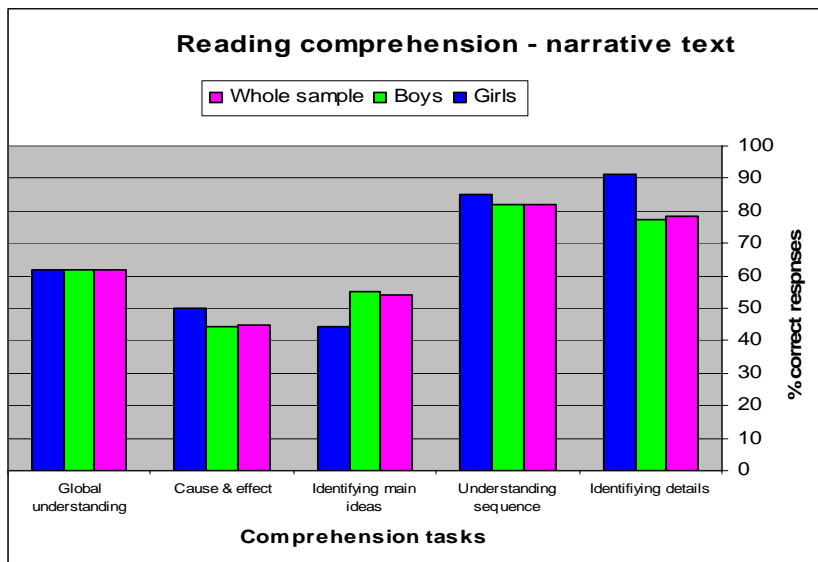
The weakest group included 30.9% of the whole sample, 25.25% of the boys and 38% of the girls. Approximately half of the sample (52.1%) had relatively fewer mistakes on orthographical items than the weaker group. However, we have to keep in mind that the expectation of 10th graders is to have fully mastered the phonological and orthographical tasks.

D. Spelling Test- The distribution of the spelling scores is presented in Graph #. 3.

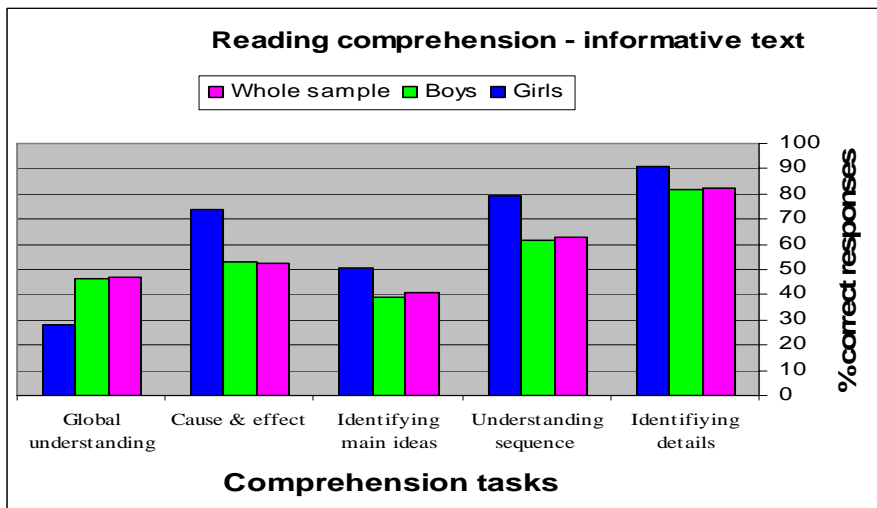


The results showed difficulties in spelling. Approximately half of the whole sample, 53.9% of the boys and 38% of the girls were weaker than the mode; and approximately one third of the students had fewer spelling mistakes than the rest of the group. Again, one would expect that pupils at this age would spell the words on this particular test completely correct.

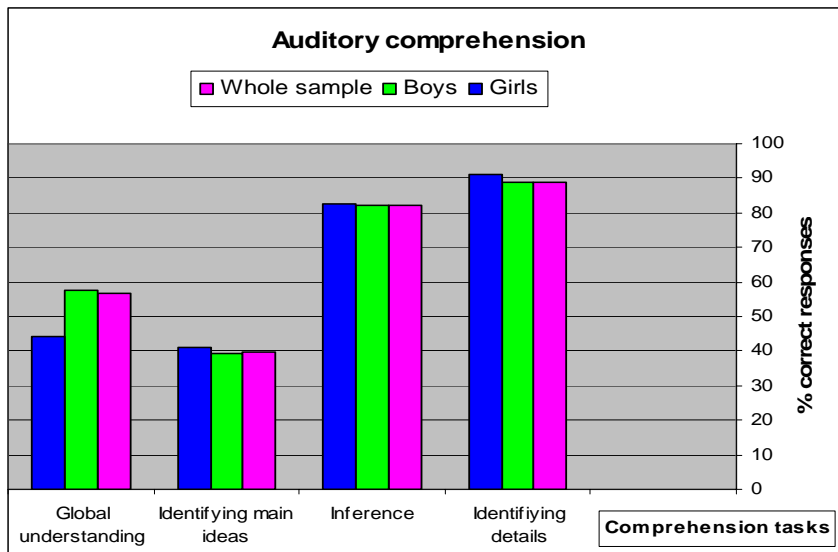
E. Reading comprehension – Narrative text: Most of the pupils performed well on the detail identification and sequence comprehension items. . Approximately half the sample showed a global understanding, understood the main ideas and cause and effect in the text, while the other half of the pupils failed these reading comprehension tasks.



F. Reading comprehension – Informative text: The data showed a very similar picture to that of the narrative text.



G. Auditory Comprehension - There was greater variability in auditory comprehension tasks than on reading comprehension. In terms of global understanding, approximately half of the sample was ranked as performing well while the other half showed poor understanding. In terms of understanding main ideas, more than half were ranked as having poor understanding. In making inferences and in detail identification the results were reversed, more students were ranked as performing well (82.1% and 88.9% correspondently).



Discussion

The findings showed that only a tiny percentage of the tenth grade pupils screened had fully mastered basic phonological, orthographical and spelling skills. Most had only partial mastery of these basic skills. There are a number of explanations for these findings. Many are children whose learning disabilities have never been diagnosed. The awareness of learning disabilities has spread to the Arab sector only recently. A second explanation stems from the complexity of the Arab language (deglusia) as described above and the lack of preventative methods of reading instruction. Although the findings showed better achievement on the reading and auditory comprehension tasks, nonetheless, these levels of achievement were far below what is expected from pupils in the tenth grade.

The interventions, therefore, must be adapted to the needs of this population, taking into account both comprehension difficulties as well as deficiencies in basic language skills. In the first year of the program the main topics of the workshop were supplying the teachers with

theoretical knowledge about learning disabilities and introducing useful strategies for teaching students who have difficulties in the regular class. The second year focused on developing teaching materials in the various subject matters. Each series of workshops consisted of 28 hours of instruction.

The model chosen for the workshops was based on a five step cognitive problem solving approach. The steps were: [A] defining a problem (e.g. difficulty in reading a long text); [B] brainstorming alternative solutions; [C] choosing one alternative; [D] implementation of the chosen solution; [E] evaluating the results.

The workshops met once every three weeks, and each session followed a similar structure: a report and discussion of the implementation of the solution adopted at the previous session, defining a new problem and raising alternative solutions and planning the implementation of the selected solution. This model enabled the teachers to implement the proposed solution immediately and to evaluate the results.

In the course of the first year workshops, the issue of a lack of appropriate learning materials was identified, and this was chosen as the main topic for the second year workshops. Based on the reflections of the teachers who participated in the workshops, the plan for the third year is to focus on pupil evaluation and feedback.

Conclusions:

- There is an urgent need for developing standardized screening tests in the Arabic language.
- It is important to cultivate the teachers as a team and enhance their commitment to support pupils with difficulties and learning disabilities.
- It is important to involve the parents in the whole process beyond asking for their permission to screen their children.

In my presentation I will focus on the intervention process and describe the workshop.

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