

Implementation of Response to Intervention Model in the Canary Islands

by Juan E. Jiménez

A guarantee of success for any educational system depends on effective learning of basic reading, writing, and math skills; skills that, unfortunately, not everybody acquires sufficiently. For this purpose, the detection and early intervention of difficulty achieving basic proficiency in mathematics and literacy were established as priority objectives by current educational legislation in Spain (BOE, 2013). In the Canary Islands, an autonomous Spanish region located between three continents and composed of seven islands in the Atlantic Ocean, this priority is justified when we consider the achievement scores from the last decade (period 2001–2013). According to data from the Canarian Institute of Statistics, the 2013–2014 school year indicated that 4.7% of 8-year-old students at the end of the second year of primary school were eligible for early intervention to avoid repetition. In order to address this challenge, it is necessary to provide specialized training for teachers who provide support to these students in these academic skills. Likewise, it is necessary for the educational administrators at the schools to monitor students who may be at risk or not.

In their meta-analysis, Marzano, Pickering, and Pollock (2001) concluded that teacher effectiveness is one of the most important factors explaining learner progress, not only in reading, but also in math and other school areas. Likewise, the latest report from the European Commission promoted by the Eurydice Network concluded that one of the most important determinants of academic success in the early years of schooling is the specialized training and quality of teachers (EACEA/Eurydice, 2011).

According to the most recent report published by the Spanish Ministry of Education about specific educational supports for dyslexic students within the educational system, the psychoeducational assessment of possible difficulties to learn the basic skills (i.e., reading, writing, and math) is carried out after the end of the second year (Grañeras et al., 2012). Then, we must wait at least two years to verify that we are facing an instructional mismatch that might confirm a learning disability. Thus, a student who is delayed two to three years may develop a sense of learned helplessness and low motivation to learn before we can systematically provide support. This implies that instruction arrives too late. It is necessary to assess and provide early intervention when the student is first struggling with such

learning. We need to ask ourselves the following question: Could the Response to Intervention (RTI) framework be an alternative to improve the academic performance of these students? In recent years it has been suggested that an RTI approach is probably the best opportunity to improve education for all students in general and in particular for those students at risk of experiencing learning difficulties (Tilly, 2006).

Problems in the basic skills of reading, writing, and math can already be detected from the age of 5 years and the first year of primary school. Early intervention would reduce the high rate of repetition at the end of the first cycle of primary education. The conclusion is simple: It is a priority to replace in the Canary Islands a “wait to fail” model by an RTI model. The introduction of RTI in the Canary Islands would reduce costs to educational administration and avoid the accumulation of academic failure of the at-risk population. Once the first two years of primary school have passed, if interventions are not provided to struggling students, their future school progress could be compromised.

Spanish Online Teacher Professional Development Program

To address these challenges in the Canary Islands, the authors developed online education modules to provide pre-school, elementary, and special education teachers online education, instructional materials, and tutorials about how to teach basic skills, based on the most recent scientific investigations. The research group, Learning Disabilities, Psycholinguistics and Information and Communication Technologies of the Universidad de La Laguna (see <https://ejimenez.webs.ull.es>) has developed web-based training for teachers oriented to offer specialized training that includes both the instructional materials (i.e., for reading, Letra program, Jiménez, 2015, 2016; for math, Primate program, Jiménez & Gutiérrez, 2017a; for writing, Trazo program, Jiménez, 2017) as well as tools for universal screening and progress monitoring (for writing, Jiménez & Gil, 2017; for math, Jiménez & de León, 2017a; for reading, Jiménez & Gutiérrez, 2017b). All these e-tools are composed of e-learning modules, teacher self-assessment stopping points, web-based tutorials for preparing teachers, and an interactive discussion forum. These web-based, tutorial learning systems use the Moodle platform to create a virtual

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Abbreviation

RTI: Response to Intervention

educational environment that is based on scientific evidence (Crespo, Jiménez, Rodríguez, Luft, & Park, 2017; Jiménez et al., 2010). The Letra and Primate programs have been piloted with teachers from different Latin American countries (e.g., Mexico, Guatemala, Ecuador, Chile, etc.) in coordination with their respective education ministries and departments (Jiménez, O'Shanahan, González, Frugone, & Barrientos, 2014; Jiménez & O'Shanahan, 2016). All these training platforms have been developed with the support of the National Research & Development & Innovation Plan of the Ministry of Economy and Competitiveness in Spain.

Due to the geographical fragmentation of the Canary Archipelago, it is necessary to provide online training because it involves less economic costs to the educational administration. One of the main requirements for an adequate implementation of the RTI model in the school is to guarantee specialized training to all the teaching staff that would support those students identified as at-risk to receive the more intensive Tier 2 intervention. Some recent studies have focused on using technology to improve the teaching skills of teachers who teach children from at-risk backgrounds, including video and web-based video platforms to promote effective professional development in literacy for these teachers. This kind of professional development technology has proven effective for teachers who serve a diverse group of learners (Vernon-Feagans, Kainz, Hedrick, Ginsbert, & Amendum, 2013).

Example of Implementation of the RTI Model

For a proper implementation of the RTI model, it is necessary to establish a very close collaboration between the educational administration and the Canarian universities. The General Direction of Education and Educational Innovation of the Department of Education of the Government of the Canary Islands offered at the beginning of the academic year 2016-2017 a professional teaching accreditation focused on teaching students with diverse needs using the RTI model in

reading and math. Currently, teachers from 123 schools are participating to get proficient teacher accreditation to continue implementing RTI after being accredited. Figure 1 shows the distribution of participating schools in each island and program.

The online training of the support teachers of the participating schools is complemented by four face-to-face meetings during the year. These face-to-face meetings coincide with the periods of screening assessment (i.e., beginning, middle, and end of the course). At the same time, training meetings are convened for school counselors, school principals, and an independent body that carries out inspections of schools in the Canary Islands.

One of the greatest challenges in education is to be able to give students what they need to improve their academic performance. Metaphorically speaking, it is like making a suit tailored for each child. Consequently, a main target to achieve with teachers' training was to provide them the type of instruction that at-risk students need to receive. The instructional sequence included the following strategies:

- Explicit (or direct) instruction consists of a teacher-centered approach that is effective in teaching basic or isolated skills, but has also been used successfully for teaching more complex mathematical and reading notions (Torgesen, 2006; Vaughn & Fuchs, 2013; Vaughn, Wanzek, Murray, & Roberts, 2012). This type of explicit instruction provides a step-by-step format for teachers to use and requires mastery of each step by the student.
- Use of carefully articulated lessons in a deliberate and explicitly taught sequence.
- Use of small groups (Gersten et al., 2008).
- Keep children on certain tasks for a high percentage of time.



Figure 1. Distribution of Participating Schools in Each Island and Program

- Provide more time in the explicit instruction of the most important basic skills of each curricular area (Vaughn & Fuchs, 2013).
- Use fast-paced instruction.
- Have students respond frequently to the instruction and receive immediate feedback.
- Make provision of scaffolding, modeling, and corrective feedback.

This explicit instruction is based on the concept of gradual release of responsibility, which includes the teacher’s modeling, followed by a more limited involvement of the teacher, which then disappears as students begin to master the material (Zakaria, Care, & Griffin, 2016).

Reading instruction is centered on five main components prescribed by the National Reading Panel (NRP, 2000; Jiménez & O’Shanahan, 2008): a) phonological awareness; b) alphabetical knowledge and decoding; c) fluency; d) vocabulary; and e) comprehension. In the case of mathematics, instruction should be focused on the following components (Jiménez & de León, 2017b; 2017c; National Mathematics Advisory Panel, 2008): a) understanding the concepts: counting, quantity estimation, numerical coding, magnitude, and distance; b) arithmetic calculation: all-part scheme, operations, strategies, and their evolution; and c) solving verbal arithmetic problems (i.e., word problems): all-part schema, semantic structure (change, combination, comparison and equalization), and place of unknown (canonical vs. non-canonical).

Schedule						
November	December	January	February	March	April	May
Universal Screening Form A	Progress monitoring ¹	Progress monitoring ²	Universal Screening Form B	Progress monitoring ³	Progress monitoring ⁴	Universal Screening Form C
Risk status reporting Early detection of at-risk students	Monitoring of at-risk students	Monitoring of at-risk students	Risk status reporting Early detection of at-risk students Monitoring of at-risk students	Monitoring of at-risk students	Monitoring of at-risk students	Risk status reporting Monitoring of at-risk students Monitoring of at-risk students
Classroom	At-risk students	At-risk students	Classroom	At-risk students	At-risk students	Classroom
21-23 Nov	15-16 Dec	24-25 Jan	20-23 Feb	30-31 Mar	27-28 Apr	29-31 May

Figure 2. Timing of the Tier-2 of the RTI Model in the Canary Islands

Teacher Training: Face-to-Face Meeting	
TENERIFE	GRAN CANARIA
21th September	22nd September
17th November	16th November
15th February	16th February
18th May	17th May

Figure 3. Mobility of External Observers Across the Islands

Figure 2 shows the schedule of Tier 2 implementation phase of the RTI model in the Canary Islands. Universal screening is carried out on a school population of approximately 8,000 students between 5 and 8 years old. This initial universal screening includes both the schools participating in the experimental group and the control group. The Web Rtl Data System from the Department of Education enables schools to enter and monitor student scores from IPAL (Indicators of Basic Early Reading Skills, Jiménez & Gutiérrez, 2017b) and IPAM (Indicators of Basic Early Math Skills, Jiménez & de León, 2017a). The fidelity of the implementation has consisted in evaluations of the effects of the online teacher training in the Letra and Primate programs, control of attendance at the face-to-face meetings, participation in the teacher feedback, and the results of screening and progress monitoring obtained on the at-risk population. There has also been a control group of schools that did not implement the RTI model. In addition, a double observation system (i.e., direct and indirect) has been performed in the experimental group. Direct observation has consisted of the participation of external observers who travel to the different islands and record observations of the screening assessment and monitoring progress, as well as the intervention itself (see Figure 3). Indirect observation has been done through self-reports by teachers, registration of intervention sessions where teachers must record the student’s name, the date of the session, coordination and group, duration of the session, attendance or not of the child, and the components or skills worked in the session.

The last face-to-face session was held with the teachers, concluding the screening phase and corresponding with the final phase of the school year. The inspection service reported that approximately 25% of at-risk children dropped out of risk status during the period of November to February, a significant improvement of education in the Canary Islands and an indication of the potential of a research-based RTI model through university-based collaboration.

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