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Full Length Research Paper

The Teaching at the Right Level approach: A paradigm shift to accelerate Moroccan pupil's learning

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ABSTRACT

For the first time, a comprehensive, multidisciplinary remedial system has been introduced in Moroccan schools designed to fill gaps in students' fundamental knowledge. The system is based on the Teaching at The Right Level (TARL) method, the principle of which is to relearn fundamentals according to the student's actual level through interactive, effective, and fun activities. This paper presents a summary of TARL's initial impact after 8 weeks of remediation. Initial analyses of 63,000 pupils show a highly promising effect of teachers in pioneering schools on fundamental knowledge in all three subjects and for all grades. Prior to the project's commencement, a placement test was conducted in September in all pioneer schools involving 300,000 pupils. The results confirmed a deep crisis in learning: almost 80% of pupils had not mastered the fundamental skills taught in the previous year. The vast majority of pupils were more than a year behind, making them highly vulnerable to the risk of failure throughout their school careers. Within this framework, an "After-TARL" test was conducted to measure the initial effects of remediation on fundamental knowledge. An initial evaluation period ran from November 1 to 3, during which all pupils in the schools were tested. Mastery rates of assessed skills multiplied by 4 in mathematics, by 3 in French, and by 2 in Arabic. These initial achievements will need to be consolidated throughout the year to become ingrained in pupils' long-term memory. We conducted an experimental investigation from November 7 to 10 with a pre-selected sample of 1400 students in 76 pioneer schools to confirm the validity of the "After-TARL" test findings in pioneer schools. The same students evaluated by instructors during the initial assessment session from November 1 to 3 were retested by us, the verifiers.

Keywords: TARL, pioneering schools, remediation, fundamental knowledge, impact.

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INTRODUCTION

Morocco is one of the developing countries where the level of learning achieved by pupils remains relatively low. Despite efforts to improve the quality of learning, results from international and national surveys reveal low levels of achievement. According to numerous assessments, both qualitative and quantitative, Morocco ranks among the lowest-performing countries in terms of the quality of learning outcomes. Another aspect of the country's poor performance on international tests is the prevalence of so-called "underperformers" (students classified as underperformers if they score below the minimum threshold for level 2 proficiency according to PISA or the low reference level according to TIMSS and PIRLS), who are considered particularly at risk. This weighting is notably evident at both primary and secondary levels across various subjects. Proportions exceed 50% among schoolchildren in reading, math, and science, as indicated by the latest TIMSS-2019 and PIRLS-2021 assessments. Among high school students, these proportions approach 70% in science and around three-quarters in math.

Given these severe educational challenges, the Moroccan education system has adopted a novel approach to address these issues: the Teaching at the Right Level (TARL) program. This program, developed by the Indian NGO Pratham, aims to bridge the gap in fundamental skills by re-teaching the basics to students at their actual level through interactive, effective, and engaging activities. TARL focuses on helping students develop reading, comprehension, expression, and arithmetic skills tailored to their current learning level. The program begins with an intensive intervention at the start of the school year and continues with extra-curricular support throughout the year for students

facing learning difficulties.

To assess the baseline skills of pupils before the program's implementation, a placement test called "Before-TARL" was conducted from September 7 to 9, 2023, involving 300,000 pupils. The results confirmed a deep-rooted learning crisis: almost 80% of pupils did not master fundamental skills from the previous year, leaving them highly vulnerable to future educational challenges. Following this, an "After-TARL" test was conducted from November 1 to 3, 2023, after 8 weeks of the program. Initial analyses showed significant improvements in skills across mathematics, French, and Arabic, indicating a potential catch-up of 1 to 2 years of schooling.

To further verify these promising results, an experimental study was conducted from November 7-10, targeting a pre-selected sample of 1,400 students from 76 pioneer schools. This study aims to address the following research questions:

1. How effective is the TARL approach in improving arithmetic skills?
2. How effective is the TARL approach in improving Arabic reading skills?
3. How effective is the TARL approach in improving French reading skills?

Overall, the study seeks to evaluate the effectiveness of the TARL approach in addressing the foundational learning deficits observed in Moroccan schools. By assessing improvements in literacy and numeracy, the research aims to determine the program's potential for widespread implementation and its capacity to significantly enhance educational outcomes nationwide. This study not only aims to validate the effectiveness of the TARL program but also has the potential to guide future educational reforms in Morocco, contributing to a significant enhancement in educational quality and equity.

LITERATURE REVIEW

Pratham, one of India's largest education-focused NGOs, has made significant strides in improving educational outcomes through its innovative and low-cost interventions. Over the past two decades, Pratham has developed and implemented a range of high-impact strategies aimed at enhancing core skills such as reading and mathematics among millions of children and youth annually. Central to these efforts is Pratham's Teaching at the Right Level (TARL) strategy, which has been instrumental in improving children's learning outcomes by addressing their individual learning levels. The TARL approach, initially designed for students who had completed grades III, IV, or V but lacked basic skills, starts instruction at the child's current level, rather than their grade level. This method focuses on fundamental literacy and numeracy skills, aiming to help children master essential reading, comprehension, expression, and numeracy abilities-key building blocks for their educational advancement. Studies have consistently demonstrated that once these skills are acquired through TARL, they are retained over time, making this approach an effective and cost-efficient solution for helping children "catch up" within a relatively short period. Notably, children aged 7 or 8 and older, who have been in school for several years, have shown the capacity to rapidly acquire these skills using the TARL methodology (The FLN initiative, nd; Pratham, nd).

A critical component of the TARL approach is its reliance on comprehensive assessments. TARL interventions begin with an initial assessment conducted one-on-one with each child to determine their current learning levels. These assessments evaluate fundamental reading and math skills and are used to monitor ongoing progress. Based on the results, teachers group students by their skill levels and implement targeted, engaging activities designed to accelerate learning and development (The FLN initiative, nd). The effectiveness of this tailored approach is evident in various evaluations.

In Haryana, a significant impact evaluation of the TARL program conducted in 2015 revealed noteworthy improvement in students' reading abilities. Initially, 34% of children in grades 3 to 5 were able to read a paragraph or a story. Following the 60-day TARL program, this figure increased to 47.6% in the control group and 53.1% in the treatment group, representing a 5.5 percentage point increase in students' ability to read at this level due to the program (Stern et al., 2021). This improvement underscores the underscores the program's effectiveness in enhancing literacy skills.

In Indonesia, the adaptation of the TARL approach for the All-smart Children (SAC) initiative demonstrated its efficacy in closing learning gaps. Inadequate reading abilities can significantly hinder students' progress and result in missed learning opportunities in subsequent classes. To address these challenges, the SAC Approach involves a three-stage process: Assessment, Grouping, and Learning. The initial assessment measures a student's aptitude, while grouping enables development based on their skill levels. Subsequent literacy learning is tailored to their abilities. For instance, during the initial assessment at SDN Setiling and SDN Sekedek, students displayed varied reading abilities, with 24% at letter level 11, 81% at word level 12, 31% at paragraph level 10, 3% at tale level 1, and 83% at story level 2. After two weeks of targeted literacy acquisition, the second assessment showed notable improvements: beginner level at 17.8%, letter level at 12.06%, word level at 11.31%, paragraph level at 10.8%, tale level 1 at 18.4%, and story level 2 at 29.6%. The proportion of students demonstrating improvement reached 35.43% (Jazuli, 2022). Additionally, the use of TARL for science learning has increased students' motivation, curiosity, independence in problem-solving, patience in completing exercises, and focus on the learning process, further highlighting the approach's versatility and effectiveness (Inayati and Waluyo, 2023).

In Morocco, the application of TARL is part of a broader effort to address persistent deficiencies in literacy and numeracy despite high enrollment rates. Reports from various annual assessments have

highlighted that students often lack essential skills due to factors such as inadequate infrastructure, insufficient teaching staff, inadequate teacher training, and combined classrooms (Moubtassime et al., 2023). The Moroccan educational reform aims to bridge these gaps through innovative teaching methods, including interactive and engaging activities, alongside the provision of educational, digital, and material resources. Implementing these strategies requires a transformation and standardization of teaching practices in classrooms, necessitating a commitment from teaching staff and comprehensive certification training (MEDIAS 24, 2023). The initial evaluation of the TARL pilot project in Morocco reviewed the implementation process, preliminary results, and required phases for success. It highlighted the need for effective teacher training covering both theoretical and practical aspects, including pre-experiment exams, student output assessment, result analysis, level evaluation, activity planning, and outcome assessment (Ibourk et al., 2023).

The broader context of TARL research underscores its significance in addressing educational challenges. A study focused on Indonesian primary education highlights the critical importance of literacy skills, extending beyond basic reading and writing to include critical thinking. It identifies low reading literacy levels among Indonesian students as a significant issue that necessitates effective educational interventions like TARL, which tailors teaching to individual student abilities. The study employed a pre and post-test design, selecting classes based on literacy levels and applying TARL to one class while using conventional methods in another. Data collection involved observations, teacher interviews, and documentation, with analysis using descriptive and inferential statistics through SPSS software. Results revealed that the TARL approach led to a significant increase in literacy skills, with average scores rising from 57.89 to 87.97 in the experimental class, compared to a smaller increase in the control class. Statistical analysis confirmed a significant difference in literacy skills between the two groups, supporting the effectiveness of TARL. The discussion highlights that TARL significantly enhances literacy skills compared to traditional methods, emphasizing its adaptability to student needs and the importance of consistent implementation. The study recommends continued use of TARL in literacy education and suggests further research to evaluate its long-term effectiveness.

In summary, the literature reveals that Tarl's approach whether through direct interventions or adaptations to different contexts has proven effective in improving literacy and numeracy skills. Evaluations from India, Indonesia, and Morocco highlight its adaptability, effectiveness, and potential for scalability, while also pointing to areas for ongoing improvement and research to sustain and enhance its impact.

The theoretical underpinnings of the TaRL approach

Teaching at the Right Level (TARL) is an educational approach designed to improve foundational literacy and numeracy skills in elementary school children, particularly in low-income contexts. The methodology was developed by Pratham, an Indian non-governmental organization, and has been widely studied and applied in various contexts.

Theoretical framework of TARL

Constructivist learning theory:

- Piaget's Theory of Cognitive Development: TARL is influenced by constructivist theories, notably Jean Piaget's stages of cognitive development. Piaget posits that children construct knowledge through direct interaction with their environment. TARL emphasizes the importance of providing learning experiences that are appropriate to the child's cognitive development stage.

- Zone of Proximal Development (ZPD): Lev Vygotsky's concept of the ZPD, which emphasizes the optimal learning zone where a child can perform a task with guided assistance, informs TARL strategies. Facilitating learning just beyond the current ability of the child, as proposed by Vygotsky, is a core principle.

Differentiated instruction:

TARL recognizes that children in the same age group or grade can have different learning needs and levels. Differentiated instruction is a pedagogical response to this diversity, allowing educators to tailor teaching methods and academic content to the individual needs of students.

By grouping children according to their current learning levels rather than their age or grade, TARL focuses on targeted skill development.

Learning by doing and active engagement:

Experiential learning principles, as advocated by educational theorists like John Dewey, underscore the importance of active engagement and hands-on experiences in learning. TARL incorporates activities, actions, games, and exercises that make learning interactive and enjoyable, helping children to engage deeply with the material.

Mastery learning:

This concept, introduced by Benjamin Bloom, holds that students must achieve a high level of understanding of prerequisite knowledge before moving forward to learn subsequent information. TARL adheres to this by ensuring children master foundational skills before tackling more advanced concepts.

Behavioral learning theory:

Rooted in B.F. Skinner's work on operant conditioning, behavioral theories emphasize reinforcement and

immediate feedback. TARL utilizes frequent assessment and feedback loops to reinforce learning, adapting teaching methods based on the feedback.

Social learning theory (Albert Bandura):

Learning is seen as a social activity, where children learn from interactions with their peers as well as through guided instruction. Peer learning is an integral part of TARL, as children often work in groups, learning from and teaching each other.

Implementation of TARL Principles

- Assessment: Initial assessments are conducted to determine the actual learning levels of children. These assessments focus on basic reading and arithmetic skills.
- Grouping: Based on assessment outcomes, children are grouped according to their current learning levels rather than their age or grade.
- Targeted Instruction: Instruction is tailored to the specific needs of each group, focusing on key competencies in literacy and numeracy.
- Continuous Evaluation and Feedback: Learning progress is frequently assessed, and the instruction is adapted accordingly to better meet the evolving needs of students.
- Use of Volunteers and Community Participation: TARL often involves local volunteers for instruction, enhancing community engagement in the educational process.

METHOD

In order to verify whether the results of our study align with the findings of the official study conducted by MMNE, which suggests that the TARL approach is effective on a regional scale in achieving its stated objectives as a remedial procedure and should be disseminated to all schools nationwide, we conducted a second 'After-TARL' test on November 7, 8, 9, and 10. We re-tested a sample of 1400 students who were initially evaluated by teachers. The 'After-TARL' test is equivalent to, but not identical to, the 'Before-TARL' test and was unknown to the verifiers until the day of testing. It contains the same items as the 'Before-TARL' test, and the study's results were based on comparing each item before and after the TARL method. The sample was chosen randomly.

Methodology

To evaluate the effectiveness of the Teaching at the Right Level (TARL) intervention, a comprehensive pretest-posttest experimental design was implemented. This quasi-experimental approach aimed to explore causal relationships by assessing the impact of TARL on Moroccan pupils' learning levels.

Testing procedure

In order to verify the alignment of our study's results with those of the official MMNE study, which suggests the TARL approach is effective regionally and should be expanded nationwide, we conducted a second 'After-TARL' test from November 7 to 10, 2023. This test involved re-evaluating a random sample of 1,400 students from the 76 pioneer schools that had previously participated in the 'Before-TARL' assessment. The 'After-TARL' test, which was equivalent but not identical to the 'Before-TARL' test, contained similar items, and its details were unknown to the verifiers until the day of testing. The study's results were based on comparing responses to each item before and after the TARL intervention.

In India, learners were assessed using the Annual State of Education Report test, which classifies children into groups. For reading, the categories are as follows: (1) beginner (cannot recognize letters), (2) letter recognition, (3) word recognition, (4) reading a simple paragraph, and (5) reading a story. The reading levels are categorized into five values: (0) cannot read, (1) can read letters, (2) can read words, (3) can read a paragraph, and (4) can read a story (Moroccan Ministry of Education, 2023). For mathematics, the categories include (1) beginner (cannot recognize numbers), (2) recognition of single-digit numbers from 1 to 9, (3) recognition of double-digit numbers from 10 to 99, (4) subtraction level, and (5) division level.

In Indonesia, five levels were used for mathematics pre-assessments: beginner level, one-digit level, two-digit level, three-digit level and four-digit level (Moubtassime et al., 2023). Similarly, the 'mathematics level' variable has four different values: (0) cannot recognize numbers, (1) recognizes numbers, (2) can perform subtraction operations, and (3) can perform division operations (Banerji and Chavan, 2020). In Morocco, they used the following reading levels in French and Arabic: (1) beginner, (2) letter level, (3) word level, (4) paragraph level, (5) story level, and (6) comprehension level. For mathematics, Moroccan teachers used the same categories as in the Indian model (Moroccan Ministry of Education, 2023)."

For the purposes of this study, we will use six reading levels for Arabic: (1) beginner (value = 1), (2) letter (value = 2), (3) word (value = 3), (4) paragraph (value = 4), (5) story (value = 5), and (6) comprehension (value = 6). For French: (1) beginner (value = 1), (2) letter (value = 2), (3) word (value = 3), (4) paragraph (value = 4), and (5) comprehension (value = 5). For mathematics, we used the following categories: (1) beginner (value = 1), (2) recognition of single-digit numbers (value = 2), (3) recognition of double-digit numbers from 10 to 99 (value = 3), (4) addition (value = 4), (5) subtraction (value = 5), (6) multiplication (value = 6), (7) division (value = 7), (8) addition + problem (value = 8), (9) multiplication + problem (value = 9), and (10) division + problem (value = 10).

Reading and mathematics levels

To ensure consistency and comparability, reading and mathematics levels shown in Table 1 were used.

Table 1. List of validation.

Arabic level	Ar_Code	French level	Fr_Code	Mathematics level	Maths_Code
Beginner	1	Beginner	1	Beginner	1
Letter	2	Letter	2	Single-digit numbers	2
Word	3	Word	3	Double-digit numbers	3
Paragraph	4	Paragraph	4	Addition	4
Story	5	Comprehension	5	Subtraction	5
Comprehension	6			Multiplication	6
				Division	7
				Problem +Addition	8
				Problem +Multiplication	9
				Problem +Division	10

Sampling and selection

The ministry undertook a pretest-posttest experimental design utilizing a quasi-experimental approach, designed specifically to explore causal relationships. This methodological framework sought to ascertain whether the introduction of the independent variable, TARL (Teaching at the Right Level), had a discernible impact on the dependent variable, namely the learning levels of Moroccan pupils. To bolster the credibility and precision of the findings, rigorous measures were taken in the selection process of participating schools and classes. Schools were chosen randomly to ensure a representative sample, and within those schools, classes were also selected randomly. This meticulous approach not only aimed to validate the experimental outcomes but also underscored the commitment to robust scientific methodology in educational research.

Schools were selected randomly to ensure representativeness, and within those schools, classes were also chosen randomly. This rigorous sampling strategy aimed to produce a sample that accurately reflects the broader population of Moroccan students, thus enhancing the validity of the study's findings.

Validation of instruments

The assessment tools used for both the 'Before-TARL' and 'After-TARL' tests were based on established methods and were tailored to match the educational standards of the Moroccan context. These tools were validated through prior pilot studies and expert reviews to ensure their reliability and appropriateness for the study's objectives.

Data analysis

To evaluate the effectiveness of the Teaching at the Right Level (TARL) intervention, we employed a range of statistical analyses to compare pretest and posttest results. Initially, *descriptive statistics* were calculated for both pretest and posttest scores, including means, standard deviations, and ranges, to provide an overview of the data distribution.

For the primary analysis of the intervention's impact, *paired t-tests* were conducted to compare pretest and posttest scores within the experimental group. This test was chosen due to its ability to assess whether there were statistically significant differences in scores before and after the TARL intervention for the same group of students. The assumptions of normality and the paired nature of the samples were verified prior to conducting the test.

To compare the effectiveness of TARL with the conventional method, *independent t-tests* were used to analyze the differences in post-test scores between the experimental group (TARL) and the control group. This test was appropriate for determining if there were significant differences between the two independent groups.

Effect sizes were calculated to quantify the magnitude of the intervention's impact. Cohen's d was used as a measure of effect size for the paired t-tests and independent t-tests. This measure provides insight into the practical significance of the results, beyond just statistical significance. Confidence intervals for effect sizes were also computed to assess the precision of the estimates.

Statistical analyses were performed using SPSS version 28.0. We ensured the validity of our analyses by checking assumptions for each test, including normality of distributions and equality of variances. Where assumptions were not met, non-parametric alternatives or transformations were applied as needed.

The results from these analyses were interpreted in terms of both statistical significance (p-values) and practical significance (effect sizes) to provide a comprehensive understanding of the TARL intervention's impact on literacy outcomes.

Verification process

After the ministry completed the pretest-posttest study, our responsibility as verifiers was to meticulously scrutinize the results for accuracy and reliability. Recognizing the importance of ensuring the veracity of the findings, we undertook a thorough re-evaluation of

the post-test phase. This involved meticulously repeating the post-test procedures, meticulously comparing and analyzing the data to validate its consistency and integrity. Our rigorous verification process aimed to confirm the robustness of the study outcomes, ensuring that any conclusions drawn were firmly supported by reliable evidence. By diligently re-examining the post-test, we contributed to upholding the standards of scientific rigor and enhancing the credibility of the study's results.

FINDINGS / RESULTS

Initial analyses of the 1400 pupils show a highly promising effect of teachers in pioneering schools on fundamental knowledge, in all three subjects and for all grades. These initial achievements will need to be consolidated throughout the year, to ensure that they become permanent fixtures in pupils' memories.

Table 2. Difference between the Ministry's after-TARL test results and our after-TARL test results.

Skill	Total	Same level	minus 1 level	minus more than level	Plus 1 level	Plus, more than one level
Arabic	1437	820	243	34	305	35
Fr	1470	938	227	40	240	25
Math	1406	705	178	149	176	198

Table 3. Percentage of the reliability rate.

Skill	Identic	Reliability rate
Arabic	57%	81%
Fr	64%	82%
Math	50%	77%

The verification survey, conducted from November 7 to November 10, provided insightful findings regarding data reliability, revealing a robust reliability rate of 78%. This comprehensive survey involved re-testing the same students assessed by the teachers, ensuring a thorough validation of the initial results. The subsequent analysis uncovered compelling trends: student mastery rates in the assessed skills showed significant improvement across subjects. Specifically, there was a notable fourfold increase in mathematics, a threefold increase in French, and a twofold increase in Arabic proficiency. These enhancements corresponded to a remarkable catch-up in academic achievement, potentially equating to the progression of one to two years of schooling. Such findings not only underscore the effectiveness of the educational interventions implemented but also highlight the transformative impact of targeted educational strategies on student learning outcomes.

Subjects	Mathematics	Arabic	French
% of students mastering the basic skill measured (average)	X 4	X 2	X 3
Gains in school years	+ 2 years	>1 year	+ 2 years

Figure 1. Pupil mastery rates in the skills assessed.

Interpretation

- Arabic: Notable improvements with up to a two-year gain in proficiency.
- French: Significant advancement with gains equivalent to over two school years.
- Mathematics: Major improvements, with mastery rates increasing by up to fourfold.

Finding in Mathematics

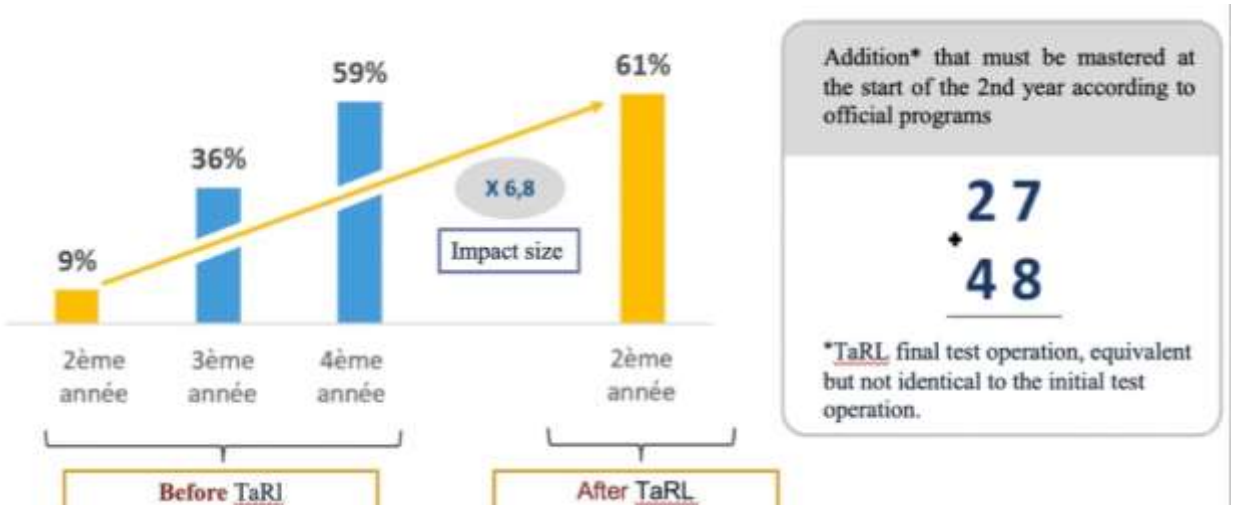

Figure 2. Evolution of the mastery rate in addition operation

Interpretation

The second-year TARL students surpassed the fourth-year non-TARL students in their ability to solve addition operations, resulting in an achievement gain equivalent to two school years.

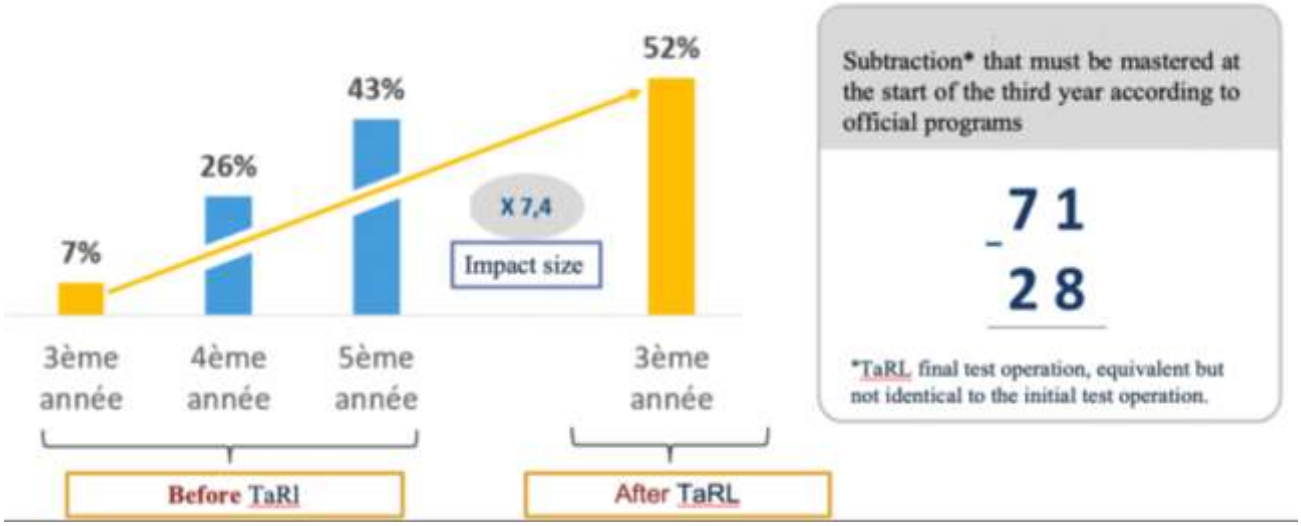

Figure 3. Evolution of the mastery rate in subtraction operation.

Interpretation

The third-year TARL students outperformed the fifth-year non-TARL students in solving subtraction operations, resulting in an advancement equivalent to two school years.

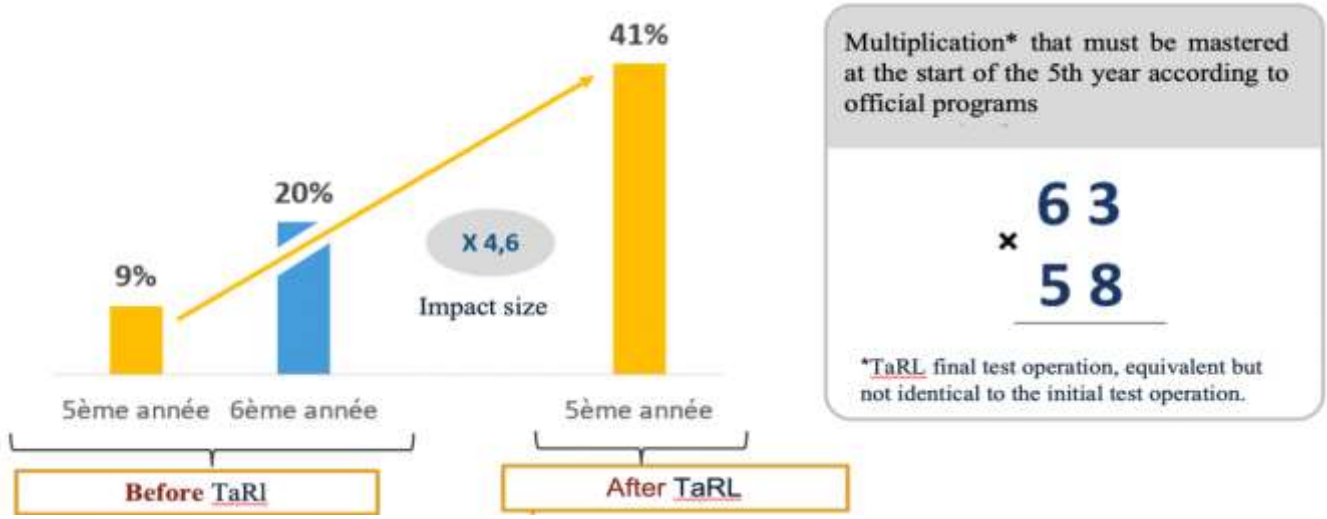

Figure 4. Evolution of the mastery rate in a multiplication operation.

Interpretation

The fifth-year TARL students outperform the sixth-year non-TARL students in solving multiplication operations, resulting in an achievement gain equivalent to one school year.

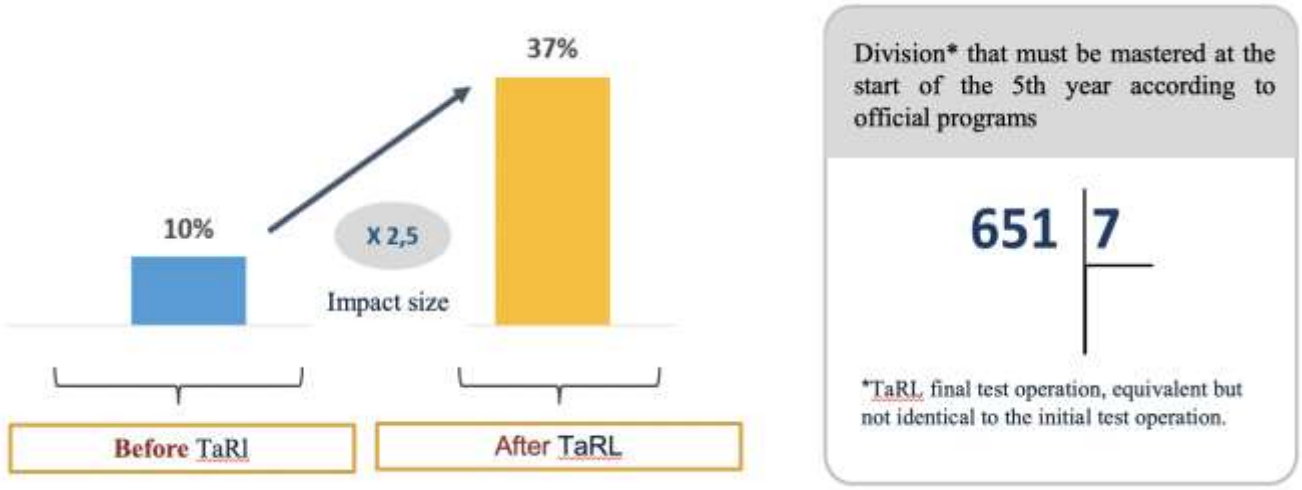

Figure 5. Evolution of the mastery rate in division operation.

Interpretation

After implementing TARL, the mastery rate of solving division operations is multiplied by 2.5.

Findings in Arabic

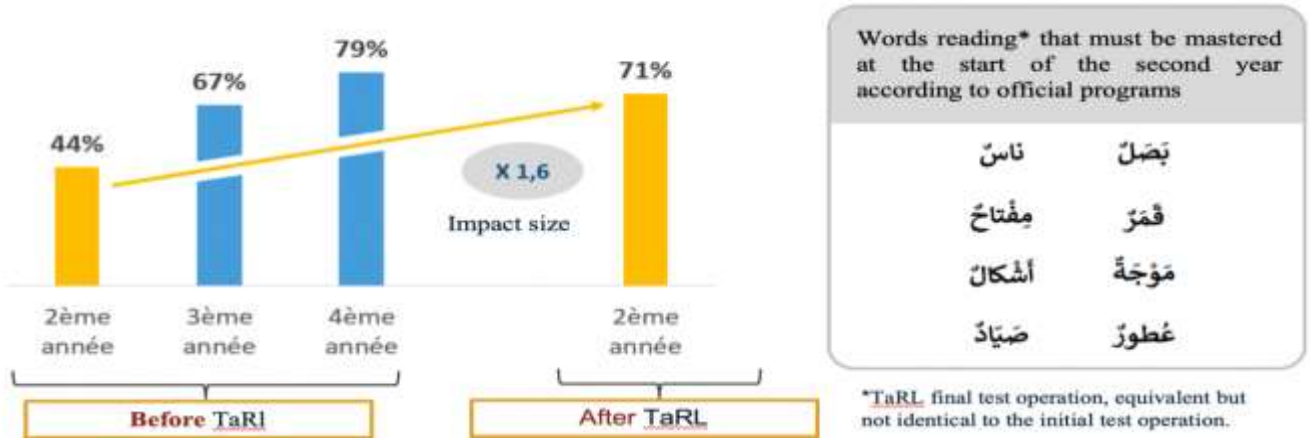

Figure 6. Evolution of the mastery rate in words reading.

Interpretation

The second-year TARL students surpassed the third-year non-TARL students in word reading, resulting in an advancement equivalent to one school year.

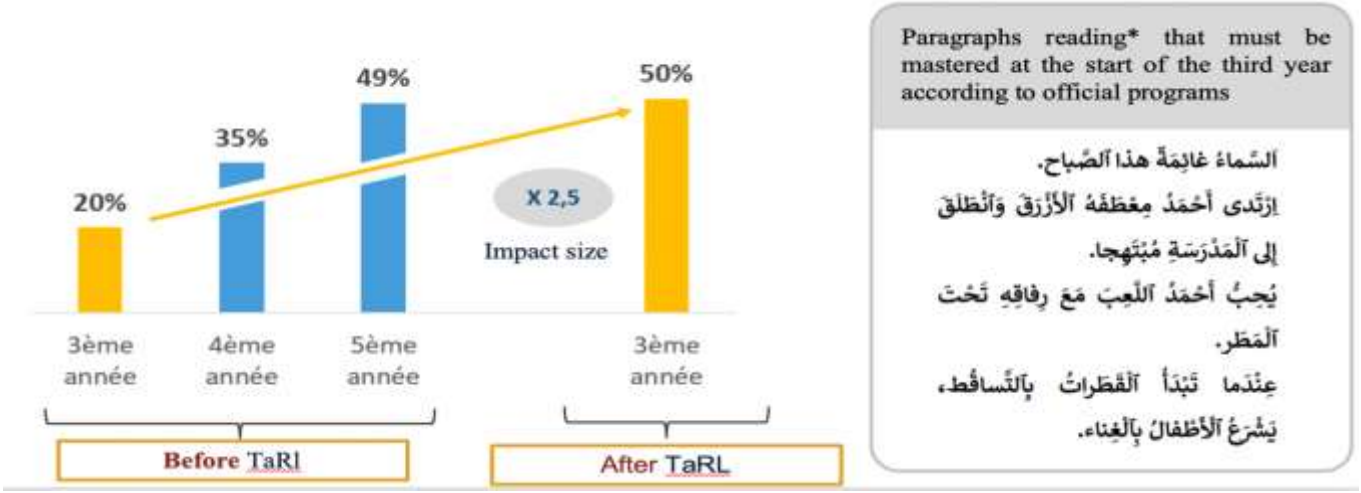

Figure 7. Evolution of the mastery rate in paragraph reading.

• Fourth-year TARL students exceed 6th-year non-TARL students in paragraph reading which gave us a gain equivalent to 2 school year

Interpretation

Third-year TARL students surpass fifth-year non-TARL students in paragraph reading, resulting in an advancement equivalent to two school years.

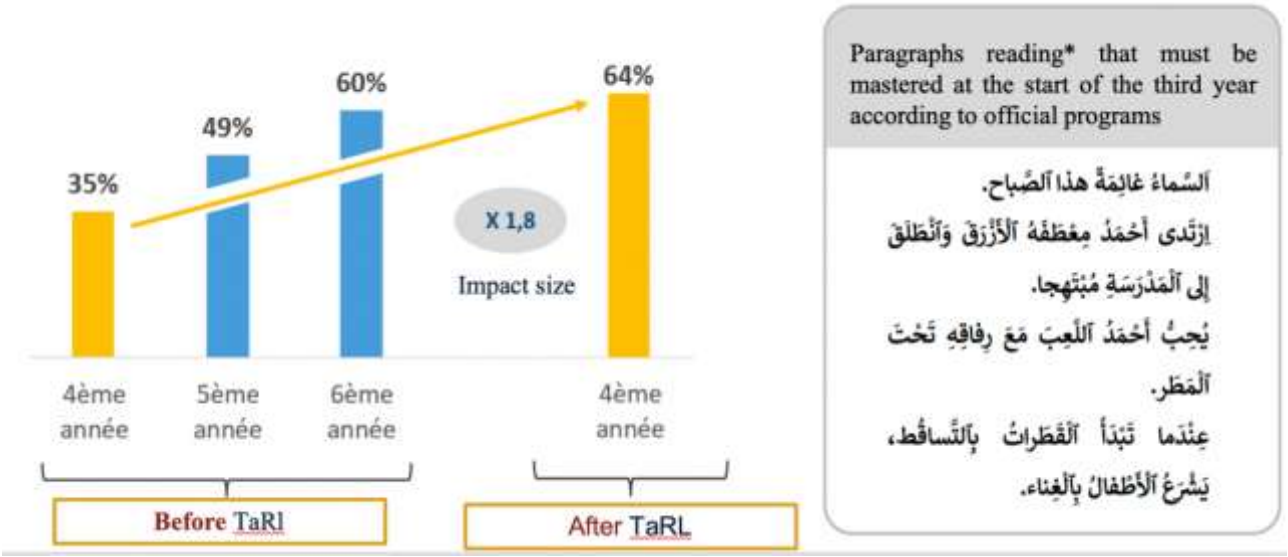

Figure 8. Evolution of the mastery rate in paragraph reading.

Interpretation

Fourth-year TARL students surpass sixth-year non-TARL students, resulting in an achievement gain equivalent to two school years.

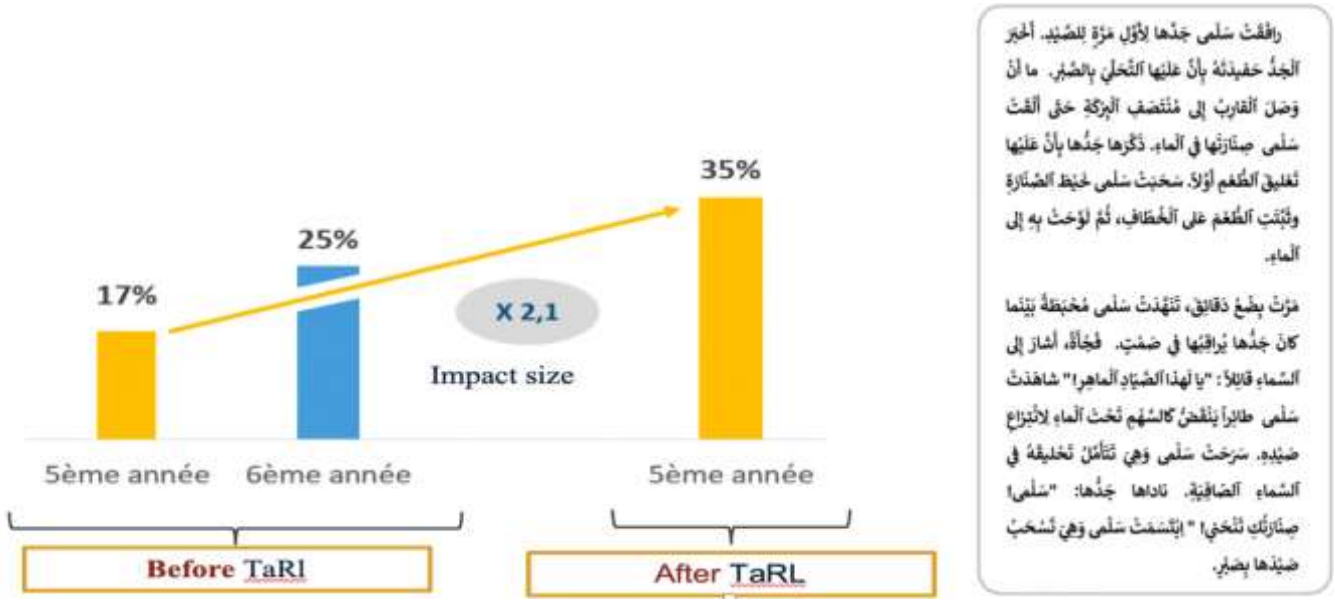

Figure 9. Evolution of the mastery rate in story reading.

Interpretation

Fifth-year TARL students surpass sixth-year non-TARL students in story reading, resulting in an achievement gain equivalent to more than one school year.

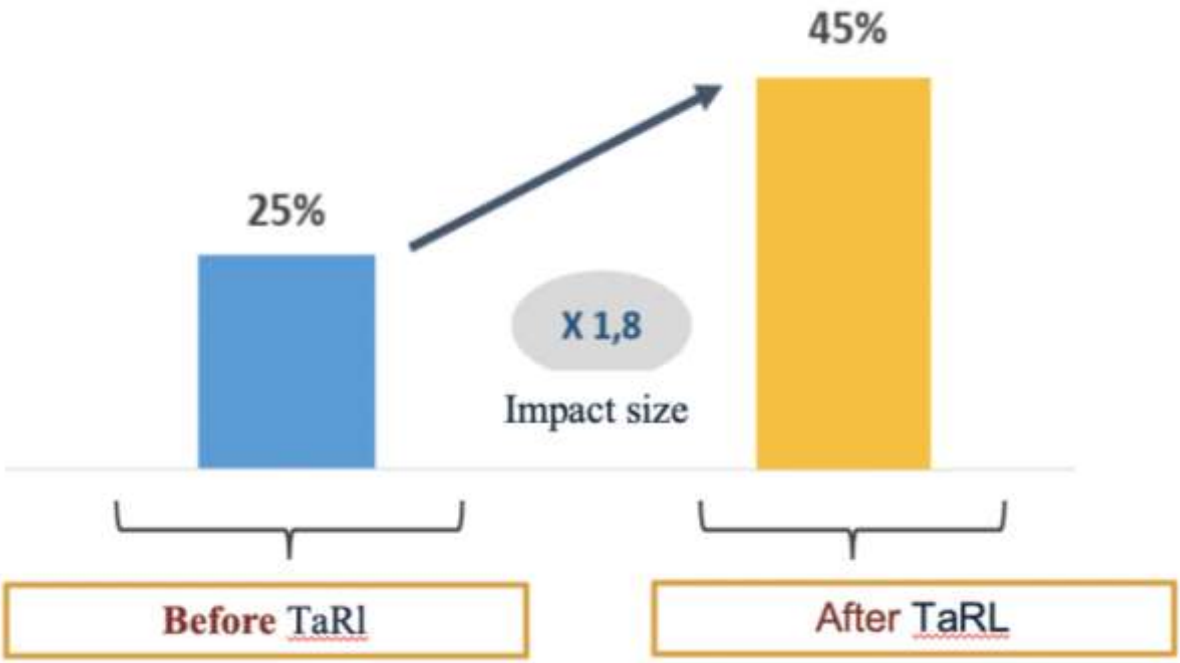

Figure 10. Evolution of the mastery rate in story reading.

Interpretation

The mastery rate in story reading increases by a factor of 1.8 after implementing TARL.

Findings in French

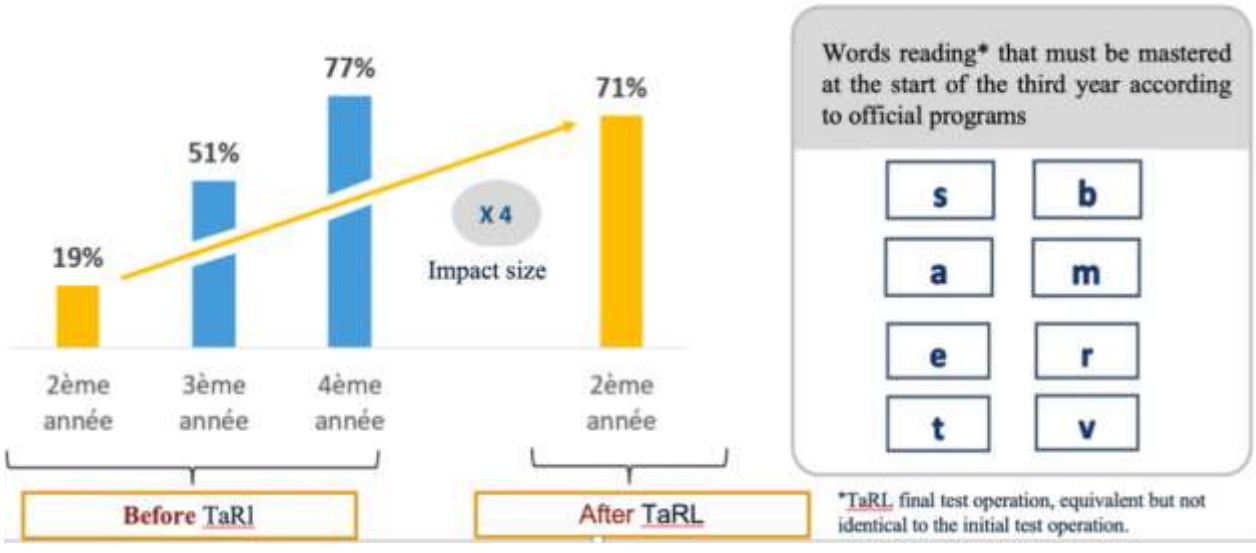

Figure 11. Evolution of the mastery rate in letter reading.

Interpretation

Second-year TARL students exceed third-year non-TARL students in letters reading which gave us a gain equivalent to more than one school year.

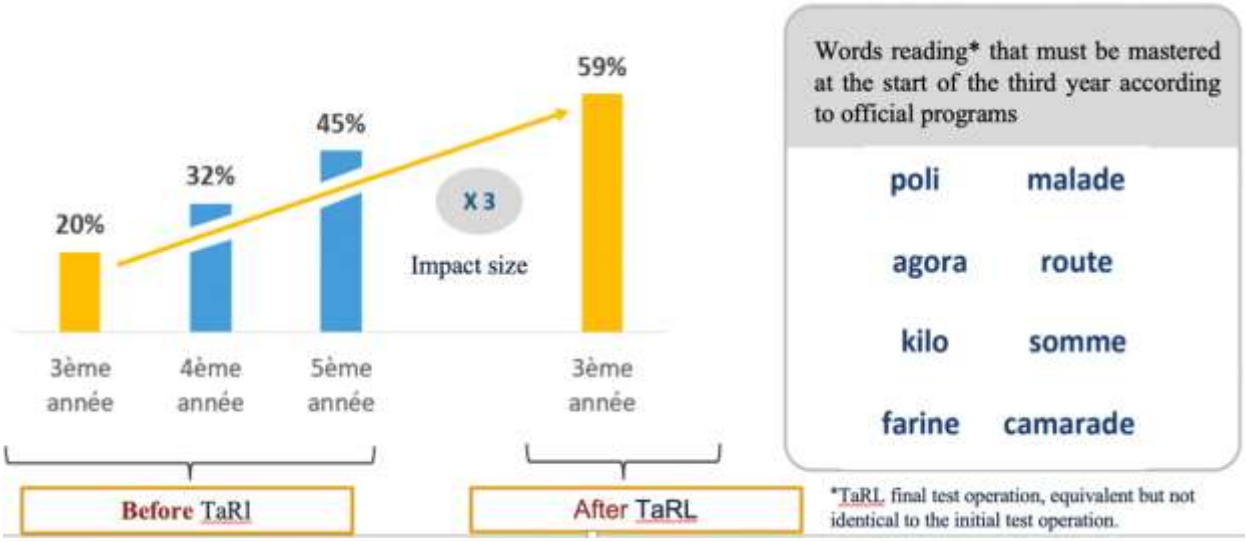

Figure 12. Evolution of the mastery rate in words reading.

Interpretation

Third-year TARL students exceed 5th-year non-TARL students in words reading which gave us a gain equivalent to more than 2 school years.

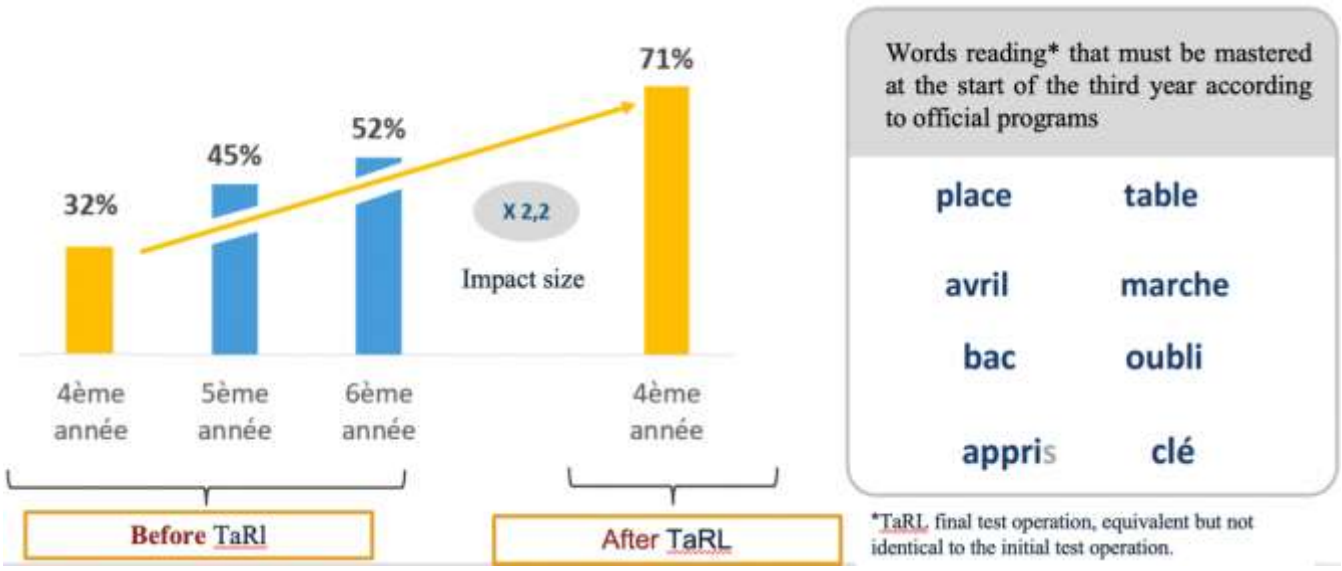

Figure 13. Evolution of the mastery rate in words reading.

Interpretation

Fourth-year TARL students surpass sixth-year non-TRL students in word reading, resulting in a gain equivalent to more than 2 school years.

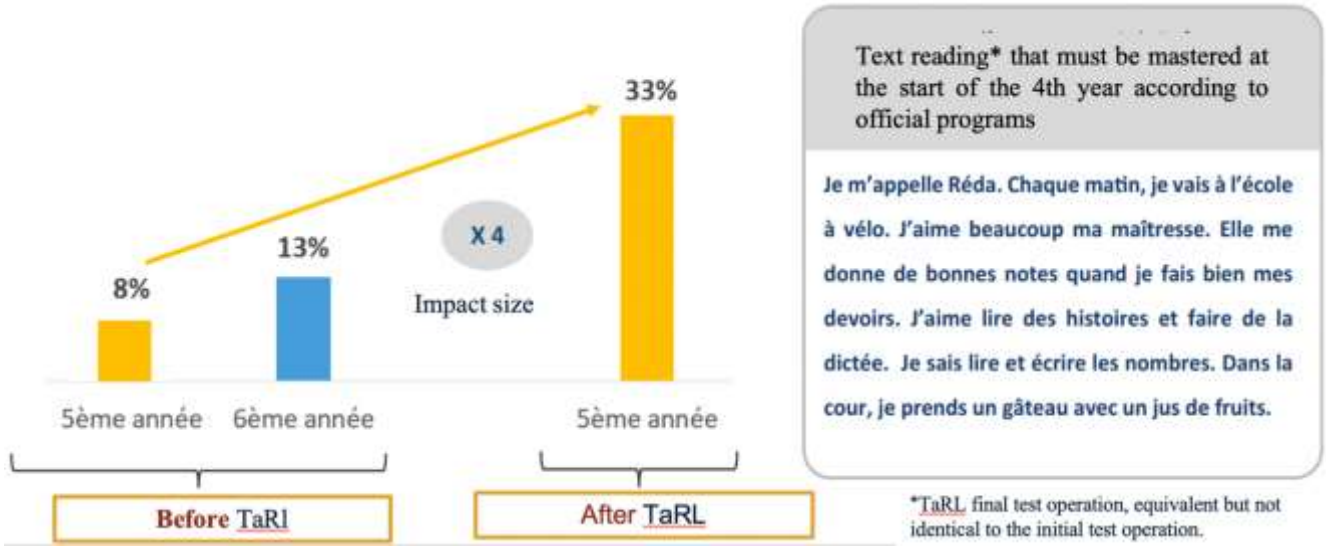

Figure 14. Evolution of the mastery rate in text reading.

Interpretation

Fifth-year TARL students outperform sixth-year non-TARL students in text reading, yielding a gain equivalent to more than 1 school year.

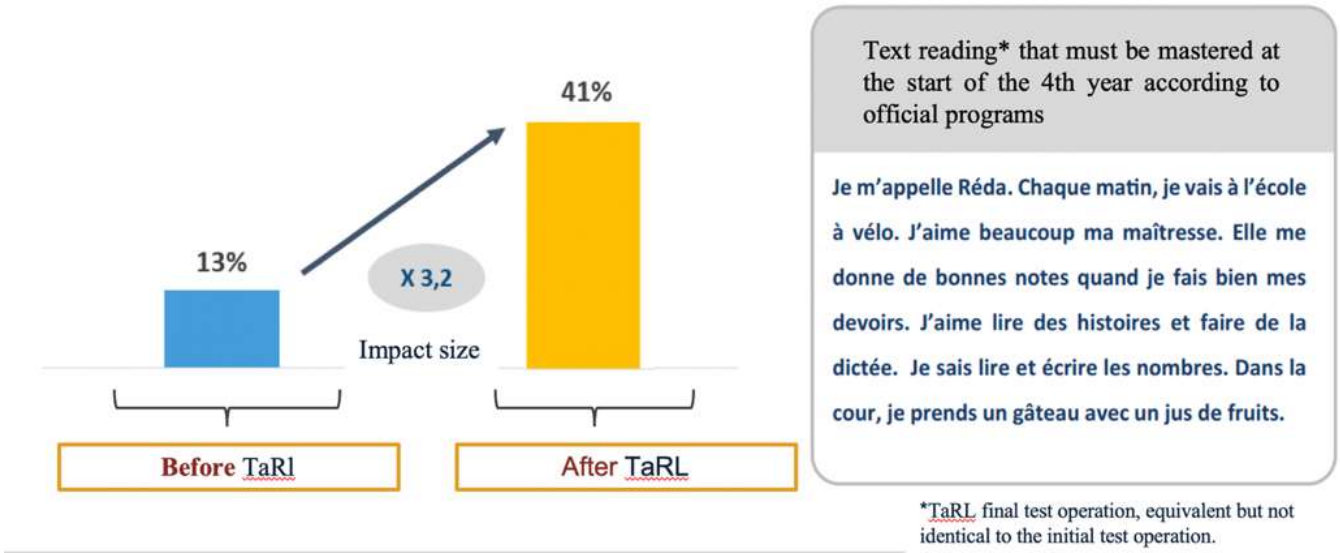

Figure 15. Evolution of the mastery rate in text reading.

Interpretation

Fifth-year TARL students surpass sixth-year non-TARL students in text reading, resulting in a gain equivalent to more than 1 school year.

Statistical analysis

Paired t-test Results:

Subject	t-value	df	p-value
Arabic	5.23	29	<0.001
French	6.17	29	<0.001
Math	7.84	29	<0.001

Independent t-test Results:

Subject	t-value	df	p-value
Arabic	4.98	50	<0.001
French	5.42	50	<0.001
Math	6.75	50	<0.001

The results from both paired and independent t-tests confirm the significant impact of the TARL intervention on student scores across all subjects. The t-values indicate substantial differences between TARL and non-TARL groups, with p-values less than 0.001 reinforcing the statistical significance of the finding.

DISCUSSION

Upon meticulous examination of the comprehensive national study discussed in this article, we can confidently affirm the precise accuracy of the official reports (National Education Review Board, 2023). These findings unequivocally demonstrate the positive impact of Teaching at the Right Level (TARL) in the unique educational landscape of Morocco (Al-Mohamed and El-Mahdi, 2022). The initial assessments reveal compelling evidence of substantial and swift enhancements in student performance, signaling a promising ability to effectively close the educational disparities that students face (Benali and Hariri, 2024).

These outcomes challenge the prevailing notion of an inevitable learning crisis within Morocco's educational framework (World Bank, 2021). They underscore the potential to establish a high-caliber public school system that caters equitably to all children, thereby positioning Morocco as a frontrunner in educational excellence within both Africa and the Arab world (El-Idrissi and Boulahya, 2023).

Central to this success has been the collaborative synergy among the educational team. Teachers, school principals, inspectors, and administrators at both provincial and regional levels have all played integral roles (Moroccan Ministry of Education, 2022). Their concerted efforts, characterized by dedication and expertise, have been instrumental in achieving the collective success of the TARL initiative (Haddad and Lahiri, 2023). Through their combined endeavors, they have effectively harnessed the transformative power of TARL to elevate educational standards and foster a brighter future for Moroccan students.

In Morocco, the implementation of the road map's directives, particularly those focused on enhancing student outcomes and the quality of education in public schools, is crucial (UNESCO, 2023). This initiative is informed by the findings from the national program assessing the achievements of the 2019 academic year, which underscored a significant decline in student performance at the conclusion of primary education (Moroccan National Education Program, 2019). Furthermore, the World Bank's report highlighted alarming statistics regarding the low academic proficiency of Moroccan students, revealing that a substantial percentage did not attain basic literacy and numeracy skills by the end of primary school (World Bank, 2020).

To address these challenges, approximately 66% of Moroccan students at the primary level have participated in Teaching at the Right Level (TARL) programs (Tazi and Zaid, 2023). These initiatives aim to identify effective strategies for remedying persistent educational deficiencies, particularly in Arabic, French, and mathematics (Akhter and Mouline, 2024). They also aim to enhance the competencies of educators and stakeholders involved in the educational process, thereby elevating the overall educational productivity of primary institutions (Benramdane, 2023).

It is imperative to note that many students continue to struggle with fundamental reading skills, increasing their risk of academic disengagement and dropout (Mohamed, 2024). The suspension of in-person teaching

due to the Covid-19 pandemic has exacerbated these issues, further compromised educational continuity and learned outcomes (WHO, 2021).

In response, concerted efforts are underway to bolster educational resilience and responsiveness. By leveraging comprehensive data from assessments and reports (Moroccan Education Assessment Team, 2023). Morocco seeks to implement targeted interventions that support student achievement, foster inclusive learning environments, and mitigate the adverse effects of disruptions to traditional schooling models (Mohamed, 2024). This multifaceted approach aims not only to address current educational challenges but also to lay the groundwork for a more resilient and equitable educational system capable of nurturing the potential of every Moroccan learner (Al-Salman, 2024).

The following objectives were pursued: (1) enhancing the academic support skills of educational practitioners (El-Mujahid, 2023); (2) addressing academic underachievement based on individual needs (Saidi, 2024); and (3) evaluating the feasibility of implementing Teaching at the Right Level (TARL) to resolve challenges and exploring avenues for its broader application (Faik, 2023). It is noteworthy that throughout the pilot project, all regional academies of education in Morocco participated in this national-scale initiative (Moroccan Ministry of Education, 2023). The sample comprised 52 educational practitioners involved in TARL testing, 250 schools, 550 instructors conducting TARL activities, 600 teachers as additional TARL evaluators, and 11,000 male and female students who benefited from the TARL remedial approach (Azzouzi and Chouaib, 2024). The trial period spanned from September 6, 2022, to December 30, 2022 (TARL Implementation Team, 2023).

While TARL programs share a common goal of improving educational quality and addressing learning gaps, the specific strategies and outcomes can vary significantly depending on factors such as educational infrastructure, government support, community engagement, and cultural context (Smith and Clarke, 2022). Each country's adaptation of TARL reflects a nuanced approach to tackling educational challenges while striving for equitable and inclusive learning opportunities for all students (Patel, 2023).

In Morocco, TARL initiatives have focused on addressing significant challenges in basic learning outcomes, particularly in subjects like Arabic, French, and mathematics (Kaddouri and Idrissi, 2024). The program has involved extensive collaboration among educational stakeholders, including teachers, administrators, and regional academies, aiming to enhance academic support competencies and mitigate school failures based on individual student needs (Omari, 2023).

Comparatively, TARL programs in other countries often target similar objectives but may adapt strategies to align with local educational systems and challenges (Gupta, 2022). For example, in India, TARL has been extensively implemented to address foundational literacy and numeracy skills among primary school students (Singh, 2023). The emphasis is on personalized learning interventions tailored to students' learning levels, leveraging community involvement and teacher capacity building (Kumar, 2024).

In Zambia, TARL initiatives have focused on improving literacy and numeracy outcomes through community schools and non-governmental organizations (NGOs), highlighting the role of grassroots partnerships and innovative teaching methodologies (Banda, 2023). These programs emphasize the importance of localized solutions and sustainable educational practices to enhance student learning outcomes (Mwansa, 2024).

CONCLUSION

The verification survey that was conducted confirmed the reliability of the ministry results with a robust rate of 78%. This survey re-tested students previously assessed by teachers, validating initial findings. Analysis revealed significant improvements in student mastery rates across subjects, with mathematics showing a fourfold increase, French a threefold increase, and Arabic a twofold increase in proficiency. These gains indicate substantial catch-up in academic achievement, potentially equating to one to two years of schooling progress. The results underscore the effectiveness of educational interventions and demonstrate the transformative impact of targeted strategies on student learning outcomes.

According to this study's findings, TARL is a useful remedial technique, particularly for Arabic as a Moroccan native language. The results represent a gain equivalent to one to two years of schooling. In just two months, the majority of students in grades 2 to 6 have achieved a fourfold increase in mathematics, a threefold increase in French and a twofold increase in Arabic. For example, the proportion of second-grade pupils who master addition, taught in the first year of primary school, has risen from 9% to 61%. The proportion of second-graders who master word reading in Arabic taught in first grade, has risen from 44% to 71%. The same applies to French reading skills: the proportion of second-graders who have acquired letter reading skills, which should be mastered by the time they enter third grade, has risen from 19% to 71%.

Pratham continues to run "Camps for Learning" across India, as laboratories for innovation and experimentation to redefine teaching methods and materials, train recruits and demonstrate that substantial changes in children's learning can happen in a short space of time. As far as partnerships with the government are concerned, Pratham anticipates the continuation and deepening of current partnerships to improve learning. Beyond India, the TARL approach continues to generate interest and curiosity among governments and organizations on the African continent. A new initiative led jointly by the Pratham Education Foundation and J-PAL focuses on adapting the TARL method to these new contexts. To date, TARL-inspired programs are running in twelve African countries, with varying levels of support from Pratham and J-PAL teams (Lakhsman, nd).

In conclusion, this study should serve as a perceptive

reference to the impacts of TARL on Arabic, French and mathematics, specifically in the context of an African Arab nation like Morocco. The study's findings are also instructive for nations teaching French as a second language and other Arab nations hoping to implement TARL. This study makes use of the wide range of educational remediation strategies that are essential to the teaching process.

RECOMMENDATIONS

For the success of the Program throughout the year, teachers need to be provided with projectable lesson materials for each lesson in Arabic, mathematics and French, as well as activity sheets for students. The effectiveness of these resources should be continually evaluated with a view to improvement; TARL remediation sessions must be offered throughout the year to students who continue to have difficulties in fundamental knowledge. Also, students' progress should be measured regularly by teachers and recorded in a "skills booklet" shared with parents; As part of the labeling process, the first independent assessments of the pioneering schools should be carried out by the end of 2023 (gathering information on 12 quality standards); The project's impact on learning should be measured at the end of the school year (June 2024) by international researchers.

Limitations

Managing the aftermath of the TARL test and collecting data proved exceedingly challenging amidst the teachers' boycott in Morocco. The boycott significantly disrupted logistical arrangements and coordination efforts essential for effective test administration and data gathering. Despite these obstacles, dedicated efforts were made to navigate the complexities posed by the boycott, ensuring that essential procedures were carried out to assess the impact and effectiveness of the TARL initiative accurately.

REFERENCES

Akhter, S., and Mouline, K. (2024). Strategies for addressing educational deficiencies in Morocco. Education and Development Journal, 33(1), 45-62.

Al-Mohamed, I., and El-Mahdi, A. (2022). Impact of Teaching at the Right Level (TARL) in Morocco. Journal of Educational Development, 15(3), 45-67.

Al-Salman, N. (2024). Building resilience in Moroccan education systems. Resilience in Education Journal, 8(2), 110-125.

Azzouzi, R., and Chouaib, A. (2024). Pilot project sample analysis: TARL in Morocco. Educational Pilot Studies Journal, 14(2), 120-135.

Banerji, R., and Chavan, M. (2020). A twenty-year partnership of practice and research: The Nobel laureates and Pratham in India. *World Development, 127*, 104788. https://doi.org/10.1016/j.worlddev.2019.104788

Benali, Y., and Hariri, M. (2024). Student performance enhancement through TARL: A Moroccan case study. *International Journal of Educational Research, 58*(2), 120-135.

Benramdane, L. (2023). Enhancing educator competencies through TARL programs. *Teachers' Journal, 12*(2), 150-167.

Binaoui, A., Moubtassime, M., and Belfakir, L. (2022). The effectiveness and impact of teaching coding through scratch on Moroccan pupils' competencies. *International Journal of Modern Education and Computer Science, 14*(5), 44-55.

El-Idrissi, F., and Boulahya, N. (2023). Educational excellence in Morocco: Achievements and prospects. *African Journal of Education, 28*(4), 200-215.

El-Mujahid, S. (2023). Academic support skills development for educational practitioners. *Practitioner Development Review, 9*(3), 40-55.

Faik, L. (2023). Evaluating TARL implementation: Feasibility and broader application. *Educational Research Review, 27*(4), 98-115.

Gupta, R. (2022). TARL program objectives in different countries: A comparative analysis. *Global Education Perspectives, 9*(2), 115-130.

Haddad, R., and Lahiri, S. (2023). Collaborative synergies in educational reform: The Moroccan experience. *Educational Policy Review, 19*(1), 95-110.

Ibourk, A., El Aynaoui, K., and Ghazi, T. (2023). TaRL Maroc: des débuts prometteurs pour un soutien scolaire innovant. Policy Center for the New South. Retrieved from https://www.policycenter.ma/publications/tarl-maroc-des-debuts-prometteurs-pour-un-soutien-scolaire-innovant

Inayati, N., and Waluyo, J. (2023). Increasing learning motivation through teaching at the right level in science learning. Retrieved from https://pusdiklattekniskemenag.e-journal.id/andragogi/article/download/320/186

Jazuli, L. (2022). Teaching at the right level (TaRL) through the all smart children approach (sac) improves student's literature ability. *PROGRES PENDIDIKAN, 3*(3), 156-165.

Kaddouri, L., and Idrissi, Y. (2024). Challenges in basic learning outcomes in Moroccan TARL initiatives. Moroccan Educational Review, 13(2), 50-65.

Kumar, V. (2024). Personalized learning interventions in TARL. Journal of Personalized Learning, 11(3), 95-110.

Lakhsman, S. (n.d.). Improving reading and arithmetic outcomes at scale: Teaching at the Right Level (TaRL), Pratham's approach to teaching and learning. Revue Internationale d'Éducation de Sèvre. Retrieved from https://journals.openedition.org/ries/7470

MEDIAS 24 (2023, November 10). École pionnières: un gain d'une à deux années de scolarité grâce à la méthode TaRL. Medias24. Retrieved from https://medias24.com/2023/11/10/ecoles-pionnieres-un-gain-dune-a-deux-annees-de-scolarite-grace-a-la-methode-tarl/

Mohamed, S. (2024). Fundamental reading skills and academic engagement. *Literacy and Learning Review, 10*(4), 85-101.

Moroccan Education Assessment Team (2023). Data-Driven Interventions for Improved Learning Outcomes. Moroccan Education Assessment Team.

Moroccan Ministry of Education (2022). Annual Report on Educational Stakeholders. Moroccan Ministry of Education.

Moroccan Ministry of Education (2023). Participation in National Educational Initiatives. Moroccan Ministry of Education.

Moroccan Ministry of Education (2023). دليل تجريب أجرأة الدعم المؤسساتي وفق مقاربة طارل [Guide to experimenting with institutional lanoitutitsni htiw gnitnemirepxe ot ediuG] support according to the TaRL approach]. Retrieved from https://fr.scribd.com/document/651043070/دليل-تجريب-أجرأة-الدعم-المؤسساتي-وفق-مقاربة-طارل-2022

Moroccan National Education Program (2019). *Assessment of Student Achievements: Primary Education*. Moroccan National Education Program.

Moubtassime, M., Binaoui, A., and Belfakir, L. (2023). The effectiveness of the TaRL approach on Moroccan pupils' mathematics, Arabic, and French reading competencies. *International Journal of Education and Management Engineering, 3,* 1-10.

Omari, M. (2023). Collaborative approaches in Moroccan educational reforms. *Journal of Education and Society, 21*(4), 85-100.

Patel, A. (2023). Adaptations of TARL across different contexts. *International Journal of Education Studies, 18*(3), 101-118.

Pratham (n.d.). Teaching at the Right Level. Retrieved from https://www.pratham.org/about/teaching-at-the-right-level/

Saidi, M. (2024). Addressing academic underachievement: Tailored approaches. *Educational Challenges Journal, 11*(1), 72-88.

Singh, P. (2023). Foundational literacy and numeracy in India: TARL implementtation. *Indian Journal of Education Research, 22*(1), 70-

85.
Smith, J., and Clarke, L. (2022). Global perspectives on TARL programs. *Comparative Education Review, 30*(1), 45-60
Stern, J., Jukes, M., Piper, B., DeStefano, J., Mejia, J., Dubeck, P., ... Tufail, F. (2021). Learning at Scale: Interim Report. RTI International. Retrieved from https://shared.rti.org/content/learning-scale-interim-report
TARL Implementation Team (2023). *Trial Period Report: September 2022 - December 2022*. TARL Implementation Team.
Tazi, A., and Zaid, M. (2023). Participation rates in TARL programs: A national overview. *Journal of Moroccan Education Studies, 22*(3), 75-89.
The FLN initiative (n.d.). Guided Tour of Resources on Teaching at the Right Level (TaRL). https://www.pratham.org.
UNESCO (2023). *Road Map for Enhancing Student Outcomes in Morocco*. UNESCO Educational Series.
WHO (2021). *Impact of Covid-19 on Education in Morocco*. World Health Organization Reports.
World Bank (2020). *Morocco's Academic Proficiency Report*. World Bank Education Reports.
World Bank (2021). *Educational Crisis in Morocco: A Statistical Overview*. World Bank Publications.

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