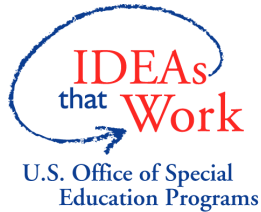




Responsiveness-to-Intervention Symposium

December 4-5, 2003 • Kansas City, Missouri

The National Research Center on Learning Disabilities, a collaborative project of staff at Vanderbilt University and the University of Kansas, sponsored this two-day symposium focusing on responsiveness-to-intervention (RTI) issues.



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How Many Tiers Are Needed for Response to Intervention to Achieve Acceptable Prevention Outcomes?

Sharon Vaughn
University of Texas

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How Many Tiers Are Needed for Response to Intervention to Achieve Acceptable Prevention Outcomes?

It is important to note that all of my comments in this presentation are preliminary and are undergoing revision as new data and information are available. Also, for this presentation, I have not tried to credit or integrate the findings of other researchers whose work has served as a foundation for mine and influenced considerably the work I am describing today. Lastly, when considering response to intervention for this presentation, I have focused solely on the critical academic area of reading. Clearly, issues related to other academic domains (e.g., math) need to be considered.

What Is a Tier of Intervention?

Typically Tiers of Intervention refer to a 3-Tier model in which instruction is layered over time in response to students increasing needs. The 3-Tier Reading Model is designed to meet the instructional needs of all young readers, including those who are slow starters and those who continue to struggle in the early elementary grades. The 3-Tier Reading Model is a prevention model that is aimed at catching students early – *before* they fall significantly behind – and providing the supports they need throughout the first four years of schooling. For students whose response to the first and second tiers of intervention is not adequate, the third tier provides ongoing intervention tailored to meet their specific instructional needs.

What Is Tier One Instruction?

Tier One is designed to provide for the majority of students instructional needs and is comprised of three elements: (a) a research based core reading program, (b) benchmark testing of students to determine instructional needs at least three times per year, and (c) ongoing professional development. A brief summary of the key aspects of Tier One follows:

Focus	For all students in K through 3
Program	Scientific-based reading instruction and curriculum emphasizing the five critical elements of beginning reading
Grouping	Flexible grouping; all grouping formats used
Time	90 minutes per day or more
Assessment	Benchmark assessment at beginning, middle, and end of the academic year
Interventionist	General education teacher
Setting	General education classroom.

What Is Tier Two Intervention?

Tier Two intervention is for those students for whom Tier One instruction is insufficient. Tier Two is for students who are falling behind on benchmarks skills and require additional intervention to achieve grade-level expectations. Tier Two is small-group supplemental instruction in addition to the time

allotted for core reading instruction. Tier Two includes programs, strategies, and procedures designed and employed to *supplement, enhance, and support* Tier One. A brief summary of the key aspects of Tier Two follows:

Focus	For students identified with marked reading difficulties, and whose response to Tier One efforts places them at risk for reading problems
Program	Specialized, scientifically based reading program(s) emphasizing the critical elements of beginning reading
Grouping	Homogeneous small group instruction (1:3, 1:4, or 1:5)
Time	Minimum of 30 minutes per day in small group in addition to 90 minutes of core reading instruction
Assessment	Progress monitoring twice a month on target skill to ensure adequate progress and learning
Interventionist	Personnel determined by the school (e.g., a classroom teacher, a specialized reading teacher, an external interventionist)
Setting	Appropriate setting designated by the school may be conducted within the classroom or outside of the classroom.

When should Tier Two instruction start? Tier Two instruction starts as soon as possible after students have been identified as falling behind grade expectations through benchmark testing.

How long is a round of Tier Two instruction? How long students should remain in Tier Two intervention before either moving to Tier Three Intervention (with or without placement in Special Education) is a question that we have conducted initial research on addressing. In our research, one round of Tier Two instruction lasts 10 to 12 weeks or until the students have had approximately 50 sessions of supplemental intervention. After the first 10- to 12-week round of Tier Two instruction, a decision should be made about the student's instructional needs. The options considered include: (a) exiting Tier Two instruction, (b) another round of Tier Two instruction, (c) entrance to Tier Three instruction for intensive intervention, and/or (d) referral for special services (dyslexia, 504, etc.).

What should Tier Two instruction look like? Tier Two instruction requires: (a) systematic and explicit instruction with modeling, multiple examples, and feedback to students, (b) pacing to match each student's skill level, (c) providing students with multiple opportunities to participate and respond, and (d) providing students with corrective feedback. Tier Two interventionists coordinate with the general education classroom teacher so that Tier Two instruction can be used to pre-teach and review skills.

What Is Tier Three Intervention?

Tier Three intervention is intensive, strategic, supplemental and often considerably longer in duration than the 10 to 20 weeks of supplemental instruction provided in Tier Two. Tier Three is specifically designed and customized small-group reading instruction that is extended beyond the time allocated for Tiers One and Two. The key aspects of Tier Three instruction include:

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Focus	For students with marked difficulties in reading or reading disabilities and who have not responded adequately to Tier one and Tier Two efforts
Program	Sustained, intensive, scientifically based reading program(s) emphasizing the critical elements of reading for students with reading difficulties/disabilities
Grouping	Homogeneous small group instruction (1:3)
Time	Minimum of two 30-minute sessions per day in small group in addition to 90 minutes of core reading instruction. Assuming core reading instruction is still appropriate.
Assessment	Progress monitoring twice a month on target skill to ensure adequate progress and learning
Interventionist	Personnel determined by the school (e.g., a classroom teacher, a specialized reading teacher, an external interventionist)
Setting	Appropriate setting designated by the school.

How are students selected for Tier Three instruction? There are several ways students are selected for Tier Three instruction; (a) if a student has participated in two rounds of Tier Two instruction and has not made sufficient progress even after adjustments to instruction (20 weeks or about 100 supplemental instructional sessions), (b) if

after receiving only one round of Tier Two instruction because the student shows a marked lack of progress and further Tier Two instruction is deemed insufficient to put him/her back on track, and (c) a student who has received previous Tier Three instruction and has exited may re-enter Tier Three as needed.

When do students exit Tier Three? As a general guideline, a student is ready to exit the intervention when he or she has reached benchmark on the targeted skills.

Can students re-enter Tier Three intervention? If an exited student again fails to meet benchmarks, he or she may re-enter Tier Three intervention and exit as needed.

How do Tier Two and Tier Three instruction differ? Tier Two differs from Tier Three in several ways. In order to meet the needs of students whose core instruction and supplemental instruction has not provided sufficient support for them to be reading on level, at a minimum, Tier Three provides: (a) increased time for instruction, (b) even smaller group size for intervention, (c) ongoing adjustment of instruction, and (d) the duration of instruction may be increased to months or even years.

What Research Have We Conducted to Inform the Number of Tiers Needed to Achieve Acceptable Prevention Outcomes?

We are in the beginning stages of a longitudinal research project that is designed to provide evidence pertinent to this question. We are following three cohorts of students from kindergarten through 3rd grade (2nd grade for one of the cohorts) to better understand the extent to which a Three-Tiered system like the one described above is associated with reduced numbers of students: (a) at risk

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for reading problems, (b) referred for special education, and (c) not meeting grade level benchmarks in reading. All of the students in this study represent the entire sample of students from a single school district (6 elementary schools) in close proximity to a large urban area. I will briefly summarize two data sets and their findings.

Study 1: How Do We Know the Relative Value of Tier One and Tier Two Interventions in Kindergarten?

Study 1 was designed to address several questions related to the efficacy of two levels of support for kindergarten teachers and their students at-risk for reading problems. Tier Three was not investigated in kindergarten. The first level of support (Tier One) provided professional development to all kindergarten teachers from six elementary schools (n=23 kindergarten teachers). The Tier Two level of support (47-55 small group intervention sessions; 25-30 minutes per session) was provided to a randomly assigned subgroup of students from these same teachers' classes. A third group of comparable kindergarten students had been obtained from these same teachers' classrooms the previous year (prior to Tier One or Tier Two support) to serve as a historical control group. We addressed the following research questions:

- What are the effects for kindergarten students at-risk for reading problems when their teachers participate in professional development designed to enhance instruction and progress monitoring in reading (Tier One) when compared with outcomes for at-risk students the previous year when teachers were not provided professional development (Historical Control)?

- What are the effects for kindergarten students at-risk for reading problems when their teachers participate in Tier One intervention and their at-risk students are provided approximately 50 sessions (25-30 minutes each) of supplemental instruction (Tier Two) when compared with outcomes for at-risk students the previous year when Tier One and Tier Two intervention were not provided (Historical Control)?
- How do at-risk kindergarten students whose teachers received professional development (Tier One) compare with at-risk kindergarteners whose teachers received professional development and the students received supplemental intervention (Tier One plus Tier Two)?

Teacher Participants. The study was conducted in six Title I elementary schools in one near-urban district in the Southwest. Approximately 23 kindergarten teachers participated over a 2-year period (year 1 data collection only for historical control group students; year 2 Tier One intervention for all teachers and Tier Two intervention for a random selection of at-risk kindergarten students).

Student Participants. Year 1 included all kindergarten students (N=436). This group served as the historical control group from which at risk students were drawn using same criteria as for subsequent years.

Year 2 included all kindergarten students (N=450). This group's teachers participated in Tier One and at-risk students were randomly assigned to either: Tier One and Tier Two provided by research team or Tier One only.

Measures. All students received DIBELS Letter Naming Fluency and DIBELS

Phoneme Segmentation Fluency in January and May of Kindergarten and then in September of 1st grade. DIBELS Nonsense Word Fluency was administered in May of kindergarten and then September of 1st grade.

Woodcock Reading Mastery Test Word Identification and Word Attack were administered in January and May of Kindergarten and September of 1st grade.

Findings. Cohort I consists of those students in the historical control condition. Teachers did not participate in Tier One and no Tier Two was provided by the research team though supplemental instruction and tutoring were provided to low performing students by the school. Cohort II consists of those students whose teachers participated in Tier One and whose at risk students were provided intervention (Tier Two) by the research team. Cohort III consists of those students whose teachers participated in Tier One and whose at risk students were not provided intervention by the research team. All students for all three cohorts were identified as at risk using the same criteria.

Although only preliminary findings are available at the time I am submitting this paper, more complete findings will be available for the presentation in December, 2003. In summary, at risk students from Cohort I fared the worst and those from Cohort II fared the best though students from Cohort II also made significantly more progress than those in Cohort I. Preliminary findings suggest that Tier One intervention alone positively influences outcomes for at risk kindergarteners. Tier One and Tier Two at risk students, overall, made the largest gains.

Study 2: How Do We Know How Much Supplemental Instruction (Tier Two) Is Required for 2ND Grade Students to Respond to Intervention?

Second-grade students at risk for reading problems were assigned to a reading intervention in groups of 1:3 (one adult with three students).

Duration of their reading instruction varied based on students' response to treatment.

This research study was designed to determine: (a) the number of students at-risk for reading problems who would not meet exit criteria after each 10-week segment of supplemental reading instruction, (b) the extent to which students who were provided intervention and responded positively (released from supplemental treatment) would "thrive" without supplemental instruction in the general education classroom, and (c) the expected amount of supplemental intervention needed to distinguish response groups.

Participants. Forty-five 2nd-grade students (25 females, 20 males) were identified as at-risk for reading disabilities using a two-tiered identification process:

- 1) Nominated by teachers in the lowest percentile of their class and having reading problems, and
- 2) Failed 2nd grade TPRI screen.

A priori criteria were established for exit from the intervention and included: (a) obtaining a passing score on the screening portion of the TPRI, (b) median-score performance on the TORF above 55 CWPM on a second-grade level passage, with fewer than five errors; and (c) a score of 50 CWPM on second-grade fluency progress monitoring sessions for at least three consecutive weeks. Students unable to meet these criteria were reassigned to groups of three and continued

receiving supplemental instruction for 10 more weeks.

How was the tutoring conducted? The intervention was provided by 4 trained, experienced tutors. Students were tutored in groups of 3. Instruction was 35 minutes every day and was supplemental to core-reading instruction. Eight intervention validity checks were provided for each tutor.

How many struggling readers exited at each of the three testing periods?

early exit (10 weeks) n = 10: 6 boys, 4 girls;
9 Hispanic/Latino and 1 African-American

mid-term exit (20 weeks) n = 14: 5 boys, 9 girls;
10 Hispanic/Latino, 2 African American, 2 White

late exit (30 weeks) n = 10: 5 boys, 5 girls;
9 Hispanic/Latino, 1 White

no exit (never met criteria) n = 11: 4 boys, 7 girls;
7 Hispanic/Latino, 1 African American, 3 White

What number of students who met exit criteria after 10 and 20 weeks of supplemental reading instruction continued to meet criteria?

- 23 of 24 students who met exit criteria after 10 and 20 weeks continued to make gains without supplemental reading instruction.
- All of the students who exited after 10 weeks of supplemental reading continued to make gains.
-

How many of the students who met exit criteria after 10 and 20 weeks of supplemental reading instruction

made minimal progress in the classroom—defined as averaging 1 correct word per week on the TORF?

- *Early Exit:* All continued to make progress for the next 10 weeks; for the subsequent 10 weeks, only 7 of the 10 continued to make progress
- *Mid Exit:* Only 9 of 15 continued to make progress for the next 10 weeks.
-

Summary of Findings

- All English language learners (ELL) met exit criteria during the intervention
- 75% (n = 9) of ELL continued to thrive without supplemental instruction
- 54% (n = 6) of the males continued to thrive
- 85% (n = 11) of the females continued to thrive
- Students who did not meet exit criteria were distinct from the other 3 groups who eventually met exit criteria with respect to pretest scores on RAN, fluency, and comprehension.
- Our initial work suggests that most students who are identified early as at risk for reading problems (2nd grade and younger) should be provided with at least 20 weeks of intervention prior to determining that they are inadequate responders.

The Core Reading instruction, Tier One, may influence the amount of intervention for Tier Two that is required. For students who have highly effective Tier One instruction, less Tier Two instruction may be necessary prior to determining low response to intervention. However, for students who have little or no effective Tier One instruction, greater amounts of Tier Two instruction may be required to determine response to intervention.

Table 1

General Findings

- More girls than boys were identified as not meeting exit criteria, 4 boys; 7 girls.
- 23 out of 24 students maintained or improved fluency scores after exit.
- However, only 16 of 24 met criteria for “thriving” without intervention (thrive = 1 word or greater per week in fluency).
- All 4 groups made greatest gains in fluency the first 10 weeks.

Language Proficiency and Exit

	English	Spanish
Early	82.3	66.1
Mid	76	87.4
Late	68.6	88.3

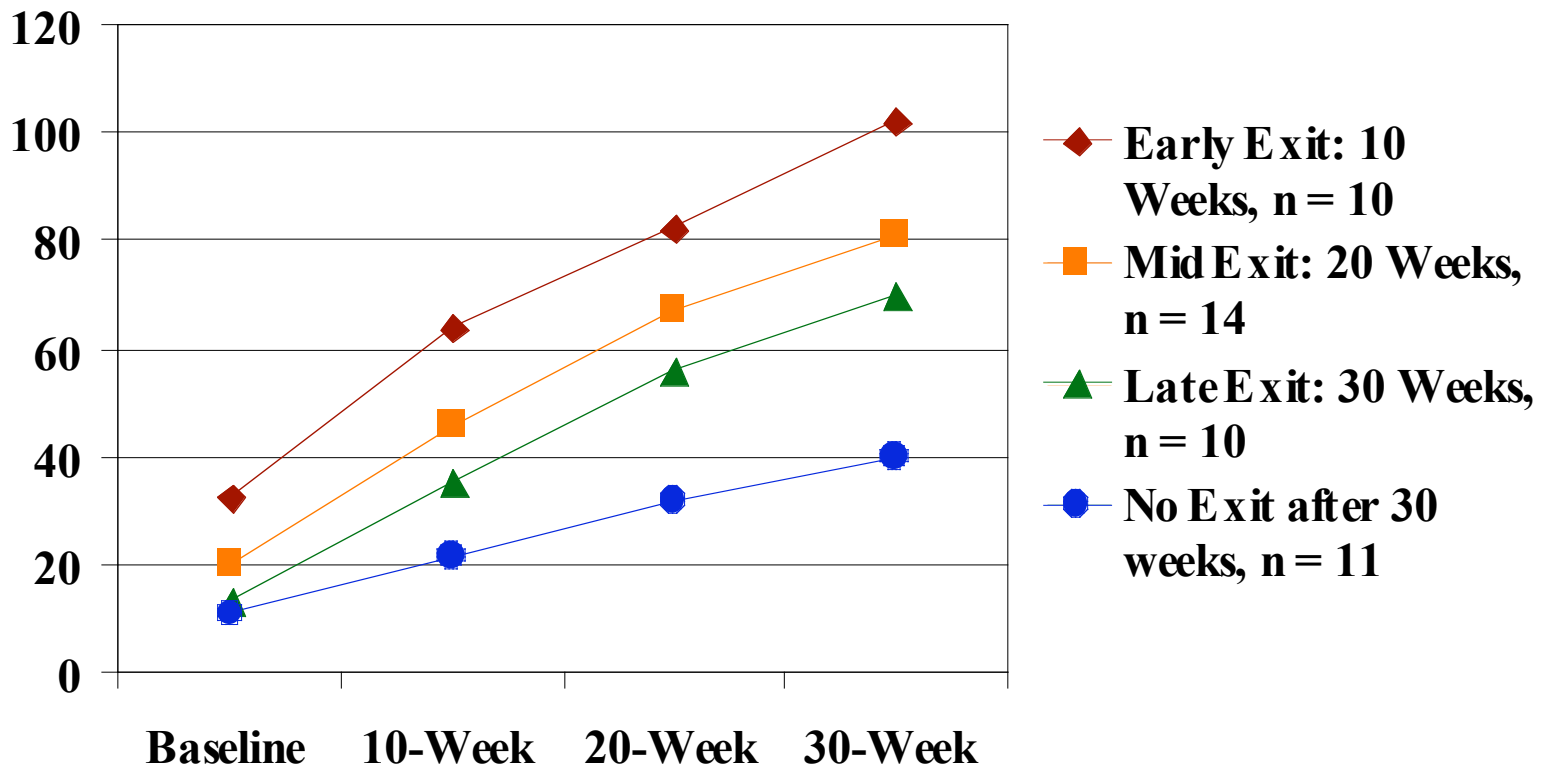
How did students do by gender?

- Exited after 10 weeks
 - 6 males; 4 females
- Exited after 20 weeks
 - 5 males; 9 females
- Exited after 30 weeks
 - 5 males; 5 females
- Did not meet exit criteria

4 males; 7 females

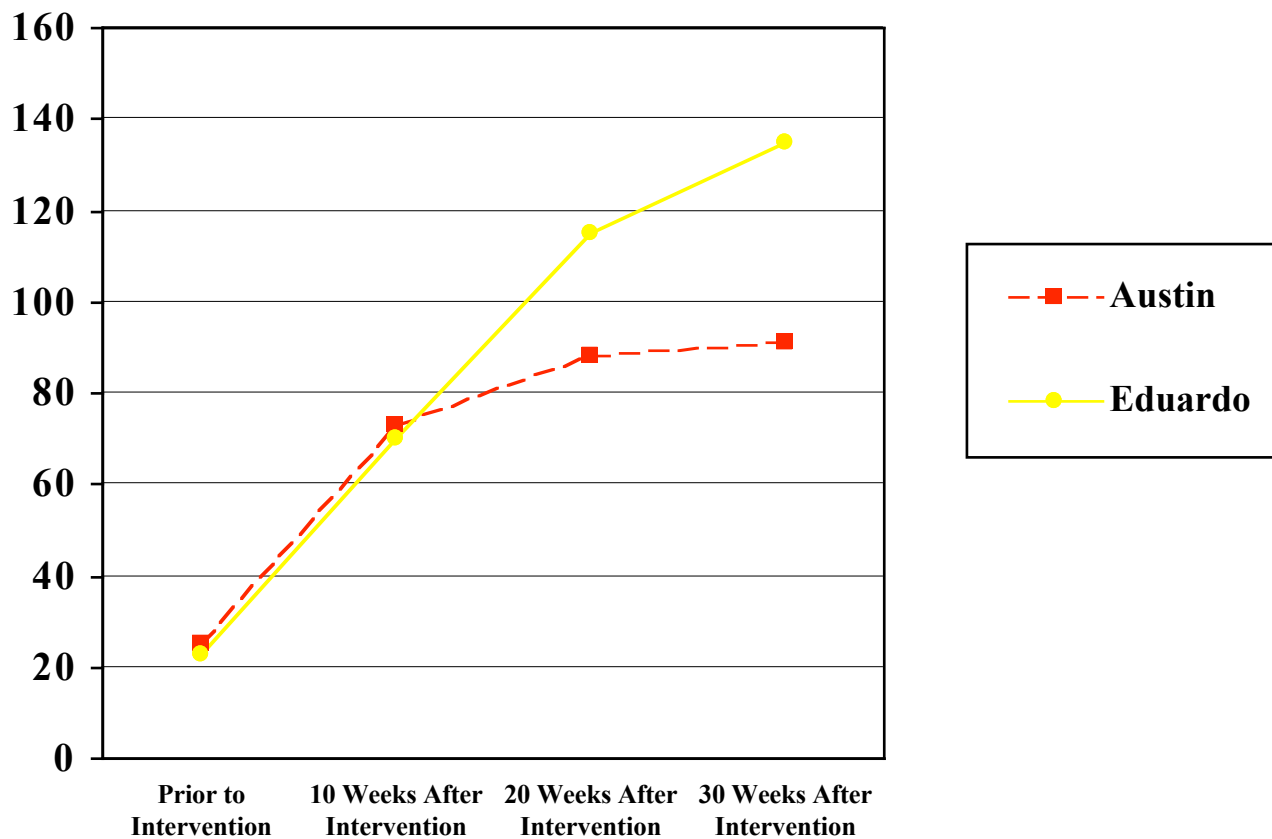
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Figure 1. Means for TORF: Fluency



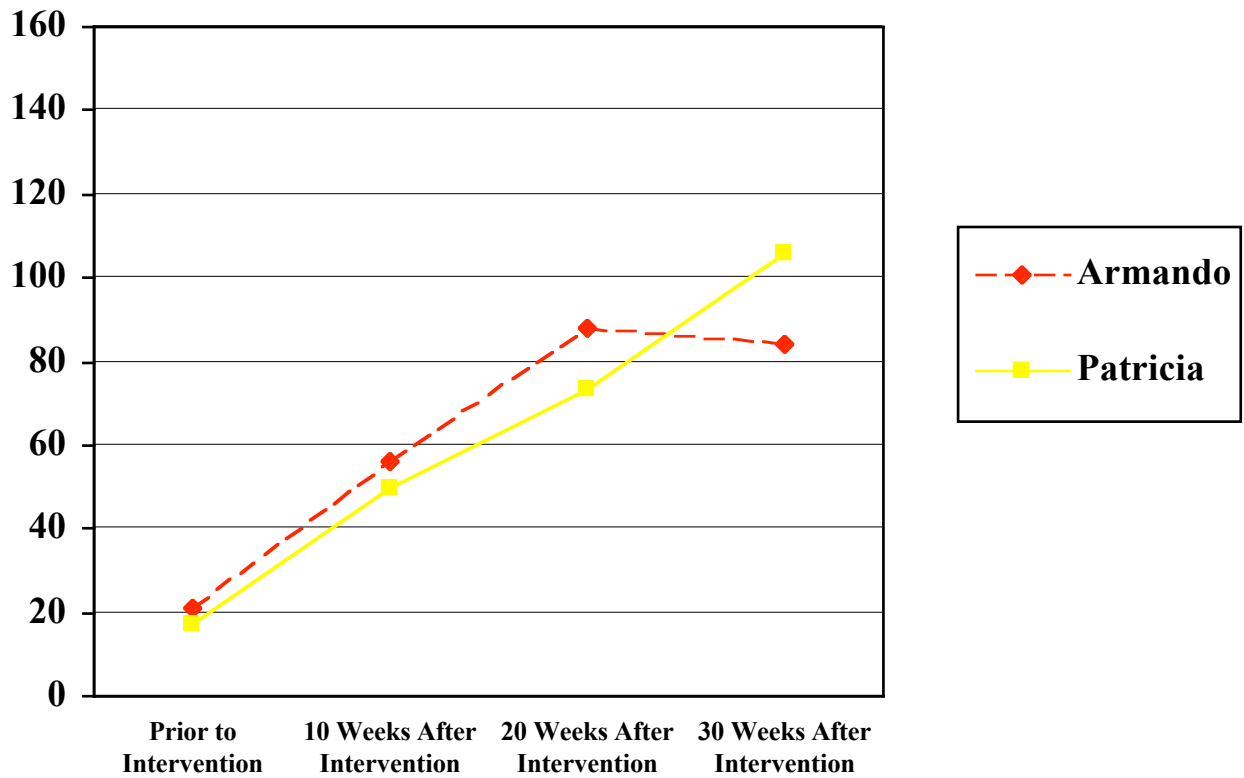
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Figure 2: Austin's and Eduardo's progress on the 2nd grade passages of the TORF over time (ex-
cited after 10 weeks of supplemental instruction).



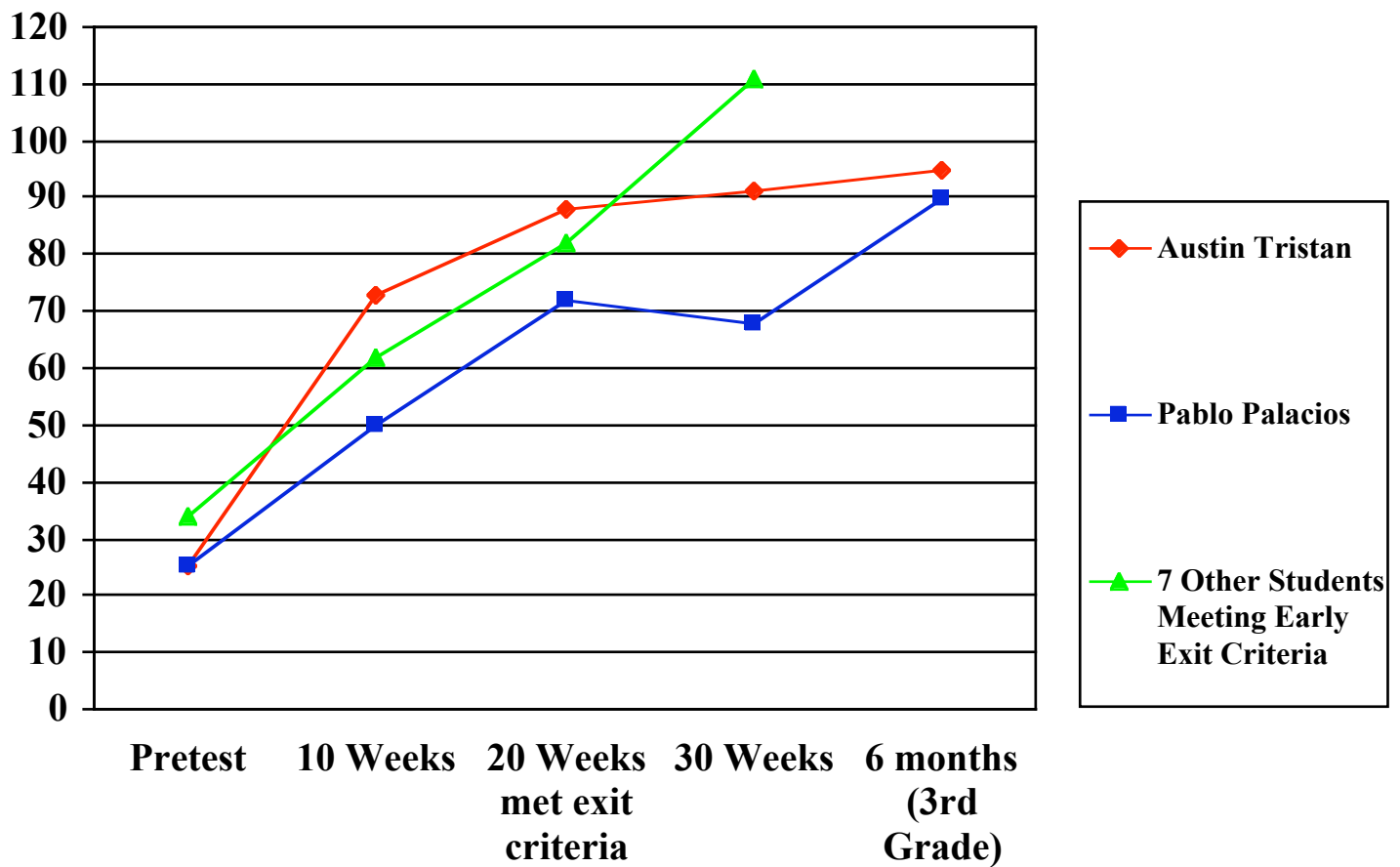
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Figure 3: Armando's and Patricia's progress on the 2nd grade passages of the TORF over time (exited after 20 weeks of supplemental instruction).



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Figure 4: Comparison between two students who failed to thrive in the classroom and those who thrived.



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