Differentiated instruction: Using a case study

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Classrooms have become increasingly diverse. Nevertheless, we have the same goal for all our students: we want them to achieve high standards by providing them with equal and varied opportunities to reach their potential (Lawrence-Brown, 2004).

Research suggests that differentiated instruction is an approach that can benefit students with a wide range of ability levels (Clark, 1997; Neber, Finsterwald, & Urban, 2001; Tomlinson, 1999), as well as learning styles, and cultural and linguistic backgrounds (Convery & Coyle, 1993). It is grounded in cognitive psychology and supported by research on student achievement. The four guiding principles of differentiated instruction are: a focus on essential ideas and skills in content areas, responsiveness to individual student differences, the integration of assessment and instruction, and an ongoing adjustment of content, process and products to meet individual needs (Tieso, 2003; Tomlinson, 1999). Teachers who differentiate instruction believe that all children are unique and have differing learning styles and preferences for learning and self-expression. They also believe that the curriculum is a driving force in what students learn; therefore, in order to address students who have learning problems, teachers must be able to modify, expand, and/or enrich the curriculum with appropriate learning experiences that acknowledge students’ strengths, rather than their deficits in learning (Noble, 2004), and provide students with choice to develop products, and work with processes that will expand their learning. The teachers must be able to adjust the curriculum to maximize learning for all (Anderson, 2007).

A critical part of differentiated instruction is assessment. Assessment is an ongoing process aimed at understanding and improving student learning (Angelo, 1995). Walker (2004) argues that assessment should be viewed as an interactive process and should consider the reader, the text, the reading and writing tasks involved, and the context in which tasks are performed. Similarly, educators acknowledge that assessment must be balanced and thorough and that no one indicator should be used as the sole indicator of achievement (Collins Block, 2003; Butler & McMunn, 2006). Barr, Blachowicz, Bates, Katz, and Kaufman (2007) recommend the use of curriculum-based assessment to guide planning for instruction. This is further reinforced by the IRA/NCTE Joint Task Force on Assessment (2004), which supports the notion that the primary purpose of assessment is to inform planning for teaching and learning. Teachers who differentiate instruction are cognizant of the relationship between assessment and instruction and believe that, when used in concert, learning can occur. In this age of standards, using assessment data to differentiate instruction is essential (Brimijoin, Marquissee & Tomlinson, 2003). A continuous, thorough and balanced assessment of students’ strengths and weaknesses will allow teachers to plan purposeful and meaningful differentiated instruction for all students, particularly those with special needs.

In working with students with special needs we found using a case study to be very informative and effective in identifying students’ areas of strengths and needs in order to assist teachers in planning appropriate instructional procedures to alleviate some demonstrable degree the reading difficulties individual students may be experiencing. A case study uses multiple sources of data and information to answer the questions: Who is the learner? What are his/her areas of strengths and needs? What would be the appropriate differentiated learning opportunities to help him/her succeed? These sources may include demographic information, reasons for referral for testing, student interview data, parent interview data, school history, testing results, and interviewer’s/tester’s insights.
Case study: Gayle

Gayle is a 10-year-old third grade boy who attends his neighborhood public elementary school. He has resided in the town all of his life and attended the district's schools from kindergarten through his present grade.

A public school administrator indicated that Gayle has received additional support services throughout his first and second grades. It was evident to his primary grade teachers that Gayle struggled with reading. Mandatory district reading assessments, teacher-created assessments, and teacher observations revealed that Gayle has been performing below grade level in several reading skill areas. As academic demands began to increase in second grade and Gayle began to experience increased frustration in accessing information from print materials, the Elementary School's Child Study Team referred him for evaluation for a specific learning disability. This process was completed toward the end of Gayle's second grade school year.

A district reading specialist interviewed Gayle about his school experiences, likes, and dislikes. Gayle was very cooperative during the interview and shared his interest in basketball, riding bikes, and computers. He disclosed that he does not enjoy reading although he likes mountain bike magazines that his father reads and Internet sites that have sports and game information. He did not mention using any specific reading strategies when asked about reading the magazines or websites. However, he indicated that he tries to sound out words, skips words, and sometimes asks for help when confronted with unfamiliar words.

The same reading specialist who interviewed Gayle also met with Gayle's mother and father at school. Gayle lives with his mother and father. According to his parents, he is respectful toward others, gets along well with peers, relatives, and neighbors. Gayle's mother communicated her concern about his lack of progress in reading, specifically mentioning decoding, fluency, and comprehension. She shared that Gayle works hard but becomes easily frustrated, tires quickly, and that both her and her husband read with him each night before bed. Gayle's mother further indicated her desire for Gayle to receive additional reading services.

Gayle's referral process for specific learning disability resulted with him being identified for special education services with particular needs in reading for dyslexia and comprehension. He was also retained in first grade. Gayle's teachers and parents agreed with the diagnosis and supported the decision to retain Gayle in first grade.

The reading specialist administered the QRI-IV Miscue Analysis-Oral Reading, Oral Reading Comprehension and Listening Comprehension tests. On the Word Identification test, Gayle scored independent on the first grade level, instructional on the second grade level, and frustrational at the third grade level.

On the Miscue Analysis, he scored instructional at first and second grades, frustrational at third grade. His reading rate was between 30 and 40 words per minute. On the Oral Reading Comprehension he scored at a third grade comprehension level of 67%, which is at the instructional level. On the Listening Comprehension test, his scores were at the independent level for third grade. He answered all inference questions and most text-based questions.

Based on information from Gayle's school history, student interview, and parent interview, we concluded that Gayle is a hard worker, motivated to learn about certain topics, and needs extensive support to process information from print materials. His teachers described him as friendly with peers and adults, has good social skills and is emotionally mature for his age. In addition, he was nothing less than cooperative with the testing demands and appeared to be able to attend to the demands placed on him during the testing with only brief breaks.

As you might have guessed, the range of information we learned about Gayle came from multiple sources integrated into the case study process. Our sources included Gayle's demographic information, reasons for his referral, Gayle's interview data, his parents' interview data, his school history and testing results, and the interviewer/tester's insights.

Figure 1 illustrates the various types of information we learned about Gayle and their corresponding sources of information.

Differentiated instruction for Gayle

As one can see from the case study, decisions on Gayle were made from a variety of sources and presented much information about the child that would be useful in planning for instruction. Knowing that Gayle has a severe reading problem and has received special education services, we began to examine the specialized problems that needed attention. Balancing this information with the principles cited by Tomlinson (1999)—that he needs to focus on essential ideas and skills, that the school must be responsive to individual differences, that assessment and instruction must be integrated, and that there must be on-going adjustment of content, process, and products—presents challenges to the school, but also the opportunity to work with Gayle for optimal learning.

From his interviews we learned that Gayle enjoys basketball, riding bikes and computers. Though he doesn't enjoy reading, he likes magazines and sports Internet sites. Knowing this, we planned to incorporate assignments that followed his interests by looking for Internet sites that are focused on sports, and using magazines such as Sports Illustrated for Kids.

We also learned from the interview with Gayle's mother that he is a hard worker and motivated to learn...
## Figure 1.
Gayle's Information and Corresponding Sources

<table>
<thead>
<tr>
<th>Sources of Information</th>
<th>Types of Information</th>
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</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>10-year-old third grade boy; attends his neighborhood public elementary school; resided in the town all of his life; attended the district's schools from kindergarten through his present grade.</td>
</tr>
<tr>
<td>Reasons for Referral</td>
<td>A public school administrator indicated that Gayle has received additional support services throughout his first and second grades; his primary grade teachers observed that Gayle struggled with reading; mandatory district reading assessments, teacher-created assessments, and teacher observation revealed Gayle was performing below grade level in several reading skill areas; Gayle began to experience increased frustration in accessing information from print materials; the Elementary School's Child Study Team referred him for evaluation for a specific learning disability.</td>
</tr>
<tr>
<td>Student Interview</td>
<td>A district reading specialist interviewed Gayle about his school experiences, likes, and dislikes; Gayle was cooperative throughout the interview; shared his interest in basketball, riding bikes, and computers; he does not enjoy reading although he likes mountain bike magazines that his father reads and Internet sites that have sports and game information; did not indicate using any specific reading strategies when asked about reading the magazines or websites; tries to sound out words, skips words, and sometimes asks for help.</td>
</tr>
<tr>
<td>Parent Interview</td>
<td>Gayle lives with his mother and father; he is respectful toward others, gets along well with peers, relatives, and neighbors; Gayle's mother is concerned about his lack of progress in reading, particularly decoding, fluency, and comprehension; Gayle works hard but becomes easily frustrated, tires quickly; parents read with him each night before bed; Gayle's mother wants more reading services for him.</td>
</tr>
<tr>
<td>School History</td>
<td>Gayle was referred for specific learning disability; he was identified for special education services with particular needs in reading for dyslexia and comprehension; retained in first grade; teachers and parents agreed with the diagnosis and retention in first grade; teachers found Gayle to be friendly with peers and adults, has good social skills, emotionally mature for his age.</td>
</tr>
<tr>
<td>Testing Results</td>
<td>Test administered: QRI-IV Miscue Analysis- Oral Reading, Oral Reading Comprehension and Listening Comprehension tests; in Word Identification test scored independent on the first grade level, instructional on the second grade level, and frustrational at the third grade level; on Miscue Analysis scored instructional at first and second grades, frustrational at third grade; reading rate between 30 and 40 words per minute; on Oral Reading Comprehension scored at third grade comprehension instructional level of 67%; on Listening Comprehension test scored independent level for third grade; answered all inference questions and most text-based questions.</td>
</tr>
<tr>
<td>Interviewer's/Tester's Insights</td>
<td>Gayle is a hard worker, motivated to learn about certain topics, and needs extensive support to process information from print materials; friendly, outgoing, and cooperative; appeared to be able to attend to the demands placed on him during the testing with only brief breaks.</td>
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</tbody>
</table>
about certain topics. We decided to proceed further with the interviews to determine exactly what those topics are and to select materials at his independent and instructional levels. For example, after we gained more insight into his interest in the mountain bike magazines, as well as his father's interest in mountain biking, we were able to select materials on that or related topics appropriate for his reading level that both (a) capitalized on his motivation to learn about this topic, and (b) provided exposure to words related to mountains, geography, or land forms that he might encounter in language arts activities in elementary school.

We also looked to see what types of assistive technology were available for Gayle. Digital technologies could easily be incorporated into the school setting. These devices can help students like Gayle navigate among an array of information as well as help him with particular texts. Through assistive technology, including computer software programs, Gayle was able to learn word and phrase pronunciations and also increased his fluency. For example, screen-reading programs like JAWS made print materials accessible on-line and allowed for passages to be read aloud. This technology was particularly well matched for Gayle since the assessment results indicated that listening comprehension was a relative strength area for him. In addition, he was able to access and read classroom-based materials through the use of the Kurzweil reader. This program allows individual words, phrases, and passages to be highlighted, read aloud, and even has the definitions of individual words read aloud. We worked collaboratively with Gayle's special education teacher and classroom teacher to create word lists that the screen reading programs could present in an auditory format for him. We also considered another potential assistive reading technology for Gayle which was the Lexia Early Reading software. This program allows individual readers to practice a variety of reading skills necessary for literacy.

Gayle was described by his teachers and his parents as an outgoing, friendly boy. Thus we built on these characteristics and had him engaged in different group activities but always keeping in mind what we know about his strengths, interests, and needs. We capitalized on his strengths of outgoing personality and listening comprehension skills by encouraging him to take on some leadership role in group activities that were within his background knowledge and experiences. We noted that with some guidance, he could serve as a resource for the group, especially in areas he enjoys. For instance, by using the assistive technologies identified above, he was capable of collecting background information on assigned topics when these were presented in an auditory format; this also allowed him to contribute aurally to the group.

**Conclusion**

Creating all these opportunities for Gayle to participate in various learning contexts is a good start toward his becoming a successful learner. He continues to progress slowly but surely, and we are confident that through differentiated instruction informed by multiple data sources he will ultimately reach his goal of becoming a good reader.

**References**


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KEYNOTE SPEAKERS

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Topic:
Continuing the New Literacies Journey:
This Year's Research and Promising Practices for Teaching Online Reading Comprehension

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