

**A PROJECT OF HOPE:  
LINDAMOOD-BELL<sup>®</sup>  
CENTER IN A SCHOOL<sup>™</sup> PROJECT  
FINAL EVALUATION REPORT**

MARCH 2005

**Cynthia Burke, Ph.D.**

**Lisbeth Howard**

**Tina Evangelou**



*401 B Street, Suite 800 • San Diego, CA 92101-4231 • (619) 699-1900*

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## **ABSTRACT**

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In September 2002, a literacy program for juvenile male wards was implemented in San Diego County through a partnership between the Juvenile Court, the County Office of Education, the District Attorney's Office, and the Probation Department. Many youth under Probation supervision read below their appropriate grade level and this deficit can have long-lasting effects on their later chances for success. This final evaluation report describes the Lindamood-Bell® Center in a School™ (CIS) project, outlines the research methodology, and presents research findings from the process and impact evaluations that were completed by the San Diego Association of Governments (SANDAG).

As part of the project, 198 adjudicated juvenile males received program services. Many of these youth entered the program below grade level, had a history of truancy problems, and had a negative view toward school. Through the CIS™ project, participants received approximately 89 hours of intensive, specialized, literacy services. Positive outcomes measured through standardized tests and record searches revealed that participants achieved significant gains in their decoding and comprehensive skills, were doing better in school, and were slightly less likely to have contact with the juvenile justice system. Some of the challenges associated with the project related to short commitment times, working with youth who had multiple needs, and lack of aftercare services.

## **ACKNOWLEDGMENTS**

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# TABLE OF CONTENTS

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|   |    |
|---|----|
| Executive Summary.....  | 1  |
| Chapter 1: Introduction and Project Background .....                            | 7  |
| Introduction.....   | 9  |
| Relationship Between Educational Attainment and Justice System Involvement..... | 9  |
| Importance of Addressing Illiteracy .....                                       | 10 |
| Addressing Literacy in San Diego County.....                                    | 11 |
| Report Overview.....  | 12 |
| Chapter 2: Program Description .....  | 13 |
| Introduction.....   | 15 |
| Implementation and Management.....  | 15 |
| Client Eligibility and Identification .....                                     | 18 |
| Staffing.....   | 20 |
| Service Provision .....   | 21 |
| Comparison Group Clients.....   | 22 |
| Program Status .....  | 22 |
| Summary .....   | 23 |
| Chapter 3: Evaluation Methodology .....   | 25 |
| Introduction.....   | 27 |
| Process Evaluation .....  | 27 |
| Impact Evaluation.....  | 29 |
| Summary .....   | 32 |
| Chapter 4: Process Evaluation Results .....                                     | 33 |
| Introduction.....   | 35 |
| Hypothesis 1 Results.....   | 35 |
| Hypothesis 2 Results.....   | 41 |
| Hypothesis 3 Results.....   | 43 |
| Summary .....   | 45 |
| Chapter 5: Impact Evaluation Results.....                                       | 47 |
| Introduction.....   | 49 |
| Hypothesis 4 Results.....   | 49 |
| Summary .....   | 58 |
| Chapter 6: Client Interview .....   | 59 |
| Introduction.....   | 61 |
| Client Interview Overview .....   | 61 |
| Client Stories.....   | 62 |
| Chapter 7: Summary and Conclusions .....  | 69 |
| Summary .....   | 71 |
| Recommendations.....  | 71 |

Appendix: Lindamood-Bell® Program Descriptions .....73

References .....83

## LIST OF FIGURES

---

|             |  |    |
|-------------|--|----|
| Figure 3.1  | Treatment and Comparison Group Ethnicity.....                  | 31 |
| Figure 3.2  | Treatment and Comparison Group Delinquency History.....        | 32 |
| Figure 4.1  | Client Literacy Needs.....                                     | 37 |
| Figure 4.2  | Client Exit Status.....  | 41 |
| Figure 4.3  | Average Number of Treatment Hours Received.....                | 42 |
| Figure 5.1  | Pre/Post Word Attack Test.....                                 | 49 |
| Figure 5.2  | Pre/Post Wide Range Achievement Reading Test.....              | 50 |
| Figure 5.3  | Pre/Post GORT Rate Test.....                                   | 50 |
| Figure 5.4  | Pre/Post Wide Range Achievement Spelling Test.....             | 50 |
| Figure 5.5  | Pre/Post GORT Accuracy Test.....                               | 50 |
| Figure 5.6  | Pre/Post GORT Fluency Test.....                                | 51 |
| Figure 5.7  | Pre/Post GORT Comprehension Test.....                          | 51 |
| Figure 5.8  | Pre/Post Oral Directions Test.....                             | 51 |
| Figure 5.9  | Pre/Post Peabody Picture Vocabulary Test.....                  | 51 |
| Figure 5.10 | Treatment Clients' Change in Grade Point Average.....          | 55 |
| Figure 5.11 | Treatment Clients Suspended from School.....                   | 55 |
| Figure 5.12 | Average Percent of Days Treatment Clients Attended School..... | 56 |
| Figure 5.13 | Juvenile Justice Outcomes during Follow-up.....                | 57 |

## LIST OF TABLES

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|           |   |    |
|-----------|---|----|
| Table 2.1 | Project Milestones.....   | 17 |
| Table 4.1 | Juveniles Screened, Eligible, and Randomized .....                            | 35 |
| Table 4.2 | Treatment and Comparison Group Pre-Test Scores.....                           | 36 |
| Table 4.3 | Clients' Views on Education .....   | 38 |
| Table 4.4 | Clients' Views on Their Abilities at Intake .....                             | 39 |
| Table 4.5 | Type and Amount of Program Services Received .....                            | 43 |
| Table 4.6 | Successful Clients' Opinion of the Program .....                              | 44 |
| Table 4.7 | Successful Clients Who Rated Their Abilities Higher After Participation ..... | 44 |
| Table 5.1 | Percent of Treatment Clients Scoring in the Normal Range.....                 | 52 |
| Table 5.2 | Change in Test Scores by Treatment Client Exit Status.....                    | 53 |
| Table 5.3 | Change in Test Scores by Initial Problem Type .....                           | 53 |
| Table 5.4 | Change in Test Scores by Facility .....                                       | 54 |

## **EXECUTIVE SUMMARY**



# A PROJECT OF HOPE: LINDAMOOD-BELL<sup>®</sup> CENTER IN A SCHOOL<sup>™</sup> PROJECT: MARCH 2005 – SANDAG

## EXECUTIVE SUMMARY

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### INTRODUCTION

In January 2002, the San Diego Juvenile Court, San Diego County Office of Education, San Diego County District Attorney's Office, and the San Diego County Probation Department formed a coalition to address the local literacy crisis among male youth incarcerated in Probation Department rehabilitation facilities. Research indicates that early development of language processing skills is critical for academic success, and local test scores in 2000 showed that on average, adjudicated juvenile males who were entering the San Diego system were reading 3.8 years below their chronological grade level. Previous studies have shown that many youth do not return to school after detention<sup>1</sup> and that providing educational programs to both adults and juveniles during detention is a promising crime prevention strategy.<sup>2</sup>

SANDAG's Criminal Justice Research Division was contracted with the group to conduct a process and impact evaluation for this project. This Executive Summary provides an overview of these results, with a full report also available at [www.sandag.org/cj](http://www.sandag.org/cj) for those who are interested in more detailed findings.

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<sup>1</sup> Gemignani, R. J. (1994). *Juvenile Correctional Education: A Time for Change*. Washington, DC: U. S. Department of Justice.

<sup>2</sup> Sherman et al. (1998). *What Works, What Doesn't, What's Promising*. Washington, DC: National Institute of Justice.

### PROJECT BACKGROUND

To address the reading deficits identified within the San Diego County male juvenile ward population, the coalition chose to partner with the literacy experts of Lindamood-Bell Learning Processes. To help individuals learn, Lindamood-Bell's program strategies include targeting decoding skills through the development of phonemic awareness and symbol imagery (the ability to identify individual sounds and letters and their order within words) and vocabulary and comprehension through concept imagery (the ability to form mental images from the concepts and ideas expressed).

### CLIENT DESCRIPTION

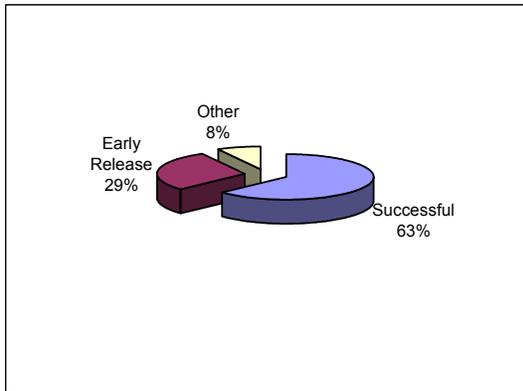
During the course of this study, 1,380 juveniles committed to the Juvenile Ranch Facility (JRF) or to Camp Barrett were screened for program eligibility, with half (50%) scoring above the required minimum on standardized tests, one-third (32%) scoring low enough, but having other factors prohibiting their participation (e.g., commitment length, no space in the program), and 18 percent eligible based on all criteria. Individuals who were eligible between September 2002 and June 2003 were randomized to either receive treatment services (147) or serve in a comparison group (52). This 3:1 randomization was important to ensure that any results after the receipt of program services were due to those services and not some other factors. Between June 2003 and May 2004, all eligible wards received program services (51). On average, clients were about 16 years old, two-thirds were Hispanic, and around half reported

English was their second language. Around three-quarters were wards of the court prior to this instant offense and many had a prior record of poor performance in school.

## PROGRAM SERVICES

As Figure 1 shows, around two-thirds (63%) of clients successfully completed the program (i.e., completed the full course of instruction). Of the remaining individuals, 29 percent were released earlier than expected and 8 percent exited because of another reason (e.g., administrative removal). Exit reasons varied by program site, with Camp Barrett participants more likely to successfully complete the program (88%), compared to those at JRF (50%) (not shown). This difference was related at least in part to the longer commitment time for juveniles at Camp Barrett.

**Figure 1**  
**CLIENT EXIT STATUS**



**TOTAL = 198**

*SOURCE: SANDAG'S Lindamood-Bell® Center in a School™ Executive Summary, March 2005*

On average, clients received 88.7 hours of instruction in the program (*SD* = 28.6) (not shown). However, as Table 1 shows, the program time varied by a number of factors, including whether the client successfully completed the program, decoding or comprehension skills were targeted, and the client was at Camp Barrett or JRF. Camp

Barrett students, who were identified as significantly more likely to have comprehension problems, received more services, which was consistent with the fact that youth at this facility typically had longer commitments.

**Table 1**  
**AVERAGE AMOUNT OF TREATMENT HOURS RECEIVED**

|                        | <b>Number of Hours</b> |
|------------------------|------------------------|
| <b>By Exit Status</b>  |                        |
| Successful             | 99.0                   |
| Not Successful         | 55.6                   |
| <b>By Problem Type</b> |                        |
| Decoding               | 78.3                   |
| Comprehension          | 100.3                  |
| <b>By Facility</b>     |                        |
| Barrett                | 109.3                  |
| JRF                    | 77.4                   |
| <b>TOTAL</b>           | <b>178</b>             |

*SOURCE: SANDAG'S Lindamood-Bell® Center in a School™ Executive Summary, March 2005*

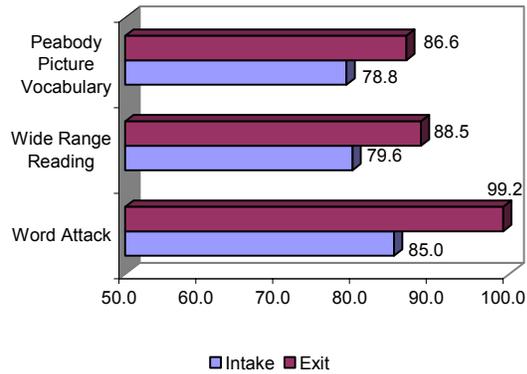
## CHANGE IN TEST SCORES

Regardless of their exit status, clients who received Lindamood-Bell instruction showed significant improvement on test scores from intake to exit.<sup>3</sup> In contrast, none of the average scores for the comparison group changed to a significant degree. Figure 3 presents intake and exit scores for three of the nine tests as an example of the gains that were made. At exit, 38 percent of clients were in the normal range on the Peabody Picture Vocabulary test, 49 percent for the Wide Range Reading test, and 79 percent for the Woodcock Word Attack (compared to 19%, 22%, and 39%, respectively, at intake) (not shown). The normal range for each of these

<sup>3</sup> Detailed information regarding each of these tests is available in the final report.

tests is 90 (25<sup>th</sup> percentile) to 110 (75<sup>th</sup> percentile).

**Figure 3**  
**CHANGE IN TEST SCORES FROM INTAKE TO EXIT**



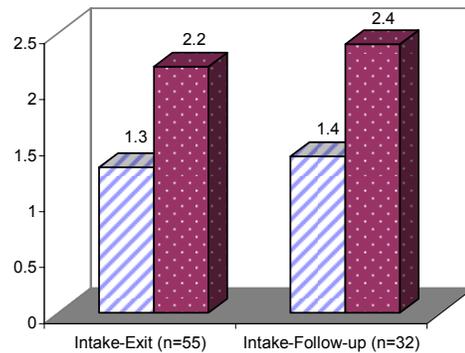
TOTAL = 179

SOURCE: SANDAG'S Lindamood-Bell® Center in a School™ Executive Summary, March 2005

### SCHOOL PERFORMANCE

As Figure 4 shows, treatment clients' average GPA increased significantly from intake to the first semester after program exit, as well as from intake to approximately one year later. While statistical tests were inappropriate for the other variables of interest due to data being available for only a small number of cases, the trend over time was in the same direction (i.e., fewer suspensions and better attendance).

**Figure 4**  
**TREATMENT CLIENTS' CHANGE IN GPA**

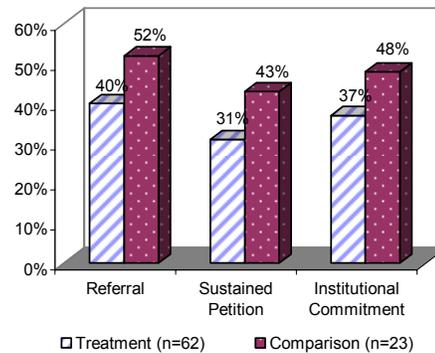


SOURCE: SANDAG'S Lindamood-Bell® Center in a School™ Executive Summary, March 2005

### JUVENILE JUSTICE SYSTEM CONTACT

Information regarding the treatment and comparison groups' contact with the juvenile justice system following release was tracked up to one year later. As Figure 5 shows, the treatment group had less contact with the system during this follow-up period using all three measures (referral to probation, sustained petition, and institutional commitment), but these differences were not significant.

**Figure 5**  
**JUVENILE JUSTICE OUTCOMES DURING FOLLOW-UP**



SOURCE: SANDAG'S Lindamood-Bell® Center in a School™ Executive Summary, March 2005

## **CLIENTS' OPINION OF THE PROGRAM**

As the following set of bullets shows, treatment clients who successfully completed the program were positive about the effect the program had on them and the majority thought that what they learned helped them with other classes, as well as life in general.

- 98 percent said the program helped them with their reading;
- 93 percent would recommend the program to other students;
- 90 percent said the program helped them with their comprehension;
- 89 percent said the program helped with their vocabulary;
- 87 percent reported that things they learned helped with other classes;
- 78 percent said the program helped with their spelling; and
- 75 percent said they use things they learned for life in general.

## **PROGRAM STATUS**

Insufficient funding was the largest obstacle in sustaining the program as implemented. In May 2004, Lindamood-Bell discontinued services at both facilities. As of February 2005, the San Diego County Office of Education has two teachers who were trained by Lindamood-Bell providing services at both sites and the collaborative group continues to seek funding to support existing services and expand services to other Juvenile Court schools.

## **PROGRAM CHALLENGES AND RECOMMENDATIONS**

The following observations are made, based on the results of this process and impact evaluation.

## **Challenges**

- Providing the full course of literacy services was difficult because time in custody was relatively short in length. The requirement to provide treatment to small groups with identical needs also limited the potential sample size.
- Teachers in the classrooms had to deal with other issues the clients presented, including gang rivalries.
- Bringing a new program into an institutional school setting can pose challenges when two different cultures meet.
- Having an aftercare component would have been helpful as the youth transitioned back to the community.
- Securing and maintaining the necessary funding to sustain desired program levels.

## **Recommendations**

- Ensure adequate start-up time and allocate sufficient resources to identify students in need of services. Use appropriate screening process and tools.
- Provide aftercare services in the community.
- If the program is voluntary, conduct marketing and public education campaign to ensure that potential clients are not stigmatized.
- Ensure that staff identified for training makes long-term commitment to pursue certification in the Lindamood-Bell® method so that program fidelity can be maintained. Providing ongoing training and technical support to staff is also critical.

**CHAPTER 1**  
**INTRODUCTION AND PROJECT BACKGROUND**



# **CHAPTER 1**

## **INTRODUCTION AND PROJECT BACKGROUND**

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### **INTRODUCTION**

In 2002, a coalition was formed in San Diego County to address the local literacy crisis among male youth incarcerated in Probation Department rehabilitation facilities. To target this problem, the coalition partnered with the literacy experts of Lindamood-Bell Learning Processes. This first chapter of the final evaluation report prepared by the San Diego Association of Governments (SANDAG), the project evaluators, presents background information regarding the association between educational attainment and justice system involvement and why addressing illiteracy as early as possible is essential for reducing the risk to youth of future justice system involvement. An overview of how the project came to be is also included, along with a description of the report chapters.

### **RELATIONSHIP BETWEEN EDUCATIONAL ATTAINMENT AND JUSTICE SYSTEM INVOLVEMENT**

It has been well-documented that individuals involved in the justice system are less likely to have completed higher education, compared to those with no history of incarceration. For example, around two in five (41%) inmates and one in three (33%) probationers have not completed high school or obtained a GED, compared to 18 percent of the general population. In addition, dropping out of school has been found to be negatively associated with employment (prior to incarceration) and positively associated with recidivism (Harlow, 2003). However, the relationship between educational attainment and an increased propensity for criminal activity is not necessarily a simple one. It is important to note that individuals who recidivate usually have criminal histories that began at an earlier age than non-recidivists, act out in more hostile and non-conformist ways, and are often homeless, unemployed, addicted to alcohol and other drugs, have suffered from abuse in the past, and have mental health issues. While not having the ability to read does not cause one to commit crime, it can be an important part in the equation (Newman, Lewis, and Beverstock, 1993).

The relationship between educational status and justice system involvement affects both adults and juveniles. Keith and McCray (2002) cite several studies (e.g., Dunivant, 1982; Lindsey, Daniels, and Rutledge, 1986; Maguin and Loeber, 1996; Barone, Weissberg, Kaspro, and Voyce, 1995) that have shown that youth with learning disabilities and/or academic failure are more likely to act in delinquent ways and recidivate. They also describe a study conducted by Finn, Stott, and Zarichny (1988) that found that 43 percent of juvenile offenders were reading below grade level, 45 percent had been held back in one or more grades, and 55 percent had been suspended from school. In an earlier study conducted by Project READ, more than one-third of juvenile offenders in the ninth grade read below the fourth grade level (cited in Center on Crime, Communities, and Culture, 1997). More recent statistics suggest that approximately 40 percent of youth held in detention facilities may have some form of learning disability and many juvenile offenders who are 16 or older do not return to school when they are released from detention (Gemignani, 1994). In fact, youth with learning disabilities have been described as the “most overrepresented population in corrections,” and are at increased risk for committing delinquent acts, which may be related to

tendencies toward hyperactivity, lack of emotional control, impulsivity, and poor memory (Rutherford, Griller-Clark, and Anderson, 2001).

Because ethnic minorities are often disproportionately represented among those with lower levels of income, they are at increased risk for not completing school, as well as for being incarcerated. For example, data from the National Adult Literacy Survey (U.S. Department of Education, 1994) showed that when an individual's sex, race/ethnicity, age, and level of education were held constant, the prison population did not differ significantly in reading capabilities, compared to the general household population, suggesting that the profound differences that do exist can be attributed to differences in demographic composition and educational attainment. A report from the National Center for Educational Statistics (Livingston and Wirt, 2004) found that while 13 percent of all persons age 16 to 24, across racial/ethnic backgrounds, were neither enrolled in school nor working, the percent of White and Asian/Pacific Islander youth who were not enrolled or working was lower than the percent for Hispanic, Black, and American Indian youth. The same report also found that high school drop-out rates for low-income families was more than double that of middle-income and high-income families (11%, 5%, and 2%, respectively). The Abell Foundation (2003) released a report advocating for these youth, pointing out that early reading difficulties often go undiagnosed – a problem compounded because of a lack of teacher training, low teacher expectations, lack of funding, and low-income parents' lack of advocacy know-how and clout. Keith and McCray (2002) also note that Hispanic and other minority youth are at even greater risk for delinquency and school failure, due to their lower than average socioeconomic status, as well as having language barriers. Specifically, the authors note that "some adolescents, especially ethnically diverse adolescents, whose social, adaptive and academic needs are often ignored, misdiagnosed, or maltreated, may be learning and acting out delinquency in a place called school" (p. 693). The same authors go on to suggest that schools can play "a key role in preventing or exacerbating the likelihood that students will come into contact with the juvenile justice system" (p. 693).

## **THE IMPORTANCE OF ADDRESSING ILLITERACY**

Literacy is defined as the ability to read accurately and fluently what one can talk about and understand (Brunner, 1993a). Studies on the level of adult literacy in the U.S. have shown that adults with fewer years of education are more likely to have lower literacy levels than those who completed high school or continued their education beyond 12<sup>th</sup> grade (National Center for Family Literacy, 2003). Determining the actual proportion of adult and juvenile offenders who have issues related to literacy is difficult due in part to different definitions of "literate" and different subpopulations of offenders (e.g., state inmates, federal inmates, individuals on probation). Because of these differences, illiteracy estimates range as high as 75 percent (Herrick, 1991, cited in Tewksbury & Vito, 1994) and estimates of the number of inmates who have not completed high school are as high as 70 percent (Center on Crime, Communities, and Culture, 1997). Other comparisons of adults involved in the criminal justice system versus the general population show that the former are more likely to be completely illiterate (19% compared to 4%), as well as functionally illiterate (40% compared to 21%) (U.S. Department of Education, 1992). The number of incarcerated youth with disabilities (including emotional or behavioral disorders, attention deficit hyperactivity disorder, learning disabilities, and mild mental retardation) is also larger than the general population (30% to 50%, compared to 10%) (Casey and Keilitz, 1990).

As others have previously noted (e.g., Smith & Wilhelm, 2004), many young adults may not address their literacy deficiencies because they prefer to partake in activities they excel at, and if literacy does not come easily, it is easier to treat it as a skill that is not important. In one study, when inmates who had failed to complete high school were asked the most important reason for dropping out, the most common answer was behavior or academic problems or lost interest (35%) (Harlow, 2003). Statistics from the New York City Department of Education (discussed in Roy-Stevens, 2004) revealed that less than one in three high school age offenders returned to school upon release from detention.

A consistent finding in the criminal justice field is that quality education is one of the most effective forms of crime prevention (Center on Crime, Communities, and Culture, 1997). Previous studies have also shown that providing educational programs to inmates makes good fiscal sense, with the average cost of incarceration far exceeding the cost of providing literacy training (Center on Crime, Communities, and Culture, 1997). Supporting this, recent research has shown that juvenile recidivism rates are significantly lowered when detainees were involved in quality reading-instruction programs (Brunner, 1993b) and a meta-analysis recently completed by Chappel (2004) found a positive correlation (+.31) between post-secondary correctional education and recidivism reduction. In their thorough review of what works to prevent crime, Sherman and colleagues (1998) described prison-based vocational education programs as a promising strategy. Other studies have shown that addressing reading comprehension with elementary students, even for short amounts of time, can have significant impact on the literacy skills of these youth (e.g., Lane and Menzies, 2002). Researchers who have worked with youth in the general population have also found that efforts to increase academic performance often have collateral positive effects, such as a decrease in antisocial behavior (e.g., Lane, Wehby, Menzies, Gregg, Doukas, and Munton, 2002). Others have noted that self esteem increases as one's success in educational activities increases, and that self-esteem is a basic component of a law-abiding citizen's lifestyle (Tewksbury and Vito, 1994).

Even though research has continued to demonstrate the positive effects associated with providing educational programs to inmates, it remains the case that many detained individuals, both adults and juveniles, do not receive services that could address underlying factors associated with criminal lifestyles and which make reentry into the community more successful. For example, McKean and Ransford (2004) have recently noted that in 1997, only about 35 percent of inmates participated in educational programs and only 27 percent received any type of vocational training. According to The National Center on Education, Disability, and Juvenile Justice (2002), problems associated with implementing educational programs in juvenile facilities include characteristics of the youth, such as substance abuse, that present difficulties in educational programming, as well as institutional setting factors such as overcrowding, insufficient fiscal resources, and inadequate transition and aftercare services.

## **ADDRESSING LITERACY IN SAN DIEGO COUNTY**

In 2002, the San Diego Juvenile Court, the Juvenile Court and Community Schools of the San Diego County Office of Education, San Diego County District Attorney's Office, and San Diego County Probation Department formed a coalition to address the local literacy crisis among male youth incarcerated in Probation Department rehabilitation facilities. Local test scores in 2000 showed that,

on average, adjudicated juvenile males who were entering the San Diego system were reading 3.8 years below their chronological grade level. This statistic was especially alarming since these children were some of the youngest within the juvenile justice system, ranging in age from 13 to 16½ years old. The project partners noted that it was likely that as these children grew older, the gap between their reading grade level and their actual chronological grade level would grow even larger.

To address the reading deficits identified within this population, the coalition chose to partner with the literacy experts of Lindamood-Bell Learning Processes. According to Lindamood-Bell, current reading instruction methods, regardless of whether they are phonics or whole language based, are not successful with all students because they do “not recognize and address individual differences in sensory-cognitive functions that are basic to independence and full competence in literary skills” (Lindamood, Bell, and Lindamood, 1997). To help individuals learn these sensory-cognitive functions, program strategies include targeting decoding skills through the development of phonemic awareness and symbol imagery (the ability to identify individual sounds and letters and their order within words) and vocabulary and comprehension through concept imagery (the ability to form mental images from the concepts and ideas expressed).

Lindamood-Bell was selected to provide literacy training because of the positive outcomes that had been realized in Colorado’s Pueblo School District 60 and the fact the program is equally effective with English as a second language (ESL) students. In addition, the program had some previous successes working with other adjudicated youth in San Diego. In one case, a 16-year-old appeared in court who had not been in school for over one year and whose reading skills were five grade levels behind where he should have been. The Court enrolled the youth in a Lindamood-Bell® reading instructional clinic where he attended intensive reading sessions four hours per day for 12 weeks. At the end of this time, the youth’s reading ability had increased by five grade levels and he reenrolled in community school. In their 2003 report, the San Diego County Grand Jury commended Judge James R. Milliken, the Presiding Judge of the Juvenile Court at the time, for providing the impetus for this program and the District Attorney’s Office and the San Diego County Office of Education for their involvement, financial assistance, and support.

San Diego Association of Governments’ (SANDAG) research staff was chosen to work with the program partners and conduct the two-year process and impact evaluations. SANDAG’s Criminal Justice Research Division has served as the Clearinghouse for public safety statistics for the region and conducted program evaluations since 1977.

## **REPORT OVERVIEW**

This report continues with Chapter 2, which provides a more thorough description of the CIS™ program, and Chapter 3, which describes the methodology used to evaluate this program. The results of the process evaluation follow in Chapter 4 and the impact evaluation results are presented in Chapter 5. Chapter 6 includes qualitative information collected from interviews with 21 program clients, and the report concludes with a summary and recommendations in Chapter 7.

## **CHAPTER 2**

### **PROGRAM DESCRIPTION**



## **CHAPTER 2**

### **PROGRAM DESCRIPTION**

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#### **INTRODUCTION**

The Lindamood-Bell® Center in a School™ (CIS™) project involved the provision of intensive supplemental education sessions at two juvenile male rehabilitation facilities in San Diego County. The following chapter provides an overview of the program, including how clients were identified, the nature of the services provided, as well as the level of coordination on this project among key partners.

#### **IMPLEMENTATION AND MANAGEMENT**

The program was implemented by a collaborative team composed of staff members from county agencies and reading experts of Lindamood-Bell Learning Processes. As the San Diego County Juvenile Court became increasingly aware of the learning deficiencies in the population of adjudicated youth, its members sought funds to address the issue. The San Diego County Office of Education became the lead agency and grant applicant for the program. The San Diego District Attorney's Office, along with Price Charities and the California Endowment provided the initial funding for the program. The team contracted with SANDAG to conduct both a process and impact evaluation.

The literacy experts of Lindamood-Bell were employed to implement their intensive literacy training program in two Probation rehabilitation camps. Staff members from Lindamood-Bell, some of whose time was provided through in-kind contributions, instructed student groups at each camp. They also provided data to SANDAG on an on-going basis for compilation for the program evaluation.

The Probation Department aided in program development and accommodated the new program within their institutions' schedules. Probation staff members at the rehabilitation camps worked closely with the staff of Lindamood-Bell to coordinate the daily workings of the program, provide student data, ensure that students got to and from program classrooms, provide student referrals, and assisted Lindamood-Bell with any other student issues that arose.

The County Office of Education Juvenile Court and Community Schools (JCCS) played an important role in identifying eligible students. One staff member was designated to conduct testing for potential program clients at Juvenile Hall and Camp Barrett. This staff member then provided test results to Lindamood-Bell for student screening purposes. Staff members from the County Office of Education also provided valuable school data for the research evaluation.

With the intent of expanding the program, the team also spent time promoting community interest in the issue of the literacy levels of adjudicated youth. As part of this effort, team members provided presentations of the program to the Juvenile Justice Coordinating Council, the Juvenile Justice Commission, the Price-Weingardt Foundation, the San Diego County Board of Education, and a group of judges and attorneys from Mexico.

Because of the number of parties involved in implementation, meeting and communicating on a regular basis was essential for program coordination. To ensure an adequate flow of information, team members met on a bi-monthly or monthly basis between February 2002 and March 2004. Prior to September 2002, meetings focused on program implementation including staffing, facility needs, funding, participant selection criteria, and the research model. Once the program was running, monthly meeting discussion frequently focused on financial support for the program, data status, the implementation of the Measures of Academic Progress (MAP) as a new assessment tool, the number of students in the program, program successes, and any obstacles that Lindamood-Bell or any other partners were experiencing.

Feedback from program staff indicated that integrating an independent program in a rehabilitation facility was not without some challenges. These involved teaching staff who were employed by the JCCS, but who were expected to accept the culture and structure of the Lindamood-Bell® Program. In addition, other issues that were addressed include integrating the CIS™ Program schedule with the regular school schedule and dealing with skeptical views expressed by teaching and Probation staff not involved in the program.

**Table 2.1**  
**PROJECT MILESTONES**

| <b>Date</b>                  | <b>Activities</b>   |
|------------------------------|---|
| January 2002                 | Coalition formed to address local literacy crisis among male youth incarcerated in local facilities.  |
| June 2002                    | Student screening for eligibility began.  |
| September 2002               | Client randomization began and first instruction session started.   |
| September 2002               | Presentation to introduce program to Probation and JCCS staff working at JRF and Camp Barrett.  |
| September 2002 to March 2003 | Adjustments made to the program eligibility requirements to ensure that all students with literacy deficits were considered eligible.   |
| March 2003                   | Lindamood-Bell lost one clinician at Juvenile Ranch Facility (JRF). A clinician from Camp Barrett transferred to JRF and the staff at Camp Barrett was reduced from three clinicians to two because of limited funding. |
| June 2003                    | Randomization process discontinued and all eligible students were accepted into the program.  |
| August 2003                  | Lindamood-Bell reduced staff at JRF from three clinicians to two because of limited funding.  |
| August 2003                  | JCCS teacher assigned to the program at Camp Barrett left program to instruct in a regular classroom.   |
| September 2003               | Campo I wards were no longer accepted into the program because of short commitment times.   |
| September 2003               | The MAP replaced the TABE as the initial screening tool.  |
| November 2003                | Preliminary data report was released.   |
| December 2003                | A new JCCS teacher began working with the program at Camp Barrett.  |
| March 2004                   | Meeting held to discuss future funding for program and subcommittees were formed.   |
| May 2004                     | Lindamood-Bell discontinued service delivery and services were no longer available at Camp Barrett. Two JCCS teachers and one teacher's aide assumed provision of services at JRF.                                      |
| October 2004                 | Grant application for future funding of program expansion was submitted.  |
| January 2005                 | One JCCS teacher left JRF and began providing services at Camp Barrett.   |

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

## **CLIENT ELIGIBILITY AND IDENTIFICATION**

Between June 2002 and May 2004, juveniles committed to the Juvenile Ranch Facility (JRF) in Campo, California, or to Camp Barrett in Alpine, California, were initially screened for program eligibility at Juvenile Hall or at one of these two rehabilitation facilities (see Table 2.1 for an outline of all major project milestones). These youth had been found guilty of committing a crime, or in juvenile justice terms, a “true finding” had been made by the Juvenile Court. JRF is a residential camp run by the Probation Department for males ranging in age from 13 to 19 years old. Youth who were potentially eligible for the program at this facility were housed either in Campo I (for Breaking Cycles youth with behavioral issues) or RAYO I or II (a program based on the Phoenix House therapeutic model which addresses drug issues, as well as other behavior and life issues). After September 2003, youth assigned to Campo I were no longer considered eligible because of facility schedule changes and short commitments that did not provide ample time to complete the program. Camp Barrett is a residential camp, also run by the Probation Department, for young men ranging in age from 16 to 19 years who have committed serious criminal offenses. These juveniles would normally face lengthy sentences in the California Youth Authority (CYA) if not detained locally.

The screening process varied over time for reasons that are discussed later in this chapter. Prior to October 2003, the Test of Adult Basic Education (TABE) was administered as the initial screening instrument and all students testing at or below the 61<sup>st</sup> percentile on the medium version of the test were considered eligible. Between June 2002 and October 2003, the TABE cut-off score was increased from the 25<sup>th</sup> percentile to the 37<sup>th</sup>, 60<sup>th</sup>, and finally the 61<sup>st</sup> and only the medium version of the test was administered, rather than all four levels (easy, medium, difficult, and advanced). From September 2003 through the end of the program period in May 2004, the initial screening process involved the administration of the Measures of Academic Progress (MAP). All students who scored at or below the 25<sup>th</sup> percentile were allowed to continue in the screening process. The MAP offered several advantages over the TABE including being a more sensitive tool that more accurately measured a student’s ability and ensuring the correct scoring of tests through electronic administration and scoring. Once a student was determined to be eligible according to his MAP score and the Probation Department staff ensured that the youth meet other eligibility criteria (e.g., sufficient commitment time to participate in the eight- to ten-week program), a full battery of screening tests was administered by staff trained by Lindamood-Bell.

Between September 2002 and June 2003,<sup>1</sup> a true experimental design was used to assign eligible clients to either the Lindamood-Bell® treatment condition or to a comparison group. Specifically, three out of every four eligible clients were assigned to receive Lindamood-Bell® services and one out of four was assigned to the comparison group and received “treatment as usual.” This random assignment to conditions was important because it ensured that the two groups were equivalent starting out on any dimension and all eligible clients had an equal chance of being assigned to either group. If any differences between the two groups were later documented, and the only initial difference between the two groups was the type of services received, then it could be concluded that it was the treatment and not any initial differences that was the cause for any differences at program exit. Lindamood-Bell® staff contacted the researchers when a student completed screening to learn whether he would be in the treatment condition or the comparison group.

Documentation of implementation issues revealed that the number of screened students was lower than originally expected. This was at least partly due to the fact that minors entering the facilities after June 30, 2002 were screened for eligibility. Since the program did not start until September, many of these youth did not have sufficient commitment time to complete the program. There was an additional problem related to identifying eligible students at Juvenile Hall. Specifically, the tracking list that was provided to staff at Lindamood-Bell and SANDAG contained inconsistencies and delivery was often delayed. To resolve these issues, additional Juvenile Court and Community School (JCCS) staff members were assigned to the project and a more frequent database delivery schedule (3 times per week) was put in place. Lindamood-Bell® staff took over this responsibility of the project from October 2002 through June 2003 which resulted in a smoother screening process. JCCS staff members resumed responsibility for the tracking list in July 2003 because the reduced number of Lindamood-Bell® staff members did not have sufficient time to complete the task. Eventually, JCCS staff streamlined the process to ensure that all eligible clients were included.

Another problem that was identified during the first year with client screening was with the instrument being used. Specifically, program staff realized that the TABE was not sensitive and that some students who scored above the 61<sup>st</sup> percentile demonstrated substantial reading difficulties that were identified with further evaluation. Program staff also realized that some students were judged to be eligible using the TABE but did not actually have a literacy problem. In addition, approximately one-third of all TABEs administered by JCCS staff had been scored incorrectly. The County Office of Education researched assessments to replace the TABE as the primary assessment tool and eventually adopted the MAP as mentioned previously. In the meantime, the program began using the Gray Oral Reading Test (GORT), version 4A, as a secondary screening tool in November 2002 to enhance the reliability of the screening process. This test was administered to those who scored above the 61<sup>st</sup> percentile on the TABE but appeared to need intensive literacy intervention, as determined by Lindamood-Bell® staff, as well as those who were selected according to teacher, Probation Officer, or student self-referrals. Those students who scored at or below the 25<sup>th</sup> percentile in reading fluency and/or comprehension on the GORT were then eligible for further screening.

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<sup>1</sup> Randomization was completed on June 19, 2003, and since that date all eligible clients received Lindamood-Bell® services if other criteria were met.

Information regarding the number of clients screened and who were eligible for program services is presented with the process evaluation results in Chapter 4.

## STAFFING

One full-time Project Director from Lindamood-Bell Learning Processes was designated to implement the CIS<sup>TM</sup> program at the specified juvenile rehabilitation facilities. From her date of hire in July 2002, the Project Director worked in close collaboration with JCCS and Probation Department staff at each site to ensure successful service provision. The Project Director hired, trained, and supervised staff and secured necessary resources, as well as prepared lesson plans for groups, provided literacy training, and oversaw students' progress and adjusted lesson plans accordingly. This process of fine-tuning lesson plans is referred to as *pacing* by Lindamood-Bell<sup>®</sup> staff.

Initially, three Lindamood-Bell trained clinicians were assigned to each site to provide daily instruction to students. These clinicians also administered a battery of tests to each student before he began to receive program services and then approximately eight to ten weeks later when the student had completed the program. Clinicians were also responsible for scoring and double scoring tests, entering test scores into a computer database, and maintaining group and student files.

Prior to program implementation, two JCCS credentialed teachers were selected to receive training and work along with the Lindamood-Bell<sup>®</sup> clinicians to provide literacy instruction. One teacher worked at each site. The purpose of including JCCS teachers was so that eventually the program could be sustained by them utilizing Lindamood-Bell<sup>®</sup> methods of instruction that were the design of the program. Training for these teachers included a five-day workshop which provided intensive instruction on implementation of Nanci Bell's Visualizing and Verbalizing<sup>®</sup> (V/V<sup>®</sup>) Program, the Seeing Stars<sup>®</sup> (SI<sup>TM</sup>) Program, and the Lindamood Phoneme Sequencing<sup>®</sup> Program (LiPS<sup>®</sup>). During the workshops, teachers observed, practiced and reinforced the steps of the programs. On-site professional development and training for the credentialed teachers included shadowing Lindamood-Bell<sup>®</sup> clinicians and receiving informal training provided by the Project Director. One year after beginning their work with Lindamood-Bell, one of the teachers became certified as a Lindamood-Bell<sup>®</sup> consultant based upon her competencies in performing all duties including pacing, lesson design, test administration, and appropriate grouping of students. In August 2003, after working with the program for one year, the teacher who worked with Lindamood-Bell at Camp Barrett decided to return to his teaching position in a regular classroom setting rather than pursue Lindamood-Bell<sup>®</sup> certification. At that time, JCCS and Lindamood-Bell worked together to identify another teacher well suited for this unique type of instruction. One teacher was found and began working with the program in December 2003. This teacher received the training on-site and had not been certified by Lindamood-Bell by the end of the program period.

Other staff that played key roles managing the day to day workings of the program included two student support specialists assigned by JCCS to administer the MAP and provide the scores along with other demographic data for each student to Lindamood-Bell and SANDAG staff. An office manager provided administrative support to Lindamood-Bell from October 2002 through March 2003. Her duties included tracking students, preparing payroll, providing data to SANDAG, and working with a subcommittee to streamline the tracking list data collection process. After the office manager left, the Lindamood-Bell® clinicians performed these tasks. Probation staff provided valuable support by transporting students to and from literacy sessions and helping clinicians with student behavior issues or concerns. Probation also provided additional student information that was valuable in determining program eligibility.

## **SERVICE PROVISION**

Literacy training for this project was provided through Lindamood-Bell which has pioneered programs to develop the sensory-cognitive processes that underlie reading, spelling, math, language comprehension, and critical thinking. Customized learning plans were developed to address each student's unique needs and classes of one to three students received daily blocks of instruction for three hours per day, five days per week. Through May 2004, two Lindamood-Bell® clinicians worked with students at each of the two sites.<sup>2</sup> In addition, there was one JCCS teacher at each site who had undergone training in the clinical aspects of the Lindamood-Bell® programs. These teachers worked alongside the Lindamood-Bell® staff testing, scoring, and delivering program instruction to the students.

Once students were designated to a specific group, targeted strategies were utilized to address that group's needs. The Lindamood-Bell® approach encompasses three main programs to advance literacy development which address distinct learning deficits. According to Lindamood-Bell, phonemic awareness and symbol imagery are the abilities to auditorily perceive and visually image the number, order, and identity of sounds and letters within words. Individuals with intact phonemic awareness and symbol imagery normally learn to read and spell with ease. Weakness in these functions causes individuals to add, omit, substitute, and reverse sounds and letters within words while reading and spelling. These functions are stimulated through the LiPS® and SI™ Programs. Concept imagery is the ability to image basic concepts and visualize the whole from what is read or heard. This ability underlies oral and written language comprehension, problem solving, and critical thinking. Concept imagery is stimulated through the application of the V/V® Program. See the Appendix for a detailed description of each Lindamood-Bell® program.

One of the challenges of running these types of groups in the facilities was maintaining appropriate group sizes (two to three students is most desirable), while also ensuring that the individuals in these groups were matched on their specific strengths and weaknesses in sensory-cognitive processing. For example, one group may have focused on strengthening decoding skills, while another may have concentrated on building vocabulary and increasing comprehension. According to program staff, the formation of homogeneous groups was critical to the success of the program. At times, eligible clients, who had to wait for a group to start, then became ineligible when their commitment time became too short to allow for program participation. This difficulty was

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<sup>2</sup> There were three clinicians at each site until March 2003 (Camp Barrett) and August 2003 (JRF), when these numbers were reduced due to insufficient funding.

compounded further at JRF where juveniles were generally committed for shorter stays. Typically, groups were in session for eight weeks, but due to time constraints, some students may have only received six to seven weeks of intervention. An additional complication of combining wards from different programs was gang and/or dorm rivalry issues that had to be addressed, as well as facility rules against allowing students from different dorms to interact.

For a period of approximately three hours per day, groups of one to three students met with a clinician at each rehabilitation facility to complete the designated lesson plan for the day. Typically, three clinicians working with three groups of students were assembled during both the morning and afternoon sessions. After every 50 minutes of instruction, the students were given a break and each clinician would move to another table to work with a new group. Generally, the same material was covered during each 50-minute segment but by a different clinician. This repetition, along with varied instructional styles, was intended to improve students' likelihood of learning and retaining the material.

Students participated in a variety of skill-building activities during their daily blocks of instruction. SANDAG researchers observed groups to collect information about the instructional sessions. Students spent time reviewing flash cards of vowel sounds, real words, and nonsense words (i.e., words that have no meaning). Students practiced spelling words on paper and "airwriting" (i.e., students use their finger to write words in the air), writing sentences, and reading aloud and responding to text-related questions. Constant positive feedback from instructors, ample opportunity for participation, individualized attention, a point system with prizes, and fast-paced instruction were elements that kept the students engaged in the program.

## **COMPARISON GROUP CLIENTS**

As noted previously, one out of every four eligible minors was assigned to a comparison group as part of the randomization process required by the experimental research design. Students in this group received "treatment as usual" which consisted of attendance at the Juvenile Court and Community School at the student's respective camp. Students were required to attend class sessions where California standards-based curriculum adopted by the Juvenile Court and Community Schools was provided during a program period of eight to ten weeks.

## **PROGRAM STATUS**

Insufficient funding was the largest obstacle in sustaining the program as implemented. As private and public funding sources were limited by the worsening economic situation nationally over the past few years, efforts to secure funding were unsuccessful. In April 2004, Lindamood-Bell announced that they could no longer provide services at either rehabilitation facility after May 2004 without additional funds. Lindamood-Bell® staff left the two facilities at that time. The County Office of Education remained committed to providing services and has designated the two teachers who had been working with Lindamood-Bell, along with an additional teacher's aide to continue to provide services utilizing the Lindamood-Bell® methods at JRF and Barrett.

The collaborative group continues to seek funding to support existing services and expand these services to other JCCS schools. Since Lindamood-Bell's withdrawal from the program in May 2004, the group has submitted one grant application and continues to pursue private and public grant funding opportunities.

## **SUMMARY**

The literacy program implemented at two local, male rehabilitation facilities included intensive instruction in accordance with the Lindamood-Bell Learning Processes programs. Staff from the Office of the District Attorney, the Juvenile Court, the County Office of Education, Lindamood-Bell Learning Processes, and Probation collaborated to implement and manage the program. The group contracted with SANDAG to conduct a process and impact evaluation of the pilot program. Students were initially screened and those identified as having literacy deficits were randomly assigned to treatment or comparison conditions. The program plan entailed literacy instruction by Lindamood-Bell® clinicians and County Office of Education teachers trained in the Lindamood-Bell® methods. According to the plan, students in the treatment group would receive approximately eight to ten weeks of instruction for 15 hours per week in a small group setting. Students in the comparison group attended class sessions where a California standards-based curriculum was provided. Because of insufficient funding, Lindamood-Bell® staff was not able to continue services as of May 2004. However, the County Office of Education continued to provide services at the two original sites.



**CHAPTER 3**  
**EVALUATION METHODOLOGY**



# CHAPTER 3

## EVALUATION METHODOLOGY

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### INTRODUCTION

Both a process and outcome evaluation were conducted as part of this project. The purpose of the process evaluation was to determine if the program was implemented as planned. In addition to interacting on a regular basis with program team members, researchers compiled information for the evaluation from program records and screening test scores. The purpose of the impact evaluation was to determine if the expected outcome results were realized. To be able to answer this question, an experimental design was used so that clients who received Lindamood-Bell® services could be compared to a matched group of juveniles who did not receive services. Outcome measures that were tracked included post-intervention literacy test scores, school performance, and criminal activity. This chapter of the final report describes specific research questions that were asked and the data sources used to answer them.

### PROCESS EVALUATION

#### Statement of Hypotheses

*Hypothesis 1: Juveniles at the Juvenile Ranch Facility and Camp Barrett have poor literacy skills and need enhanced instruction.*

#### Specific Research Questions

- How many juveniles were screened and eligible for program participation?
- What was the level of need of eligible clients?

#### Data Sources

Information regarding client screening and eligibility was compiled from the tracking database that was maintained by Juvenile Court and Community Schools (JCCS) and Lindamood-Bell® staffs. In addition, supplemental screening information regarding other exclusion reasons was received from Probation Department staff. SANDAG researchers received these data on a regular basis and maintained updated descriptive statistics from them. Client level of need information, from standardized tests, was received from Lindamood-Bell® staff in an Excel database. These data were transferred to SPSS for Windows, a statistical software package, for analysis. In addition, information from client pre-surveys (a 25 item questionnaire regarding opinions toward school and reading using five-point Likert scales) and data on school performance (e.g., grade point average, attendance, and suspensions) prior to randomization were also collected.

The standardized tests that were administered at intake (and exit) by Lindamood-Bell® staff included the following:

*Peabody Picture Vocabulary Test:* The Peabody Picture Vocabulary Test-III (PPVT-III) assesses receptive oral vocabulary and can be used as a screening test of general verbal ability for native English speakers or as a screening of English proficiency for non-native speakers of English. The individual must select one picture from among four to match an orally presented word.

*Oral Directions Test:* This subtest of the Detroit Tests of Learning Aptitude 2 (DTLA-2) assesses the ability to mark visual material after oral directions have been given in entirety. This is a highly complex task involving linguistic and abstract knowledge as well as visual, motor and memory capacities. The following is an example from the test: "Draw a line from one star to the other star that does not touch the triangle. Do it now."

*Woodcock Word Attack Test:* The Woodcock Word Attack Test, a subtest of the Woodcock Reading Mastery Tests Revised (WRMT-R), assesses the ability to decode nonsense words composed of one to four syllables. This provides information about the individual's ability to phonetically process unfamiliar words.

*Wide Range Reading Test:* This subtest of the Wide Range Achievement Test Revised/3 (WRAT-3) assesses academic progress in word recognition. The individual may be asked to name 15 isolated letters and/or read given words ranging from simple syllables to complex multi-syllable structures. This provides information regarding the individual's word recognition ability.

*Wide Range Spelling Test:* This subtest of the Wide Range Achievement Test Revised/3 (WRAT-3) assesses academic progress in spelling. The individual is asked to write his/her name, and, depending on age and ability, may be asked to write isolated alphabet letters and/or spell given words ranging from single syllable to complex multi-syllable real words. This provides information about the individual's spelling readiness and/or written spelling ability.

*GORT Tests:* The GORT, or Gray Oral Reading Test-Revised/4 (GORT-4), is a revised edition of the original version. The GORT-4 uses multiple-choice questions to obtain a score for reading comprehension in addition to scores for rate, accuracy, and overall passage decoding ability (referred to in this report as GORT Comprehension, GORT Rate, GORT Accuracy, and GORT Fluency, respectively). This test provides percentiles and standard scores that have been normed according to a population based on comparable chronological ages.

***Hypothesis 2: Lindamood-Bell® Program participants will receive enhanced literacy training during detention.***

### **Specific Research Questions**

- How did clients exit the program?
- How much and what type of treatment did clients receive?

### **Data Sources**

Information regarding client intake and exit dates, as well as the types and amount of intervention provided, was documented by Lindamood-Bell® staff and provided in an Excel database to SANDAG on a regular basis. These data were transferred to SPSS for analysis. In addition, client exit information was provided to the researchers when a client left the program.

***Hypothesis 3: Program clients will be satisfied with the service they have received and feel that it has made a positive impact on their lives.***

### **Specific Research Questions**

- Did clients feel that the program had a positive effect on their learning abilities at program exit?

### **Data Sources**

All eligible clients, regardless of which group they were assigned to, completed a client survey prior to randomization (as previously described), as well as after exit testing was conducted. These surveys asked a number of questions related to reading ability, as well as the client's opinion of the program (if he was in the treatment group). These confidential surveys were returned to SANDAG for coding, data entry, and analysis. A total of 248 intake surveys and 211 exit surveys were completed, matched by client identification number, and available for analysis.

## **IMPACT EVALUATION**

### **Statement of Hypothesis**

***Hypothesis 4: Positive outcomes will be realized at program exit for Lindamood-Bell® Program clients.***

### **Specific Research Questions**

- Did Lindamood-Bell® clients show more improvement on literacy test scores after program participation than comparison clients?
- Did Lindamood-Bell® clients demonstrate better school performance after program participation?
- Was criminal activity for successful Lindamood-Bell® clients decreased?

## **Data Sources**

Clients in both the treatment condition and the comparison group were post-tested after either the intervention or approximately nine weeks later. These data were compiled by Lindamood-Bell® staff and forwarded to SANDAG in an Excel database for analysis. The data were linked with the intake testing data by client identification number. Information regarding school performance at the time of program intake and exit was collected by research staff using print-outs from San Diego County Office of Education computer databases. Data elements pertained to grades, attendance, and disciplinary measures taken against the juvenile such as suspensions. Information was collected for the one-month period prior to the minor's detention and up to one year after camp release. Criminal activity information was also collected by research staff. Probation files and computerized records were used to document the number and type of referrals and sustained petitions a juvenile had, both prior to program assignment, as well as up to one year after exiting the rehabilitation facility.

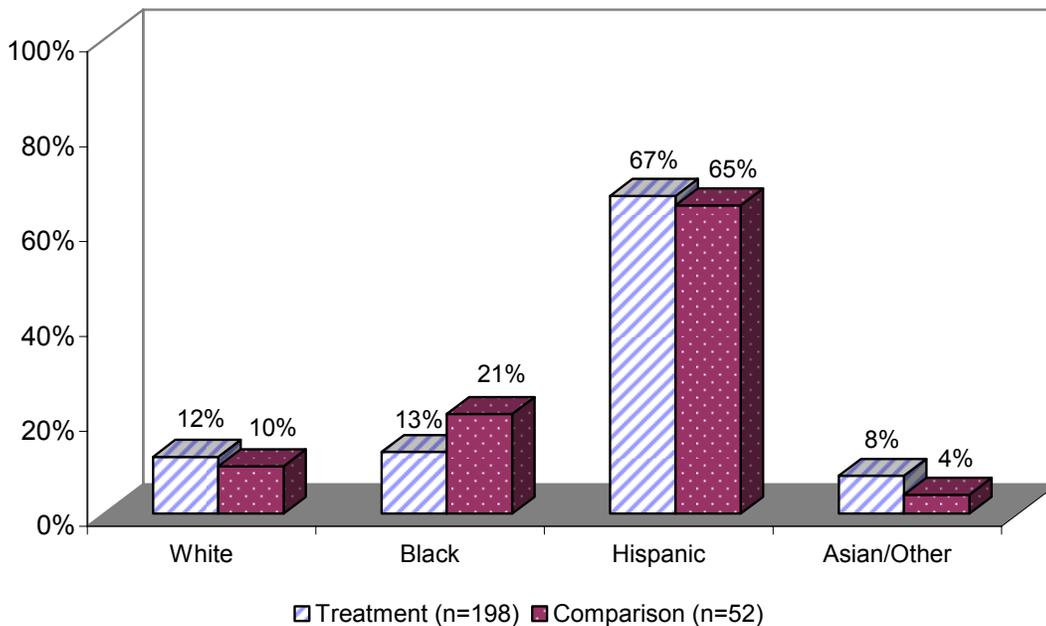
## **Analyses**

In addition to presenting data frequencies, measures of central tendency, standard deviations (a measure of variability), and cross-tabulations, inferential statistics were also used to compare change over time within the treatment group (using within-subjects t-tests) and between the treatment and comparison groups (using between-subjects t-tests or Analysis of Variance). To determine which factors were related to program exit status, as well as the amount of services received, additional analyses were done with such factors as facility location and literacy problem type (i.e., decoding or comprehension) as independent variables. A p value of .05 was used for all significant tests, and effect sizes (eta squared) are presented when appropriate. When a result is statistically significant, it means that the difference is real and not due only to chance variation or error.

## Sample Description

Random assignment was successful in that the two groups were similar in terms of ethnic background and age. As Figure 3.1 shows, about two-thirds (67% of the treatment group and 65% of the comparison) of the randomized youth were Hispanic. In addition, around one in ten (12% and 10%, respectively) was White. Almost half (47%) of those in the treatment group and 43 percent of those in the comparison group reported that English was their second language. These males ranged in age from 11 to 18 years and the average age for both groups was around 16 years (16.8 for the treatment group and 16.6 for the comparison) (not shown).

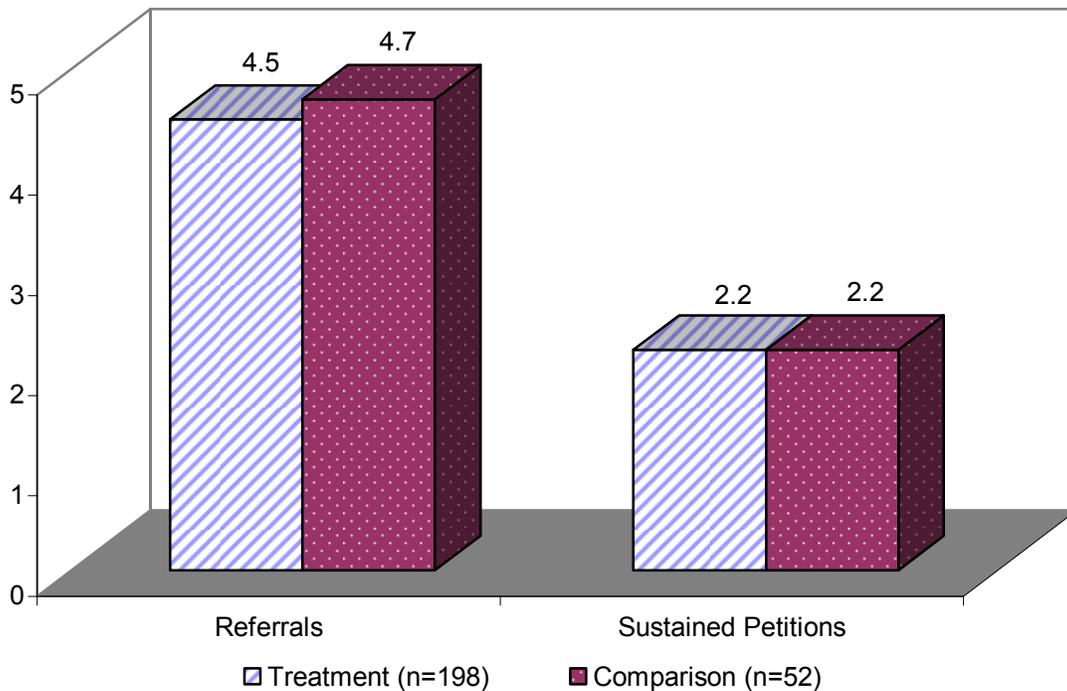
**Figure 3.1**  
**TREATMENT AND COMPARISON GROUP ETHNICITY**



SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

The two groups were also matched on their prior criminal histories. As Figure 3.2 shows, both groups had received over four referrals to probation, on average, and had about two sustained petitions. For about three-quarters (72% of the treatment group and 71% of the comparison group), the highest charge on a sustained petition was at the felony level. In addition, about one-third (34% and 38%, respectively) had at least one prior commitment to a rehabilitation facility and nearly three-quarters (70% and 73%, respectively) were already wards of the court at the time of the current offense (not shown).

**Figure 3.2**  
**TREATMENT AND COMPARISON GROUP DELINQUENCY HISTORY**



SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

## SUMMARY

As part of the two-year Lindamood-Bell® Center in a School™ Project, SANDAG conducted a process and impact evaluation that included tracking 198 treatment and 52 comparison group clients. Most of these clients were Hispanic and many had prior contact with the juvenile justice system. To determine if the program was implemented as planned, staff tracked client eligibility and need through student assessments, surveys, and other records; documented service provision and exit status; and measured client satisfaction with the services received. For the impact evaluation, outcome measures related to reading abilities (including decoding and comprehension), school performance, and continued contact with the juvenile justice system were collected.

## **CHAPTER 4**

# **PROCESS EVALUATION RESULTS**



# CHAPTER 4

## PROCESS EVALUATION RESULTS

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### INTRODUCTION

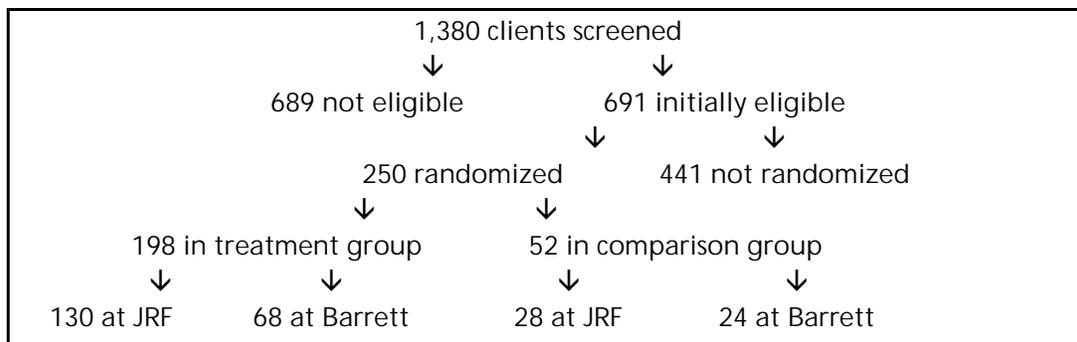
As discussed in the previous chapter, three research questions were addressed as part of the process evaluation. This chapter describes information collected from program records and client surveys outlining how many clients needed and received services, what types of services they received, and participants' perceptions on the helpfulness of this program.

### HYPOTHESIS 1 RESULTS

#### How Many Juveniles were Screened and Eligible for Program Participation?

As Table 4.1 shows, 1,380 juveniles who were assigned to either the Juvenile Ranch Facility (JRF) or Camp Barrett were initially screened for program eligibility. Of these, 691 were determined to be initially eligible and 689 were not. As previously described, this 50 percent initial eligibility rate was much lower than was originally expected and may be related in part to the poor screening instrument which was used during the first year of the evaluation. Of the 691 who were eligible, 675 had an eligible TABE/MAP score and 16 were screened for initial eligibility after being identified through another source (e.g., self or teacher referral) (not shown). Also, of the 691 who were initially eligible, 250 continued on in the screening process and were randomized. The most common reasons for not randomizing the 441 included the juvenile having a stay that was too short or there not being room in the program. The 198 clients in the treatment group include 147 who were randomized, as well as 51 who entered the program after randomization was complete (not shown).

**Table 4.1**  
**JUVENILES SCREENED, ELIGIBLE, AND RANDOMIZED**



SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

## What was the Level of Need of Eligible Clients?

### *Lindamood-Bell® Assessments*

During the Lindamood-Bell® screening process, a number of different types of tests were administered to the potential clients (as described in Chapter 3). Table 4.2 shows the name of each test, which scores were considered in the normal range, and what the average score and standard deviation was for that test for each of the two study groups. For each of the tests, while some students scored above the normal range on the tests administered at intake, the average for both groups consistently fell below the lower end. For example, the Oral Directions test measures a student's ability to follow oral directions. A normal score (between the 25<sup>th</sup> and 75<sup>th</sup> percentile) would be any score between 8 and 12. On average, students in the treatment group scored 4.8 on this test at intake, while those in the comparison group scored 4.5. Randomization was successful in that the treatment and comparison group did not significantly differ at intake on any of their test scores. It should also be noted that the scores did not significantly vary by facility except for the Woodcock Word Attack (Camp Barrett mean pre-score of 82.3 and 86.4 at JRF). Likewise, students differed significantly on only two tests according to whether or not youth had an Individualized Education Plan (IEP) <sup>1</sup>. Students with an IEP had an average score of 75.8 on the Wide Range Reading test and 72.2 on the Wide Range Spelling test at intake compared to those students without an IEP who had higher average scores on both tests (80.6 and 78.6, respectively).

**Table 4.2**  
**TREATMENT AND COMPARISON GROUP PRE-TEST SCORES**

| <b>Test</b>                | <b>Normal Range</b> | <b>Treatment</b> | <b>Comparison</b> |
|----------------------------|---------------------|------------------|-------------------|
| Peabody Picture Vocabulary | 90 – 110            | 79.1 (12.7)      | 81.3 (11.2)       |
| Oral Directions            | 8 – 12              | 4.8 (2.7)        | 4.5 (2.9)         |
| Woodcock Word Attack       | 90 – 110            | 84.5 (12.9)      | 85.5 (13.6)       |
| Wide Range Reading         | 90 – 110            | 79.2 (13.4)      | 81.9 (12.9)       |
| Wide Range Spelling        | 90 - 110            | 76.6 (14.2)      | 78.4 (15.6)       |
| GORT Rate                  | 8 – 12              | 5.3 (2.1)        | 5.7 (2.3)         |
| GORT Accuracy              | 8 – 12              | 5.4 (2.8)        | 5.9 (3.1)         |
| GORT Fluency               | 8 – 12              | 3.6 (2.5)        | 4.1 (3.1)         |
| GORT Comprehension         | 8 - 12              | 5.2 (2.3)        | 5.6 (2.4)         |
| <b>TOTAL</b>               |                     | <b>197 - 198</b> | <b>52</b>         |

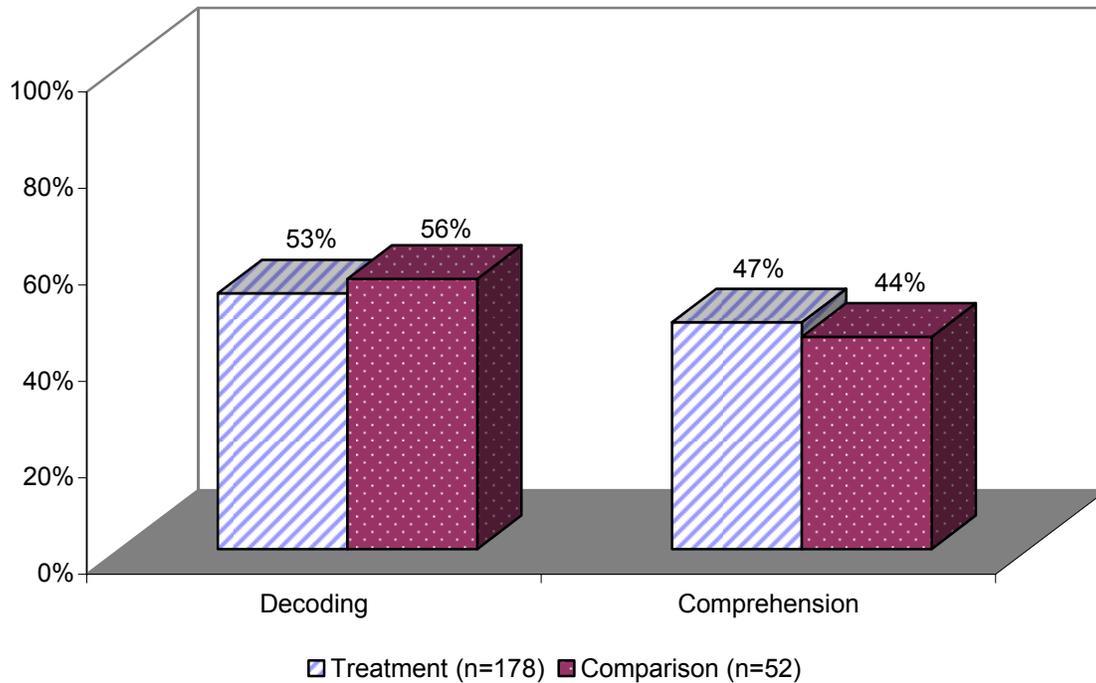
*NOTE: Cases with missing information not included. Means are shown, with standard deviations in parentheses.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

<sup>1</sup> An Individualized Education Plan (IEP) is a written plan for special education services for a particular student. Learning expectations and educational accommodations for the student are specified in his IEP.

Lindamood-Bell categorizes clients as either having a primary problem of decoding language or comprehending what they read. As Figure 4.1 shows, about half of both groups (53% treatment and 56% comparison) were described as having a difficulty with decoding. Interestingly, the youth at the two facilities differed in the type of need they had with juveniles at Barrett more likely to have a comprehension problem (66%) and those at JRF to have a decoding problem (65%) ( $\chi^2 (1) = 19.09$ ) (not shown).

**Figure 4.1**  
**CLIENT LITERACY NEEDS**



*NOTE: Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

The intake test scores varied significantly for six of the nine tests shown in Table 4.2, with individuals with decoding difficulties scoring consistently *lower* than those with comprehension problems (Woodcock Work Attack 82.7 versus 87.9, Wide Range Reading 77.7 versus 83.0, Wide Range Spelling 73.4 versus 81.8, GORT Rate 4.9 versus 6.0, GORT Accuracy 4.8 versus 6.4, GORT Fluency 3.0 versus 4.6) (not shown).

## Student Surveys

As previously described, all eligible clients completed a pre-survey prior to randomization. This survey included 14 questions regarding the students' opinions toward reading, school, and the importance of education (rated on a five-point scale from "Strongly Agree" to "Strongly Disagree"). As Table 4.3 shows, it appears that there was a disconnect between students' views towards education and how well they thought they were doing or how much they liked school. In the first half of the table, the percentage of students agreeing with a positive education or school statement is shown. Almost all (93% of the treatment group and 88% of the comparison) agreed that education was important, but around two-thirds or less reported that they ask for help in school, plan to continue their education past high school, like to read, or found learning to read easy. Similarly, very few students agreed with the statement "I do *not* think that being able to read is necessary to be successful in life," but one-third or more expressed negative views about their own school experiences.

**Table 4.3**  
**CLIENTS' VIEWS ON EDUCATION**

| <b>Positive Statements</b>   | <b>Treatment</b> | <b>Comparison</b> |
|--|------------------|-------------------|
| It is important for my future that I finish school                           | 93%              | 88%               |
| It is important to my parent/guardian that I get a good education            | 92%              | 94%               |
| I plan to graduate from high school or receive my GED                        | 89%              | 87%               |
| I think being able to read is necessary to be successful in school           | 80%              | 79%               |
| If I do not understand something in school, I ask for help                   | 66%              | 73%               |
| I plan to attend college after I complete high school or receive my GED      | 60%              | 46%               |
| I like to read   | 59%              | 71%               |
| Learning to read when I was in elementary school was easy                    | 56%              | 53%               |
| I have access to a lot of reading material at home                           | 55%              | 55%               |
| <b>Negative Statements</b>   |                  |                   |
| I do not think that being able to read is necessary to be successful in life | 18%              | 12%               |
| I don't like school  | 31%              | 44%               |
| Even when I try, I don't do well in school                                   | 38%              | 41%               |
| I think school is harder for me than it is for other kids                    | 42%              | 33%               |
| I am not happy with my grades in school                                      | 57%              | 57%               |
| <b>TOTAL</b>   | <b>191-196</b>   | <b>50-52</b>      |

*NOTE: Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

Consistent with this view of their own abilities, students were fairly positive about their ability to understand conversation, follow spoken directions, and pay attention in different types of situations (Table 4.4). However, they were less confident about their abilities in specific school subjects including reading, math, vocabulary, and spelling, as well as their ability to study or understand what they have read. The treatment and comparison groups rated their abilities similarly.

**Table 4.4**  
**CLIENTS' VIEWS ON THEIR ABILITIES AT INTAKE**

| <b>Rated Their Ability as "Very Good" or "Good"</b> | <b>Treatment</b> | <b>Comparison</b> |
|---|------------------|-------------------|
| Understanding conversation                          | 65%              | 75%               |
| Paying attention at home                            | 62%              | 63%               |
| Following spoken directions                         | 56%              | 50%               |
| Paying attention in general                         | 52%              | 46%               |
| Paying attention in school                          | 44%              | 39%               |
| Understanding of what you read                      | 41%              | 31%               |
| Ability to do homework/prepare for a test           | 39%              | 31%               |
| Reading   | 32%              | 40%               |
| Vocabulary  | 31%              | 35%               |
| Math  | 29%              | 23%               |
| Spelling  | 27%              | 33%               |
| <b>TOTAL</b>  | <b>193-196</b>   | <b>51-52</b>      |

*NOTE: Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

## *School Data*

There were no significant differences between the two groups in their school performance at intake, based on the information that was available from the San Diego County Office of Education. Depending on the variable of interest, information was available for 50 to 125 of individuals in the treatment group and 13 to 34 in the comparison group.

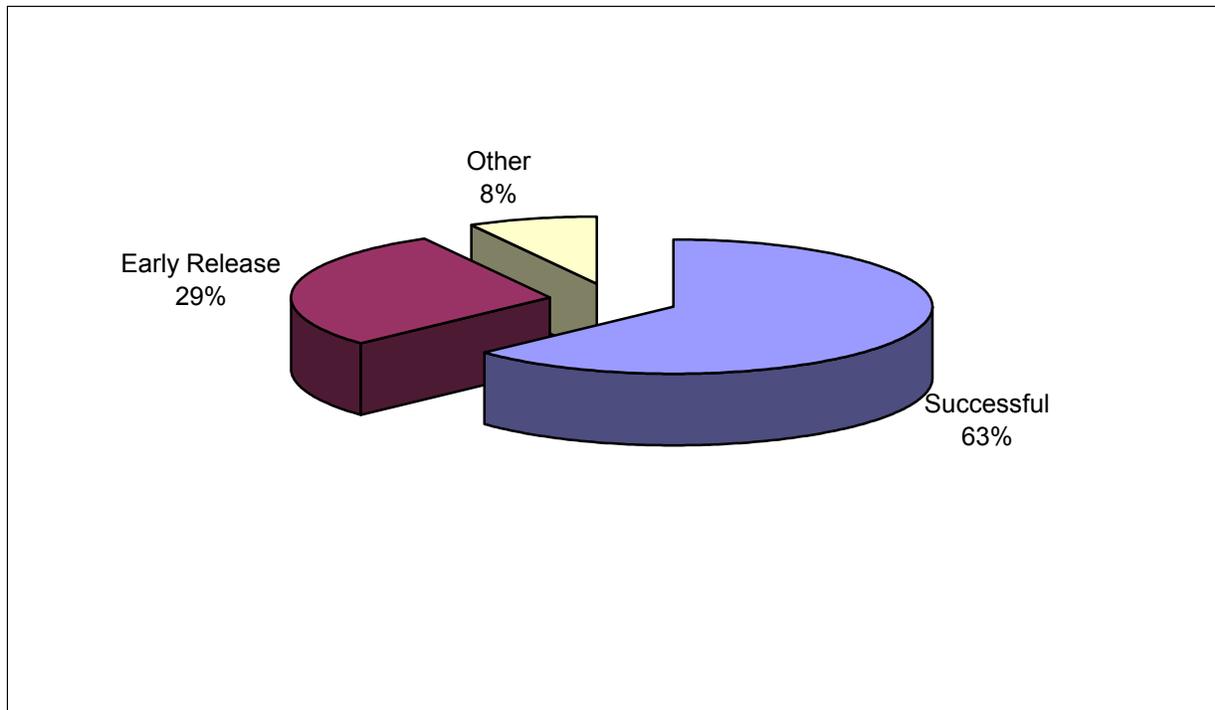
- Both groups had an average grade point average (GPA) that was less than 2.0 (1.3 for the treatment group and 1.5 for the comparison).
- Almost half (47%) of the treatment group and 41 percent of the comparison group were categorized as not being at their appropriate grade level.
- Of those enrolled, around half (53% and 57%, respectively) were enrolled in a Court school. However, these figures could be an overrepresentation due to the source of the data.
- Information on an immediate history of suspensions was not available for many individuals, but a small percentage of both groups had been suspended (12 of 50 treatment clients and 3 of 13 comparison clients had at least one documented suspension).
- On average, those in the treatment group had attended about two-thirds (66%) of the possible school days in the 30 days prior to entrance into the facility, compared to 76 percent attendance for those in the comparison group.
- Nearly one-third of students (28% of treatment and 29% of comparison) in each group had an IEP. Worth noting, students at Camp Barrett were significantly more likely to have an IEP (37%), compared to those enrolled at JRF (22%) ( $\chi^2 (1) = 5.38$ ).
- When the youth in both groups were asked if they had ever previously received help for their reading skills, over half of both groups (59% treatment and 63% of comparison) responded affirmatively. It should be noted that the question did not ask who provided the help.

## HYPOTHESIS 2 RESULTS

### How did Clients Exit the Program?

As Figure 4.2 shows, around two-thirds (63%) of participants successfully completed the program (i.e., completed the full course of instruction). Of the remaining individuals, 29 percent were released earlier than expected, and 8 percent exited because of another reason (including administrative removals, negative behavior, medical issues, and having a new charge). Exit reason varied by program site, however, with a greater percentage of Camp Barrett participants successfully completing the program (88%), compared to those at JRF (50%) ( $\chi^2 (1) = 38.9$ ) (not shown). This difference was related at least in part to the longer commitment time for juveniles at Camp Barrett, as described in the next section.

**Figure 4.2**  
**CLIENT EXIT STATUS**



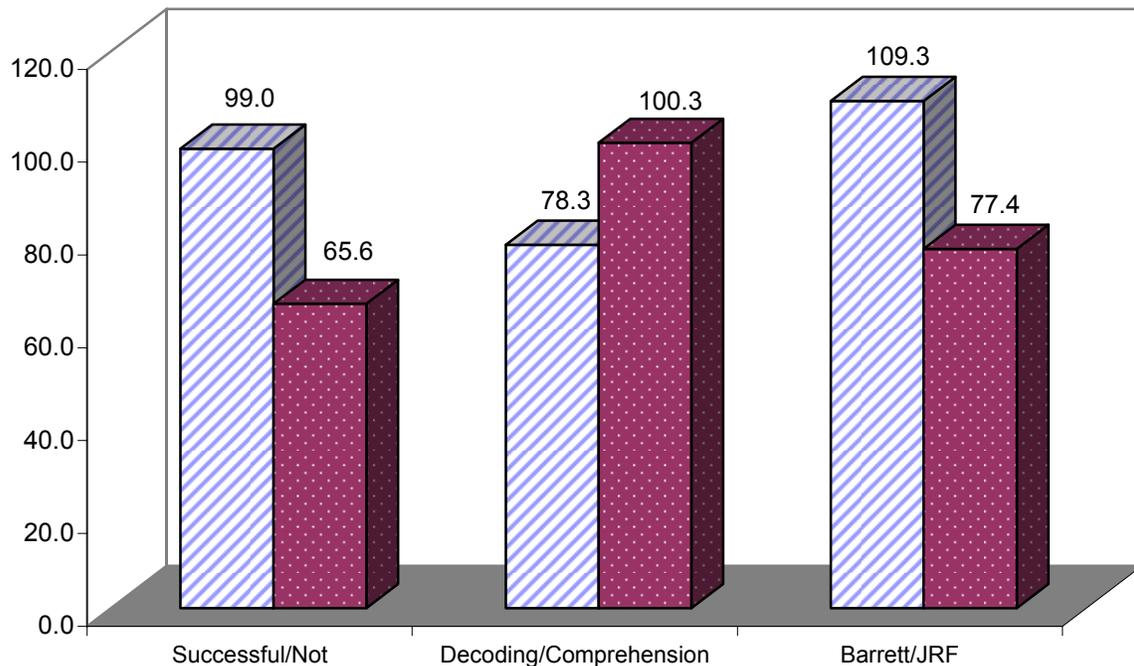
**TOTAL = 198**

SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

## How Much and What Type of Treatment did Clients Receive?

Overall, Lindamood-Bell® clients spent an average of 88.7 hours of instruction in the program ( $SD = 28.6$ )<sup>2</sup>. As Figure 4.3 shows, however, this time varied significantly by a number of factors, including whether the client successfully completed ( $t(176) = 7.40$ ) the program, whether decoding or comprehension skills were targeted ( $t(176) = 1.18$ ), and whether the client was at Camp Barrett or JRF ( $t(176) = 5.00$ ). Camp Barrett students, who were more likely to have comprehension problems, received more services which was consistent with the fact that the youth at this facility typically had longer commitments, allowing program staff to offer the full treatment dosage.

**Figure 4.3**  
**AVERAGE NUMBER OF TREATMENT HOURS RECEIVED**



**TOTAL = 178**

*NOTE: Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

<sup>2</sup> The average amount of time that elapsed between comparison group clients' pre- and post-test dates was 9.9 weeks ( $SD = 3.0$ ) compared to approximately 7 weeks for the treatment group.

Three different types of interventions were provided to treatment clients: Lindamood Phoneme Sequencing® (LiPS®) Program, Seeing Stars® for Symbol Imagery (SI™) Program, and Visualizing and Verbalizing for Language Comprehension and Thinking® (V/V®) Program (see Appendix for a description of each of these curriculum). Table 4.5 presents information on the number of hours of services received in each of the programs. These means ranged from almost 13 hours of instruction for LiPS® to around 70 hours for the SI™ Program. It should be noted that the LiPS® Program is never done in isolation, but always in conjunction with SI™. Overall, 87 percent of the clients received SI™ services, 53 percent V/V®, and 26 percent LiPS® (not shown).

**Table 4.5  
TYPE AND AMOUNT OF PROGRAM SERVICES RECEIVED**

| <b>Program</b> | <b>Number of Participants</b> | <b>Mean Hours</b> |
|----------------|-------------------------------|-------------------|
| LiPS®          | 47                            | 12.9 (10.2)       |
| SI™            | 154                           | 71.4 (26.6)       |
| V/V®           | 95                            | 38.6 (28.8)       |
| <b>TOTAL</b>   | <b>178</b>                    |                   |

*NOTE: Standard deviations are shown in parentheses. Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

## **HYPOTHESIS 3 RESULTS**

### **Did Clients Feel the Program Had a Positive Effect on Their Learning Abilities at Program Exit?**

Students in both the treatment and comparison groups were administered a post-survey after exit testing was completed. This survey included the same questions that had been asked previously, as well as eight additional ones for the treatment group regarding their opinion of the services provided. As Table 4.6 shows, treatment clients who successfully completed the program were very positive about the effect the program had on their reading, vocabulary, and spelling (questions were asked in both positive and negative ways to ensure respondents actively thought about how to answer the question). In addition, the majority thought that what they learned helped them with their other classes, as well as life in general. Ninety-three percent (93%) said that they would recommend the program to other students.

When asked to rate their abilities, successful treatment clients also rated themselves higher at exit than they did at entry. As Table 4.7 shows, clients were most likely to say their vocabulary, reading, and comprehension had improved. The fact that more clients did not give a higher rating at exit could be an indicator that clients had a more realistic view of their abilities after participation. It should be noted that those clients who left the program for other reasons also gave the program high ratings.

**Table 4.6**  
**SUCCESSFUL CLIENTS' OPINION OF THE PROGRAM**

|  |                  |
|--|------------------|
| The program helped me with reading                             | 98%              |
| I would recommend the program to other students                | 93%              |
| I can understand what I read better now because of the program | 90%              |
| The program helped me with vocabulary                          | 89%              |
| The program was helpful  | 88%              |
| Things I learned in the program have helped with other classes | 87%              |
| The program helped me with spelling                            | 78%              |
| I use things I learned in the program in life in general       | 75%              |
| <b>TOTAL</b>   | <b>111 - 113</b> |

*NOTE: Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

**Table 4.7**  
**SUCCESSFUL CLIENTS WHO RATED THEIR ABILITIES HIGHER AFTER PARTICIPATION**

|   |                  |
|---|------------------|
| Vocabulary                                | 35%              |
| Reading                                   | 32%              |
| Understanding what you read               | 28%              |
| Paying attention in general               | 24%              |
| Math                                      | 22%              |
| Paying attention at home                  | 21%              |
| Paying attention in school                | 14%              |
| Ability to do homework/prepare for a test | 13%              |
| Spelling                                  | 10%              |
| <b>TOTAL</b>                              | <b>112 - 116</b> |

*NOTE: Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

## **SUMMARY**

Through its process evaluation of the Lindamood-Bell® Center in a School™ project, SANDAG addressed research questions pertaining to client eligibility and need, service provision, and satisfaction with the program. Overall, about one in five youth who were screened for the program were eligible. This lower than expected rate was at least partially related to difficulties in the screening process, as well as administrative issues (e.g., difficulty in forming homogeneous groups, short commitment times). Youth who were eligible scored below the normal range on a number of standardized assessments, gave themselves poor ratings in areas of academic achievement, and were not doing well in school overall. Clients received about 89 hours of treatment designed to address their decoding and comprehension difficulties. Two-thirds of these individuals successfully completed the program, many of whom gave it high ratings and noted it helped to improve their vocabulary, reading, and comprehension skills.



## **CHAPTER 5**

# **IMPACT EVALUATION RESULTS**



# CHAPTER 5

## IMPACT EVALUATION RESULTS

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### INTRODUCTION

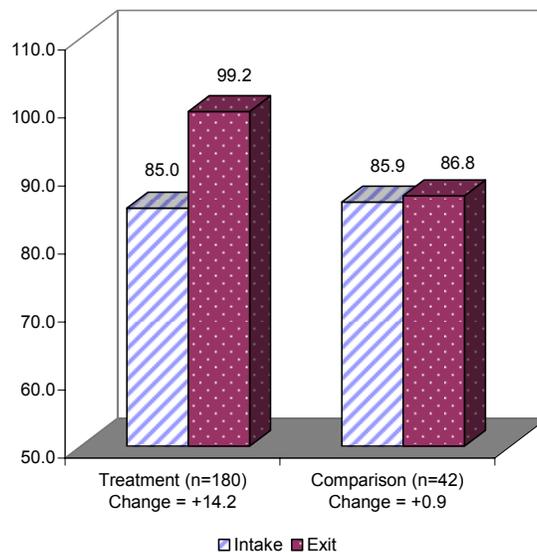
The outcome measures used for this impact evaluation included pre/post testing for both the treatment and comparison groups, as well as data collection from school and juvenile justice system records. The research questions included with Hypothesis 4 are answered in this chapter and additional analyses pertaining to which factors were related to positive outcomes are discussed.

### HYPOTHESIS 4 RESULTS

#### Did Lindamood-Bell® Clients Show More Improvement on Literacy Test Scores After Program Participation than Comparison Clients?

As the following set of nine figures shows, Lindamood-Bell® clients (regardless of their exit status) made significant gains in every area they were tested on from intake to exit. In contrast, the comparison group clients only made significant gains on the GORT Accuracy and GORT Fluency tests ( $t(41) = -2.08$  and  $t(41) = -2.45$ ). The greatest gain was made on the Woodcock Word Attack Test (Figure 5.1), which assesses the ability to decode nonsense words composed of one to four syllables. Other medium and large effect sizes were realized for the Wide Range Achievement Reading Test (Figure 5.2), the GORT Accuracy, Fluency, and Comprehension Tests (Figures 5.5 - 5.7), and the Peabody Picture Vocabulary Test (Figure 5.9). Results from statistical tests indicating significant changes for each group's mean change in score are presented under each figure along with the average change in test score from intake to exit.

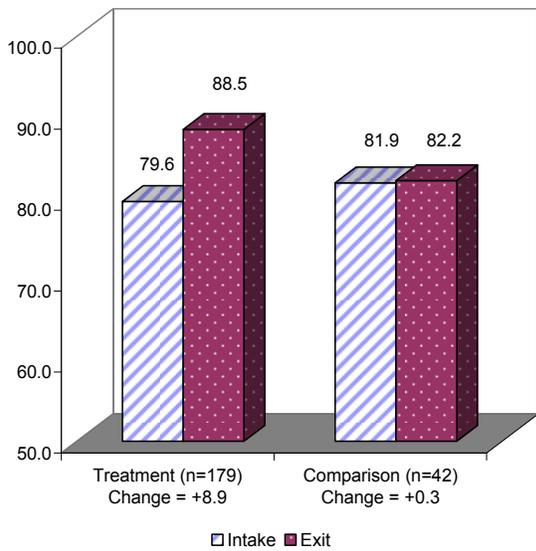
**Figure 5.1**  
**PRE/POST WORD ATTACK TEST**



$$F(1, 220) = 72.70, \eta^2 = .25$$

SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

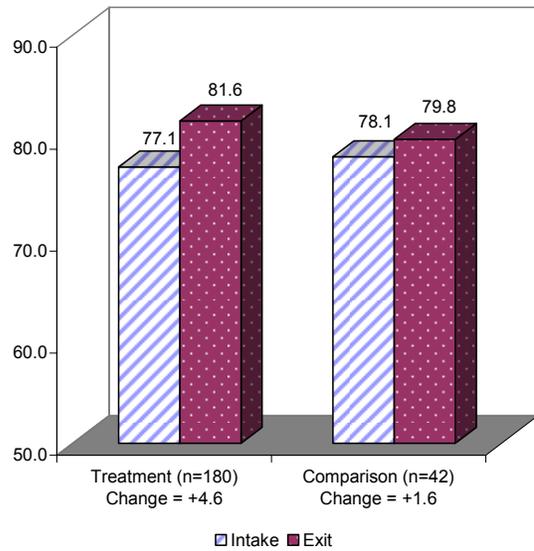
**Figure 5.2**  
**PRE/POST WIDE RANGE ACHIEVEMENT**  
**READING TEST**



$F(1, 219) = 37.52, \eta^2 = .15$

SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

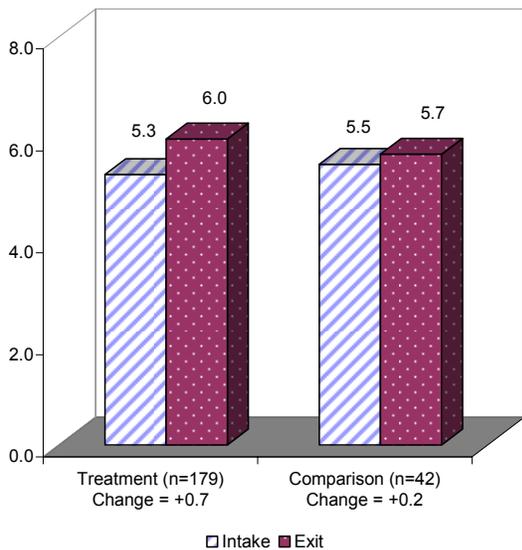
**Figure 5.4**  
**PRE/POST WIDE RANGE ACHIEVEMENT**  
**SPELLING TEST**



$F(1, 219) = 5.57, \eta^2 = .03$

SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

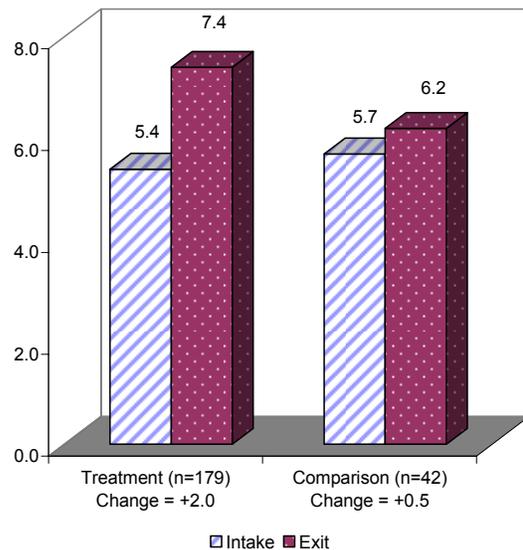
**Figure 5.3**  
**PRE/POST GORT RATE TEST**



$F(1, 219) = 5.71, \eta^2 = .03$

SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

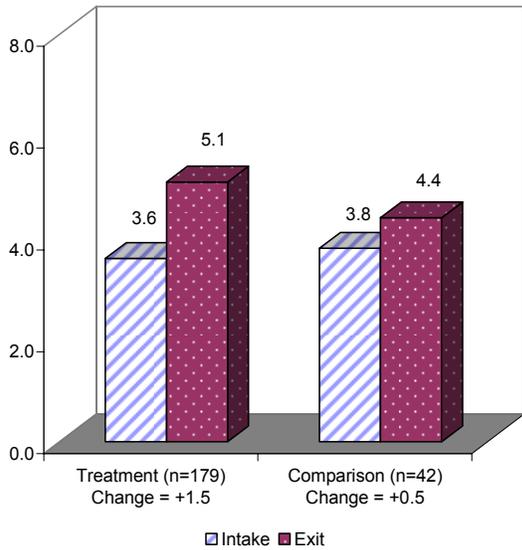
**Figure 5.5**  
**PRE/POST GORT ACCURACY TEST**



$F(1, 219) = 26.90, \eta^2 = .11$

SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

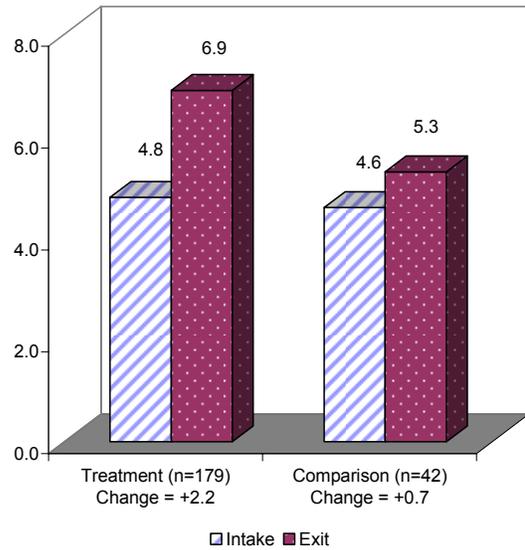
**Figure 5.6**  
**PRE/POST GORT FLUENCY TEST**



$F(1, 219) = 12.93, \eta^2 = .06$

SOURCE: SANDAG's Lindamood-Bell® Center in a School™  
Final Evaluation Report, March 2005

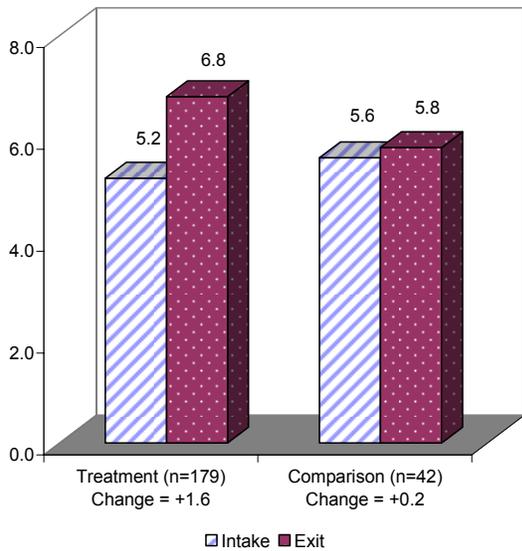
**Figure 5.8**  
**PRE/POST ORAL DIRECTIONS TEST**



$F(1, 219) = 12.08, \eta^2 = .05$

SOURCE: SANDAG's Lindamood-Bell® Center in a School™  
Final Evaluation Report, March 2005

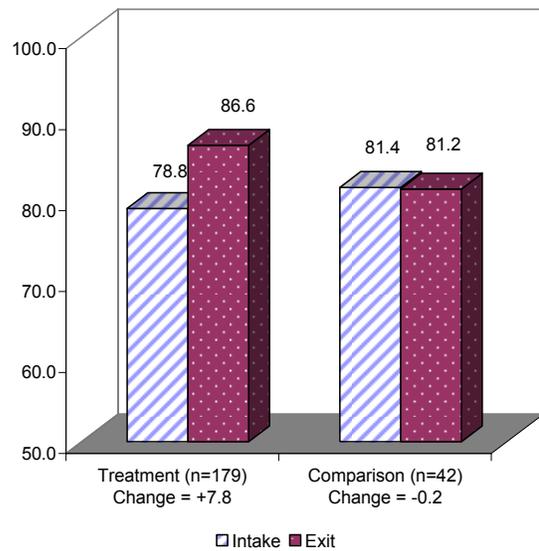
**Figure 5.7**  
**PRE/POST GORT COMPREHENSION TEST**



$F(1, 219) = 14.39, \eta^2 = .06$

SOURCE: SANDAG's Lindamood-Bell® Center in a School™  
Final Evaluation Report, March 2005

**Figure 5.9**  
**PRE/POST PEABODY PICTURE VOCABULARY TEST**



$F(1, 220) = 28.40, \eta^2 = .11$

SOURCE: SANDAG's Lindamood-Bell® Center in a School™  
Final Evaluation Report, March 2005

In addition, as Table 5.1 shows, a greater percentage of treatment clients scored in or above the normal range (90 to 110 or 8 to 12) after program participation, compared to before. These changes ranged from 10 percent more being at or above the range on the GORT Rate test (from 11% on the pre-test to 21% on the post-test) to 40 percent more being in this range on the Word Attack test (from 39% on the pre-test to 79% on the post-test).

**Table 5.1  
PERCENT OF TREATMENT CLIENTS SCORING IN THE NORMAL RANGE**

|                            | <b>Intake</b>    | <b>Exit</b> |
|----------------------------|------------------|-------------|
| GORT Fluency               | 9%               | 21%         |
| GORT Rate                  | 11%              | 21%         |
| GORT Comprehension         | 17%              | 34%         |
| GORT Accuracy              | 17%              | 42%         |
| Oral Directions            | 18%              | 46%         |
| Wide Range Spelling        | 19%              | 29%         |
| Peabody Picture Vocabulary | 19%              | 38%         |
| Wide Range Reading         | 22%              | 49%         |
| Woodcock Word Attack       | 39%              | 79%         |
| <b>TOTAL</b>               | <b>177 - 180</b> |             |

*NOTE: Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

A number of factors were related to the magnitude of the change in test scores between intake and exit for Lindamood-Bell® clients. Test scores are compared and presented in Table 5.2 through Table 5.4 for subsets of the program participants. First, while both those who successfully completed and those who did not made significant gains, the level of change was significantly greater for those who completed all of the required lessons, as Table 5.2 shows. For example, on the Word Attack test, successful clients averaged 15.5 points higher at exit, while those who left for other reasons (e.g., administrative removal or early release) averaged an increase of 11.2. It should be noted that there was a significant difference at intake between the two groups on eight of the nine tests administered. This is an important factor for those providing services to consider when addressing the needs of students.

As discussed in Chapter 4, at intake, clients who had decoding difficulties scored consistently lower (on 6 of the 9 tests) than those with comprehension problems. In addition, those with comprehension problems received a significantly greater amount of treatment hours (a factor that could be related to the fact that more students at Camp Barrett had this type of problem). At exit, those with comprehension difficulties made significantly greater gains on three of the tests (GORT Rate, GORT Fluency, and GORT Comprehension), but both groups made comparable gains on the remaining tests (not shown).

**Table 5.2**  
**CHANGE IN TEST SCORES BY TREATMENT CLIENT EXIT STATUS**

| <b>Test</b>                 | <b>Successful</b> | <b>Other Exit Reason</b> |
|-----------------------------|-------------------|--------------------------|
| Word Attack*                | 15.5 (9.9)        | 11.2 (8.1)               |
| Wide Range Reading*         | 10.2 (8.5)        | 6.0 (7.4)                |
| Peabody Picture Vocabulary* | 8.9 (9.8)         | 5.5 (7.9)                |
| Wide Range Spelling         | 4.9 (8.0)         | 3.8 (5.1)                |
| Oral Directions*            | 2.4 (2.4)         | 1.6 (2.1)                |
| GORT Accuracy*              | 2.3 (1.7)         | 1.2 (1.4)                |
| GORT Comprehension*         | 1.8 (2.3)         | 1.1 (1.8)                |
| GORT Fluency*               | 1.8 (1.7)         | .7 (1.0)                 |
| GORT Rate*                  | .9 (1.1)          | .2 (0.7)                 |
| <b>TOTAL</b>                | <b>124</b>        | <b>54 - 56</b>           |

*\*Significant difference in scores between the two groups.*

*NOTE: Standard Deviations are shown in parentheses. Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

**Table 5.3**  
**CHANGE IN TEST SCORES BY INITIAL PROBLEM TYPE**

| <b>Test</b>                | <b>Decoding</b> | <b>Comprehension</b> |
|----------------------------|-----------------|----------------------|
| Word Attack                | 14.7 (8.8)      | 13.7 (10.4)          |
| Wide Range Reading         | 9.0 (8.1)       | 8.9 (8.8)            |
| Peabody Picture Vocabulary | 7.2 (8.9)       | 8.6 (9.9)            |
| Wide Range Spelling        | 4.0 (6.3)       | 5.3(8.2)             |
| Oral Directions            | 2.1 (2.3)       | 2.3 (2.5)            |
| GORT Accuracy              | 2.0 (1.7)       | 2.0 (1.7)            |
| GORT Comprehension*        | 1.2 (2.0)       | 2.0 (2.3)            |
| GORT Fluency*              | 1.2 (1.4)       | 1.8 (1.7)            |
| GORT Rate*                 | .5 (0.9)        | .9 (1.1)             |
| <b>TOTAL</b>               | <b>91 - 94</b>  | <b>84</b>            |

*\*Significant difference in scores between the two groups.*

*NOTE: Standard Deviations are shown in parentheses. Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

**Table 5.4  
CHANGE IN TEST SCORES BY FACILITY**

| <b>Test</b>                 | <b>Camp Barrett</b> | <b>JRF</b>       |
|-----------------------------|---------------------|------------------|
| Word Attack*                | 16.8 (16.5)         | 12.8 (12.5)      |
| Wide Range Reading          | 10.0 (7.4)          | 8.3 (8.9)        |
| Peabody Picture Vocabulary* | 11.6 (10.8)         | 5.8(7.7)         |
| Wide Range Spelling*        | 8.7 (8.9)           | 2.3 (4.9)        |
| Oral Directions*            | 3.1 (2.6)           | 1.6 (2.1)        |
| GORT Accuracy*              | 2.4 (1.8)           | 1.7 (1.6)        |
| GORT Comprehension          | 2.0 (1.9)           | 1.4 (2.2)        |
| GORT Fluency*               | 2.0 (1.8)           | 1.2 (1.4)        |
| GORT Rate*                  | .9 (1.0)            | .6 (1.0)         |
| <b>TOTAL</b>                | <b>63 - 64</b>      | <b>114 - 116</b> |

*\*Significant difference in scores between the two groups.*

*NOTE: Standard Deviations are shown in parentheses. Cases with missing information not included.*

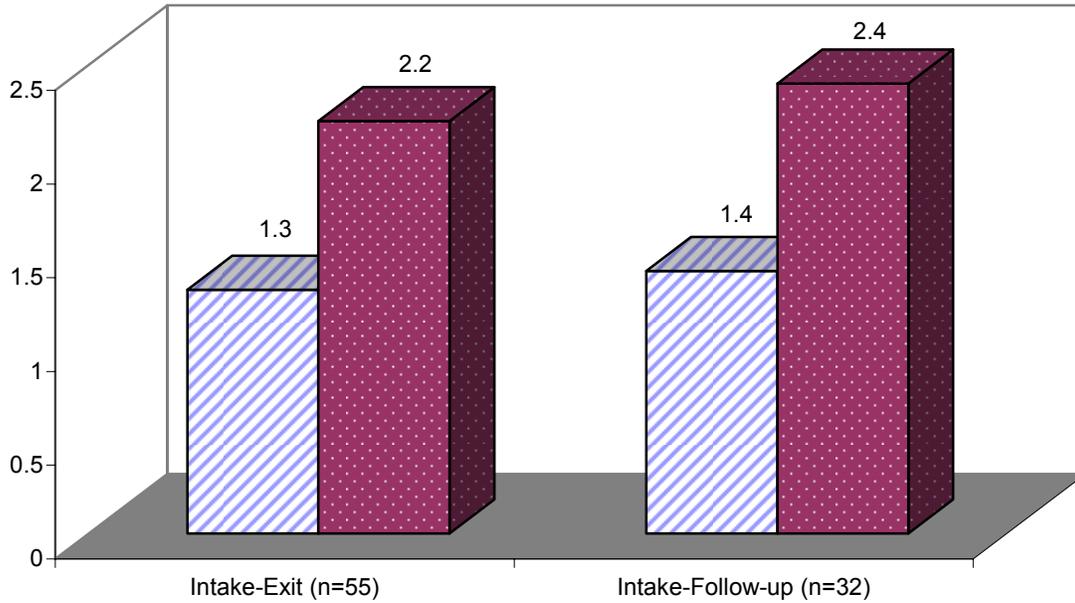
*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

Finally, students at Camp Barrett also showed significantly greater improvement on seven of the nine tests, compared to students at JRF (Figure 5.4). The average scores for each camp only differed significantly for the Word Attack test at intake, with Barrett students testing lower than JRF students (82.3 and 86.4, respectively). By program exit, Barrett students average Word Attack test score (101.9) surpassed the average score for JRF students (93.1) on that same test. Again, this pattern of results could be related to the fact that students at Camp Barrett were more likely to successfully complete the program and received more treatment than those at JRF.

### **Did Lindamood-Bell® Clients Demonstrate Better School Performance After Program Participation?**

School performance was the second outcome measure of interest in this study. Specifically, information related to the youth's grade point average (GPA), suspensions from school, and attendance in the past 30 days were compared: at intake, during their first semester in school after leaving the facility, and during the one-year follow-up (approximately six months later). Unfortunately, obtaining access to reliable records was difficult, which resulted in a very small number of cases for analysis, especially for the comparison group. Because of this, comparisons over time are made for all clients in the treatment group, regardless of their exit status.

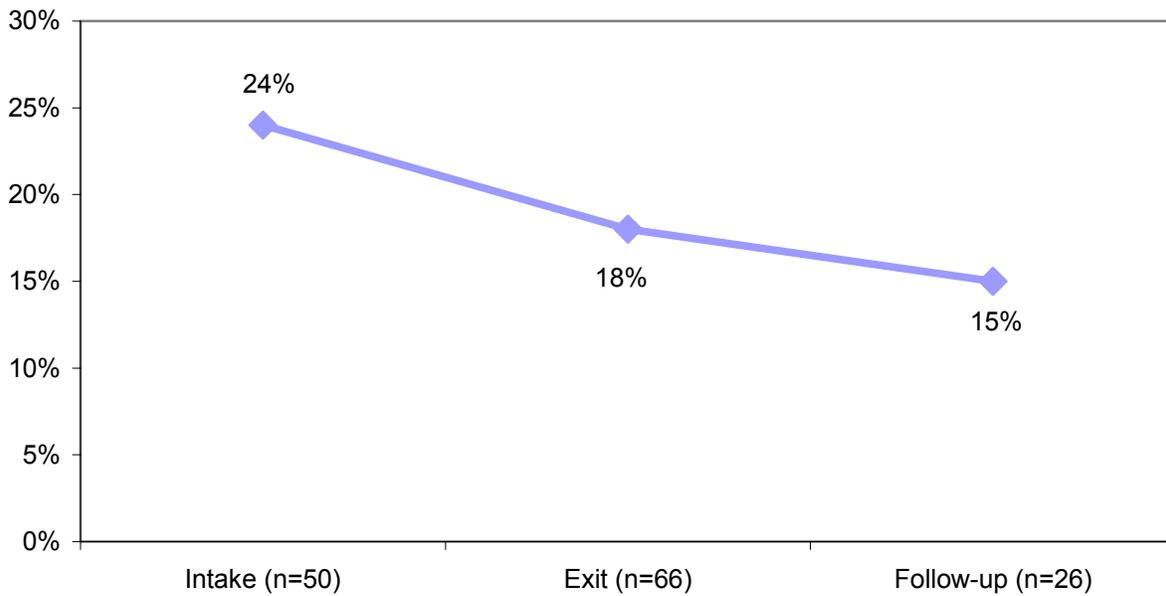
**Figure 5.10**  
**TREATMENT CLIENTS' CHANGE IN GRADE POINT AVERAGE**



NOTE: Cases with missing information not included.

SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

**Figure 5.11**  
**TREATMENT CLIENTS SUSPENDED FROM SCHOOL**



NOTE: Cases with missing information not included.

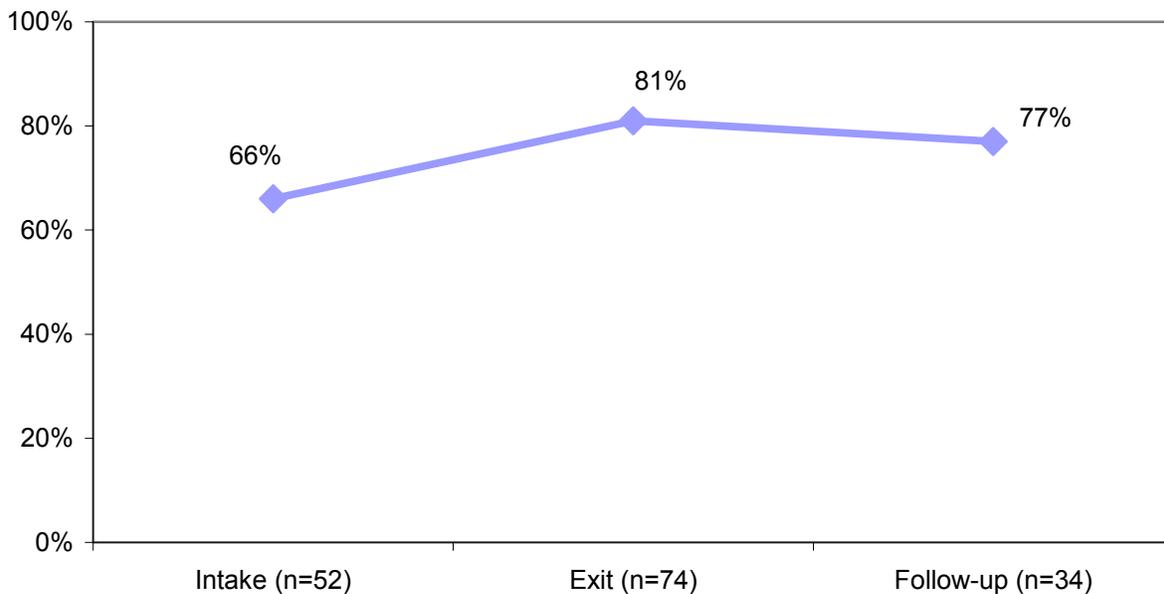
SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005

Client GPA was the piece of information most reliably available for students. Figure 5.10 presents the change in GPA for the 55 students who had a matched intake and exit GPA available, as well as the change for the 32 who had an intake and follow-up GPA available. As this figure shows, the average GPA increased significantly for both groups (from 1.3 to 2.2 and 1.4 to 2.4) after completing the program ( $t(54) = -5.69$  and  $t(31) = -3.15$ ). In addition, this pattern was consistent when one considers the average GPA that was available for all clients (1.3 for 113 at intake, 2.1 for 75 at exit, and 2.4 for 41 at follow-up) (not shown).

Matched information for suspensions during that time period was available for only a small number of clients. Because of this, data presented in Figure 5.11 are for all clients for whom this information was available. As the figure shows, a smaller percentage of clients were documented as having any suspensions over time, decreasing from 24 percent at intake to 18 percent at exit and 15 percent at follow-up. However, these data should be interpreted with caution because each point in time represents a different set of clients.

Figure 5.12 presents the average percent of days clients attended school out of the past 30. Again, a small number of cases prohibited matched analysis. As this figure shows, clients attended a greater percentage of days in the exit period (81%) and the follow-up period (77%), compared to at intake (66%).

**Figure 5.12**  
**AVERAGE PERCENT OF DAYS TREATMENT CLIENTS ATTENDED SCHOOL**



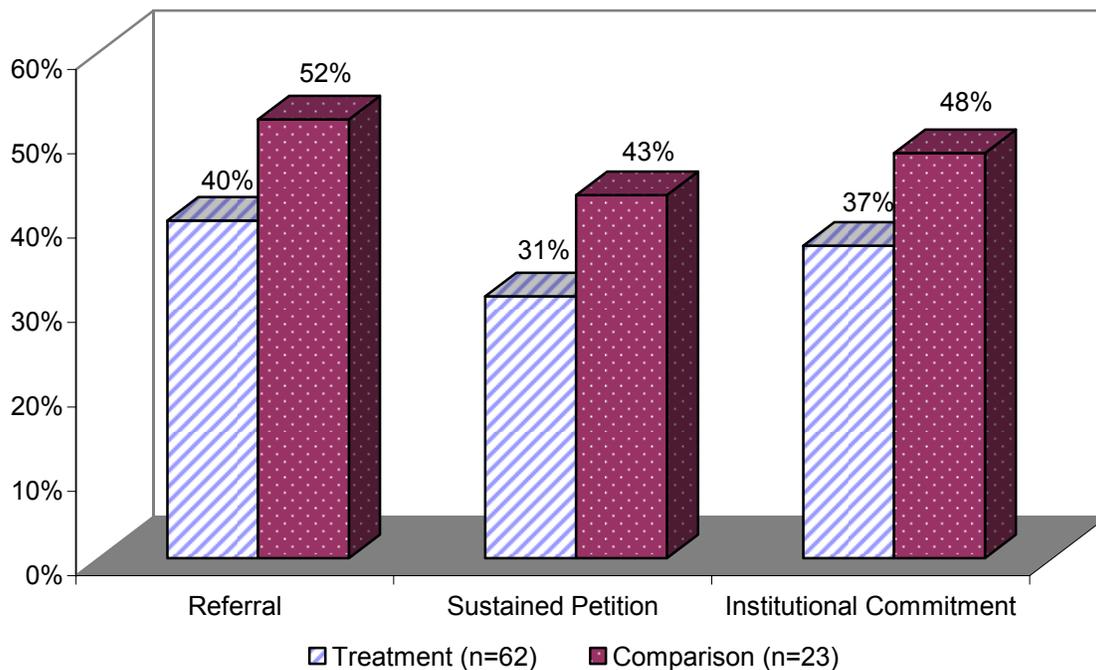
*NOTE: Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

## Was Criminal Activity for Successful Lindamood-Bell® Clients Decreased?

Information regarding the treatment and comparison groups' contact with the juvenile justice system following release from Camp Barrett or JRF was tracked up to one year later. In addition to collecting statistics on how many had a referral to probation, the number of sustained petitions and institutional commitments was also collected. Overall, 62 youth in the treatment group and 31 in the comparison group were tracked for this amount of time – the rest either turned 18 years old before the end of the follow-up period or exited the facility after August 2003 (data collection was completed in August 2004). As Figure 5.13 shows, the treatment group had less contact with the juvenile justice system during the one-year follow-up period using all three of these measures, but these differences were not significant. Specifically, about two in five youth in the treatment group had a referral to Probation for a new charge during this period, and about one in three had a sustained petition and a new institutional commitment.

**Figure 5.13**  
**JUVENILE JUSTICE OUTCOMES DURING FOLLOW-UP**



*NOTE: Cases with missing information not included.*

*SOURCE: SANDAG's Lindamood-Bell® Center in a School™ Final Evaluation Report, March 2005*

## **SUMMARY**

As part of the impact evaluation for the Lindamood-Bell® CIS™ project, data were compiled from student assessments and school and juvenile justice records. Results from student testing revealed that treatment clients showed significant gains in all areas, regardless of program exit status. School records for those who received program services showed that many had higher grades and were attending school on a more regular basis. In terms of juvenile justice contact, clients were less likely to recidivate than the comparison group, but this difference was not significant.

# **CHAPTER 6**

## **CLIENT INTERVIEWS**



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## **CLIENT INTERVIEWS**

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### **INTRODUCTION**

As part of the research process, 21 interviews were conducted with clients approximately six months after they were randomized to receive Lindamood-Bell® services. Descriptive statistics from these interviews are provided in this chapter, followed by more qualitative summaries about each of the 21 clients with whom research staff met. Please note that all names and other identifying information have been changed to protect the identity of these individuals.

### **CLIENT INTERVIEW OVERVIEW**

#### **Current School Status**

At the time of the interview, most of the clients (17 of the 21) reported that they were currently enrolled in school. Two of the four who weren't enrolled reported that they were studying to take the GED, one was in jail, and the other said he was going to join the military. When asked how many schools they had been enrolled at in the past 12 months, the mean was 2.7 (range 1 to 5), which included being enrolled at Camp Barrett or the Juvenile Ranch Facility (JRF).

#### **Change in School Performance**

All of the youth interviewed reported positive changes in their academic performance after participating in the program. For example, when asked to describe their grades prior to participation, 12 of the 21 youth said they got Ds, Fs, or were not enrolled at all; 7 of those enrolled said they had a lot of unexcused absences in the prior 30 days; and 7 had gotten into trouble for their behavior at school (resulting in detention, suspensions, and expulsions). In contrast, when asked about how they were doing in school now, ten said they were getting mostly As and Bs; only one said he had a lot of unexcused absences; and four had gotten into trouble at school for their behavior.

#### **Client Perception of Parental Involvement**

Clients were asked a series of questions about their parents' involvement in their education, as well as their families' history of completing high school and higher education. According to the clients, most of the parents (14 of 21) asked their child if he was going to school "very often" or "often", but fewer (8) asked about their grades. In addition, nine of the clients reported that their parents never helped them with their homework. Twelve of the clients said that their parents had not graduated high school or that they did not know if they had and three said their parents were college or vocational school graduates. Of the 15 youth with an older sibling, 10 reported that his sibling(s) had graduated from high school or earned a GED and 1 said that his sibling had graduated from college.

## **Future Goals**

Many of the clients reported that participating in the program had led to them to having more positive goals for themselves. Twenty of the clients said they plan to graduate from high school or get a GED and 13 intended to attend college or vocational school. Four clients reported having career goals for the first time.

## **Program Perception**

About half of the clients (12) said that they did not want to participate in the program when they first heard about it. Some of the common perceptions were that it would be too much work or that it was for "stupid people." Despite this initial skepticism, upon completion 14 of the clients said the program was "very helpful" and the other 7 said it was "somewhat helpful" in improving their reading. In addition, 17 reported that what they learned in the program was helping them in their school classes now and 12 said it was helping them in life in general. Twelve of the clients reported feeling that school was easier now and 6 said they like school more than they used to.

## **Feelings Regarding Reading**

About two of every three clients (14) said that they read more often for pleasure than they used to. In addition, clients also gave themselves higher ratings in terms of reading, with 20 saying their reading skills were better than they used to be, 18 said they could remember more, and 18 said they could understand more. When asked to describe how the program experience was overall, 11 said "very good" and 9 said "good." Sixteen of the clients indicated that they would consider attending the program if it were available outside of the rehabilitation facility.

## **CLIENT STORIES**

### **Arthur**

Arthur is a 17-year-old who participated in the Lindamood-Bell® program at JRF. Before entering the program, he received mostly Fs in school, had "a lot" of unexcused absences, and was suspended and expelled. According to Arthur, he is now getting mostly As and Bs and has not been in trouble at school since finishing the literacy program. Arthur said that his parents "rarely" help him with school work because he is "too old and doesn't need help." They do, however, "very often" show interest in his school performance. After having heard that it was a good program, Arthur was looking forward to it, and found it "very helpful." Arthur felt that the most helpful result of participation was being able to visualize what he was reading and therefore understand it better. Arthur feels that the program has made school "easier" and he reports that his goals for the future are different since his participation in the program. During the interview he stated, "Before the program I didn't care, and now I have career goals and care about doing good."

## **Dan**

Dan is a 17-year-old who participated in the Lindamood-Bell® program at Camp Barrett. Before entering the program he reported getting mostly As and Bs, not having many absences, and not getting into trouble at school. Dan reported that his parents are “somewhat” interested in his school performance but that they “never” help him with his school work because they do not understand the work. He reported that his school and career goals have remained about the same since his participation in the program. Before beginning the program, Dan thought it was for “retards” and that it would not help him, but he later found it “very helpful.” He said the most helpful thing was learning about “pronouns and connections.” Dan said he can now read to his younger sisters and teach them what he learned in the program.

## **Justin**

Justin is a 17-year-old who participated in the Lindamood-Bell® program at Camp Barrett. Thirty days prior to entering the program, he did not attend a school that recorded grades or absences. Justin said that his parents “never” help him with school work because “he doesn’t need help.” He also said they only “sometimes” inquire about his school performance. Justin had heard nothing about the program prior to his entry, but had preferred to be in regular classes. In the end he reported the program was “somewhat helpful” in that it taught him how to read longer words by “breaking them into pieces.” Justin recommended “making the hours longer for each session.” He also said the program changed his career goals - he now wants to go to college and be in the FBI.

## **José**

José is a 17-year-old who participated in the Lindamood-Bell® program at JRF. Before he was in the program he averaged Cs in school, had “a lot” of absences, and was suspended from school. José said his grades now are mostly As and Bs, but he still has “a few” absences and has been suspended for fighting. He reported that his parents are very interested in what he is doing, but rarely understand his school work enough to help him with it. José thought the program was “special ed” and all of his friends thought it was stupid. He did not want to be in the program at first, but later decided that it had been “very helpful.” The most helpful part, he said, was learning to “break up words, spell better and how to pace myself and read slower to understand what I am reading better.” José feels that the program has changed his goals for school. As he stated during his interview, “I want to do better now and have more patience in school.”

## **Samuel**

Samuel, an 18-year-old who participated in the Lindamood-Bell® program at Camp Barrett, was not enrolled in school before entering camp, and was making very few strides toward getting his GED. He said both his career and school goals have changed since the program. “I started to care about getting my GED, and I think more about getting a job; I didn’t think about it before,” he said. Despite hearing that Lindamood-Bell was for “retarded people,” Samuel wanted to try out the literacy program. He thought it would “make the days go by faster.” After completing the program, he stated that it was “very helpful,” especially with the pronunciation of words. The classes were different than any others he had taken because “it goes back to kindergarten stuff, using cards and

boxes," he said. If the program were free, Samuel said he would like to attend outside of camp, and ended his interview with the simple statement, "It worked."

## **Edgar**

Edgar, 17 years old, participated in the Lindamood-Bell® program at Camp Barrett. Edgar noticed a change in his school attitude and performance since being in the program. Prior to participating, he averaged Cs, had "a lot" of absences, and didn't really care about school. His grades improved to mostly As and Bs and he reported not having any absences. Edgar said his parents never help him with his school work, but suggests that they would help if he asked them to. Like so many, Edgar also heard the rumor that Lindamood-Bell was a program for "retarded people," but he wanted to experience it for himself anyway. He felt the program was "somewhat helpful." He said the drawback was that, "We had to go everyday for two months." When asked what was particularly helpful about the program, he replied that the teachers taught a lot more slowly and that he can now "read better and get things done faster in school." Edgar reported that, "It's too expensive to pay for the program outside of camp," otherwise he would want to continue the program post-release.

## **Alex**

Alex is 16 and lives in a group home where he does not currently receive letter grades or attendance records. Alex stated that his mom often inquires about his school performance, but never helps him with his work because she is not at the group home with him. When he first heard about the Lindamood-Bell® program at JRF, he did not want to participate because of the extra work it would require. He later stated that the literacy program proved to be "very helpful" because "They broke down the words so I could understand the meanings and how to read them." This program was different than other school classes because, "they paid attention to me and took time to help me," he said. The things Alex learned in the literacy program have helped him outside of school as well, he said, "being able to read signs and things everyday. It also helps me use the bus better."

## **Carlos**

Carlos is a 17-year-old who attended the Lindamood-Bell® program at JRF. Before entering the program he was averaging Ds and missing "a lot" of school. He is now doing full-time labor for a plumbing company while enrolled in a school where he earns credit only. Carlos reports that the literacy program has changed his goals for his future. "I want to finish school now and get a job. I care about my future now." Carlos stated that the program facilitators "spend more time with you and teach you one on one. They show you how to do the work instead of just telling you to do it." Most helpful was learning to divide up the big words in order to pronounce them and spell them. When asked for a final comment about the literacy program Carlos replied, "I learned at the program to read until I find the answer, and not to give up."

## **Miguel**

Miguel is a 16-year-old who attended special education classes beginning in the fifth grade. Prior to his participation in the Lindamood-Bell® program he was receiving Fs in school and frequently got

in trouble for being disruptive. When asked about his parents' involvement in his education, he stated that they "never" help him with his school work because, "they don't speak English." When Miguel first heard about the literacy program, he thought it was going to be a "special class, like for retarded (kids)," but he wanted to be in the program "because it gave me something to do besides go back to the dorms." After participating in the program, Miguel's grades improved to Cs and he reported he had no behavior issues at school. He said the "somewhat helpful" program aided him with "pronunciation and also to look at the entire word and to stop at the end of a sentence." He now pays more attention in class and remembers what he reads. If possible, he would attend the program outside of camp and said, "It helps improve reading skills a lot."

## **Jake**

Jake is 18. While he should be in the eleventh grade, he is no longer enrolled in school because he wants to get a job to support his child. He stated that the program helped him "re-evaluate his life and make better decisions," but he also said he does not plan to graduate from high school and intends to join the Navy. When he first heard about the program he thought it was for "slow people who didn't read well or who didn't speak English" and he did not want to be in the program because he felt he could already read "okay." Jake admitted that the program turned out to be "very helpful" and that it was "fun" and "enhanced" his vocabulary while helping him with prefixes and suffixes. Outside of school, he said the program was helpful in that, "I was in the class with other races and I can now talk to people better." He would participate in the Lindamood-Bell® program outside of camp and says, "it's a good program for everybody."

## **Henry**

Henry is a 13-year-old who is currently in the eighth grade. Prior to entering JRF and the Lindamood-Bell® program, he was not enrolled in school. However, he is now attending school, receiving mostly Cs, and, despite attendance problems, still plans to graduate high school and get a job. Initially, Henry thought the literacy program was going to be boring and he didn't think he needed the help. Having been in special education classes previously, Henry stated that Lindamood-Bell was different because they, "had word cards, gave more attention, and went slower than regular school."

## **Joe**

Joe is 18 years old and was not enrolled in school immediately before entering Camp Barrett and participating in the Lindamood-Bell® program. Since leaving Camp Barrett, he has been working on his GED and has one more class to go. Joe said he didn't know much about the literacy program before starting it and thought it was "just another program I had to do up there (at camp)." He said he "reads better" now and "more often" for fun. He also said the program has "helped with job applications." He finished by saying "it's a good program" and that he would attend it outside of camp if available.

## **Ricky**

Ricky is a 17-year-old who participated in the Lindamood-Bell® program at JRF and seems to have learned a lot from the experience. Before the program, he received Fs in school and had "a lot" of unexcused absences. His goals for school are different now because he "pays attention to what

teachers say," whereas before he didn't care. He described the program as "very helpful" and specified that they helped him "find the main idea of things." Ricky felt the Lindamood-Bell® teachers actually "taught you how to do the work instead of just telling you to do it." He also said that the repetitiveness of the program lessons "made things stay with me" and even "helped me on a test I had today." When asked how to make the literacy program better he suggested they, "not have it just in camp but have it in schools too."

## **Phil**

Prior to the time Phil spent at JRF and in the Lindamood-Bell® program, his grades were mostly Cs. While he did not have a lot of unexcused absences, he had been expelled for fighting. At the time of the interview, the 15-year-old was enrolled in the tenth grade and was receiving mostly As and Bs. As far as his school goals are concerned, he said he "didn't like school at all (before the program)" and now he would "rather go to school than be out on the streets." He learned about run-on sentences and stopping at periods and this helped him understand more of what he reads. He felt the program was "very helpful" and that the small class sizes kept him away from his friends and allowed him to really focus on his work.

## **Oscar**

Oscar is a 16-year-old who participated in the Lindamood-Bell® program at JRF. Before participating in the program, he was receiving failing grades and skipped school "a lot". At the time of the interview, he was in the tenth grade and although he was still detained in Juvenile Hall, his grades were mostly As and Bs and he had fewer unexcused absences. When first told of the literacy program, Oscar did not want to participate because he knew it would entail a lot of reading and he didn't like reading. However, his time in the program helped make school "easier" for him. When asked how the program helped him in school he stated, "I am not shy when I read out loud now and I can read a lot faster. I know how to read bigger words now too." In general, he said, "It has helped my reading level increase with everything."

## **Jeff**

Jeff is 18 years old. He participated in the Lindamood-Bell® program while at Camp Barrett and although he first thought the program would be "boring," he stated that in the end it changed both his school goals and his career goals. The literacy program taught him how to "write faster, use longer and more proper words." He remembered the "e" rules and how to break down words and sound them out and claimed he "did better on tests and wasn't ashamed to read out loud anymore." He said that after the program, he "wanted to go to school and do well." When asked how his career goals were changed, he said, "I want to write a book about my life; to help people to stay away from gang life."

## **Trevor**

Trevor is 18 years old. Before participating in the Lindamood-Bell® program he was getting Fs in school but has brought his grades up to mostly As and Bs since then. Like so many, Trevor thought Lindamood-Bell was for "retarded people" and said everyone called it "the magic school bus." Despite his lack of desire to be in the program, in hindsight he felt that "everything was helpful." He said he uses what he learned "all of the time" (especially the "Super E"), he reads for fun "more

often," and school is "easier" now. Overall, he said, "it helped me to read better and to pronounce everything" and it "taught me lots of stuff I didn't know. It was a good program."

## **David**

David is a 17-year-old eleventh grader who improved his grades from Ds to mostly As and Bs after participating in the Lindamood-Bell® program at JRF. Not only were his grades improved, but his goals for school and for his career were changed as well. After the literacy program, David talked about his "confidence in school" and how it had improved due to his new ability and desire to read out loud in class and to follow along and understand what is read. He said of this change, "I used to hate reading out loud in class and now I volunteer to do it. They helped me picture what I am reading and now I can understand it." According to David, Lindamood-Bell was able to help him because they created, "a better learning environment and staff made it easier and more fun to learn."

## **Johnny**

Johnny is a 14-year-old who participated in the Lindamood-Bell® program at JRF. Before entering camp, he received mostly As and Bs and did not have many absences, but he had been given an out-of-school suspension. Since finishing the literacy program, Johnny has not been in trouble for his behavior at school. He reported that his parents never help him with his homework because he never gets any, but that they very often inquire about his grades and attendance. Before entering the program, he didn't want to participate because he had heard it was long and boring and feared it would interrupt his recreation time. He later found it to be "very helpful." When asked what was most helpful about the program, he said they taught him "to pace himself and to read slower to get more information." He said he now remembers more of what he reads.

## **Ben**

Ben is a 16-year-old who participated in the Lindamood-Bell® program at JRF. Before he was in the program, he averaged Cs in school, had "a lot" of unexcused absences, and was suspended from school. According to Ben, his parents help him with his school work and are interested in what he is doing. Ben reported that he was interested in the program when he learned about it and that he found it "very helpful." When asked what was most helpful, he reported that it taught him how to pronounce words in English better. Ben feels that the program helped him in his school classes and he reports that his goals for the future are different since participating in the program. As he stated during his interview, "I now want to get my diploma and before I didn't care if I got one."

## **Hector**

Hector is an 18-year-old who participated in the Lindamood-Bell® program at Camp Barrett. Hector reported getting As and Bs, having no absences, and not getting into trouble at school, both before and after being in the program. He said his parents "very often" inquire about his school performance, but never help him with his work because they don't speak English. Hector reported that he was interested in the program when he learned about it and that he found it "very helpful." When asked what was most helpful, he reported that it improved his reading and

vocabulary. He feels the program, with all the individual attention he received, has made school easier for him because he now wants to read for school and he understands what he reads.

**CHAPTER 7**  
**SUMMARY AND CONCLUSIONS**



# CHAPTER 7

## SUMMARY AND CONCLUSIONS

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### SUMMARY

In September 2002, a literacy program for juvenile male wards was implemented in San Diego County through a partnership between the Juvenile Court, the San Diego County Office of Education, the District Attorney's Office, and the Probation Department. Previous research has shown that many juveniles fail to return to school after being released from detainment and that educational training during detainment is one of the most effective forms of crime prevention. As part of the project, 198 adjudicated juvenile males received program services, with about one in five of those screened eligible. Many of these youth entered the program below grade level, had a history of truancy problems, and had a negative view toward school. Through the Center in a School™ project, participants received approximately 89 hours of intensive, specialized literacy services. Positive outcomes measured through standardized tests and records searches revealed that participants achieved significant gains in their decoding and reading comprehension skills, were doing better in school, and were slightly less likely to have contact with the juvenile justice system after completing the program. Specifically, some of the notable improvements clients made included:

- Showing significantly greater gains on literacy test scores than comparison group students based on statistical test results;
- Increasing literacy test scores from 0.7 on the GORT Rate test to as much as 14.2 points on the Word Attack test from intake to exit after approximately seven weeks of treatment;
- Improving school performance after program participation with the grade point average increasing to approximately 2.4 at follow-up and 2.2 at exit from 1.4 and 1.3, respectively at intake;
- Being less likely to have a referral, sustained petition, or institutional commitment during follow-up compared to the comparison group.

### RECOMMENDATIONS

The following observations, conclusions, and recommendations are based on the process and impact evaluation results described in this final report.

- Fewer clients (18 percent) were screened as eligible for this program than originally anticipated. This may have been at least partially related to inconsistencies in screening test administration as well as miscommunication between project partners. Delays and inaccuracies in the tracking of eligible students also contributed to this. To avoid these issues in future projects, programs should ensure adequate start-up time and allocate sufficient resources to identify students in need of services. The use of an appropriate screening process and tools would also be of value.

- Having an aftercare component would have been helpful to ease the youths' transition back to the community. The results of the outcome evaluation showed the significant gains these clients made. However, many returned to impoverished and challenging environments where education was not valued by their peers, and their new teachers were unaware of the skills they had gained while detained. The need for transition or reentry services has also been noted by Rutherford, Griller-Clark, and Anderson (2001): "Services are needed that link correctional education program to the student's previous public school program, as well as to the educational and community services needed to support the offender following incarceration. Transition is generally the most neglected component of correctional education programs."
- Providing the full course of instruction was difficult with specified commitment times that were relatively short in length, coupled with the requirement to form small groups with identical needs. The first finding mentioned has been supported by others in the field (e.g., Rutherford, Griller-Clark, and Anderson, 2001), who note that "because the placement and length of stay for delinquent youth in detention centers are determined by the juvenile court rather than by educators, appropriate and comprehensive education services rarely are provided" (p. 232). Again, by providing aftercare services, it would be more likely that all students who need these services receive them.
- Many of the clients who were interviewed gave the program very high ratings. However, many also said they had a negative view of the program initially, either because of stigma associated with participating in it or because of the large amount of work they thought they would have to do. If the program is voluntary, there should be a marketing and public education campaign conducted to ensure it doesn't get a bad reputation among potential clients.
- Bringing a new program into an institutional school setting can pose challenges when two different cultures meet one another. Ensuring that staff identified for training in this model make a long-term commitment and pursue certification in the Lindamood-Bell® so that program fidelity can be maintained.
- While the original goal of the project was to train school staff so they could provide literacy instruction independently, this was not totally realized for reasons discussed in the report. Other sites that have the same goal should insure that sufficient numbers of appropriate staff are trained and that on-going technical assistance is available.
- It was disappointing to have the program terminated prematurely due to funding difficulties. Other sites considering such a program should acknowledge during the initial phase that resources are limited and different entities may differ regarding how those resources should be allocated. In San Diego, even though the project team met regularly and were committed to the community's youth, they ultimately were unable to find dedicated resources to maintain the program at its current level.

**APPENDIX**  
**LINDAMOOD-BELL<sup>®</sup> PROGRAM DESCRIPTIONS**



## STEPS OF THE LIPS® PROGRAM

### 1. Setting the Climate

Purpose: To help students know what they will be doing and why, so that they can participate actively in the learning process.

Concept: Learning how to see, hear, and especially feel sounds in words makes learning to read and spell much easier. The first step in helping students engage themselves actively in the learning process is helping them to understand something about that process.

### 2. Identifying and Classifying Speech Sounds by Place and Manner of Articulation

Purpose: To help students experience the articulation of speech sounds on a conscious level; to help them discover the distinctive oral-motor features of each sound and the relationships and contrasts among sounds, because contrast aids perception.

#### a. Introducing, Practicing, and Tracking Consonants

- i. Pairs – Students discover oral-motor-kinesthetic features of sounds that can be classified into *pairs* where two sounds have the same mouth action and one is quiet, one noisy.
- ii. Practice Pairs – Students practice the pairs at these levels:
  1. *Assemble* – Pictures and letters are scrambled; students match them up.
  2. *Receptive practice* – With pairs assembled, teacher gives sound; students point to the letter or picture and label it.
  3. *Expressive practice* – Still with pairs assembled, teacher points; students say the sound and label it.
- iii. Groups – Students discover oral-motor-kinesthetic features of sounds that can be classified into *groups* sharing one articulatory feature but having different mouth actions.
- iv. Practice Groups – Students practice the groups through assembly, receptive, and expressive activities. Additional optional ways to practice may be used as well.
- v. Borrowers, maybe – Students may be introduced to Borrowers ('c', 'x', 'qu', 'y') – that is, letters that don't have their own sounds but borrow the sounds of other letters. The teacher may choose to introduce Borrowers later when they are needed in Spelling and Reading.
- vi. Tracking, maybe – Students may, if the teacher determines they need this step, learn to track sequences of two or three sounds by representing them with mouth pictures and then colored blocks.

#### b. Introducing, Practicing, and Tracking Vowels

- i. Discovery – Students discover how to compare the oral-motor-kinesthetic features of vowels: to organize them into the Vowel Circle based on tongue and chin positions and to label the mouth shapes: Smile, Open, Round, or Slider.
- ii. Practice – Students practice vowels at these levels:
  1. *Assemble* – Pictures and letters are scrambled; students reconstruct the Vowel Circle.
  2. *Receptive practice* – With the Vowel Circle assembled, teacher gives sound; students point to the letter (or picture) and label it.
  3. *Expressive practice* – Still with the Vowel Circle assembled, teacher points to a symbol; students say the sound and label it.
- iii. Tracking, maybe – Students may, if the teacher determines they need this step, learn to track sequences of two or three sounds by representing them with mouth pictures and then colored blocks.

3. Simple Syllables and Words: Tracking, Spelling, and Reading
  - a. Track with Mouth Pictures, Then Blocks
    - i. Student repeats words after teacher
    - ii. Student touches pictures, says sounds in old word and new word
    - iii. Student makes the change with the pictures, labeling each sound that changes  
Use mouth pictures just long enough to establish the tracking process. Tracking with blocks will continue until students' phonemic awareness is auditory based rather than having to be processed through articulation.
  - b. Spell and Read with Tiles – With letter tiles do mostly simple syllables, overlapping to a few complex syllables.
    - i. Introduce and practice four basic expectancies – final 'e', two vowels go walking, 'c' and 'g' sounds.
  - c. Spell and Read Lists – Overlap to reading and spelling lists, after brief practice with chains. Explore additional expectancies when they are encountered.
  - d. Check and Practice Sight Words – Choose an appropriate list for your students' age and vocabulary, and check which of those words they can already read and spell. Practice sight *reading* of words on flashcards. Practice sight *spelling* of words with a personal spelling list and symbol imagery.
  
4. Complex Syllables and Words: Tracking, Spelling, and Reading
 

In this complex syllable level, the processes remain the same but the words get more difficult in structure. Complex syllables have two or more consonant sounds next to each other, making them significantly harder to feel than when they were separated by a vowel at the simple syllable level.

  - a. Briefly track complex syllables with mouth pictures, and then transition to tracking with blocks, working through this progression: CCV/VCC; CCVC/CVCC; CCVCC
  - b. Briefly overlap into Reading and Spelling of complex syllables in tiles, then leave tiles behind for pencil and paper.
  - c. Have students show likely options for words that can be spelled more than one way.
  - d. Continue to reinforce expectancies that have been discovered; explore additional expectancies when they are encountered during Reading and Spelling.
  - e. Read and spell sight words that are complex in structure.
  - f. Begin to overlap into multisyllable processing.
  - g. Begin to overlap into Reading and Spelling in context.
  
5. Multisyllable Words: Tracking, Reading, and Spelling
  - a. Multisyllable Concept and Counting – Students discover that word can have more than one vowel sound, thus more than one syllable. They learn to tap out the syllables and represent them with colored squares.
  - b. Tracking syllables with Felts – Once students can count one to three syllables accurately, they learn to track whole syllables being added, omitted, and substituted in a chain of words.
  - c. Detecting the Accented Syllable – Students learn to determine which syllable is accented in a spoken word by listening for higher pitch, strong emphasis, and clearer vowel sound in one of the syllables.
  - d. Tracking with Felts and Blocks – Students judge whether a whole syllable changes, or whether only one sound is being changed in the accented syllable.

- e. Spelling and Reading with Syllable Cards – Students read and spell words by manipulating cards with syllables on them; they are introduced to flexing the vowel sound in the accented syllable, and to the spelling of common prefixes and suffixes.
- f. Written Spelling and Reading – Students learn to say each syllable as they write it; they learn to visually break words in three easy steps in order to read them; they learn additional orthographic expectancies such as the Ending Grid, where six principles govern the reading and spelling of more than 30 ending syllables. To aid the spelling of schwa sounds, word referencing is introduced where vowel spellings in other forms of the same word can be cross-referenced to solve the schwa problem.

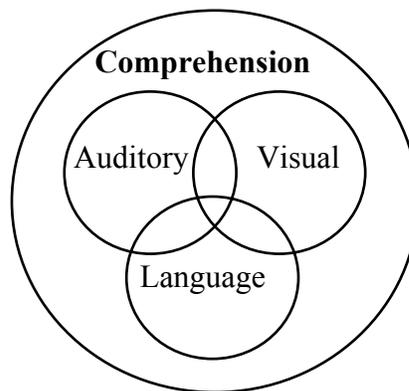
6. Reading for Comprehension and Spelling in Context

Purpose: To develop fluency, comprehension, and self-correction when students are reading in context; to develop proofing and self-correction when students are writing.

As students are moved onto the page, they must begin accessing all these parts of the reading process:

- a. The auditory circle – fluent, automatic phonetic processing
- b. The visual circle – sight recognition of the most frequently occurring words
- c. The language circle – the ability to anticipate words on the page from context and oral vocabulary
- d. The comprehension circle – integration of the content details into a meaningful whole and an ability to tell whether what is being read “makes sense”

The teacher’s questions need to require students to consistently process information from each of these circles to detect and self-correct errors until the integration of that processing becomes automatic.



## STEPS OF THE VISUALIZING AND VERBALIZING® PROGRAM

### 1. Picture to Picture:

The individual describes given pictures. Structure Words of *what, size, color, number, shape, where, when, background, movement, mood* and *perspective* are introduced to provide descriptive elements. By questioning with “choice and contrast,” the teacher stimulates a detailed verbal description of a given picture. The goal is to develop fluent, detailed verbalizing from a given picture prior to requiring the detailed verbalization of a mental image.

### 2. Word Imaging:

The individual describes an image with the assistance of structure words and specific questioning using choice and contrast. The procedure moves from the “personal image” level to the “known noun” level that stimulates detailed imagery for familiar high-imagery words such as clown, doll, Indian, cowboy, etc. The goal is to develop detailed visualizing and verbalizing of the word prior to the visualizing and verbalizing of sentences.

### 3. Sentence Imaging:

The individual next images and describes—visualizes and verbalizes—a sentence containing a previously-imagined noun. The teacher creates the simple sentence, presents the sentence to the individual orally, and questions with choice and contrast to stimulate imagery.

### 4. Sentence by Sentence Imaging:

The stimulation is next directed at assisting the individual with the creation of an *imaged gestalt*. The procedure begins receptively from a short self-contained paragraph, with each sentence read orally to the individual. The individual visualizes and verbalizes each sentence and places a three-inch colored square to represent the imaged sentence. This continues with each sentence of the paragraph. At the end of the paragraph, with approximately four colored squares representing the sentences, the individual gives a “picture summary” by touching and describing his/her images represented by each square. Following this, he or she gives a “word summary” by collecting the colored squares and sequentially summarizing the paragraph while using specific images to assist with retrieval.

### 5. Sentence by Sentence with Interpretation:

As the Sentence by Sentence process is developing an imaged gestalt, the stimulation extends to interpretation and critical thinking. The imaged gestalt is used as the cognitive base for the higher order thinking skills of main idea, inference, conclusion, prediction and evaluation.

### 6. Multiple Sentence Imaging, Paragraph Imaging, and Paragraph by Paragraph Imaging:

The succeeding steps progress from visualization and verbalization to interpretation. The material becomes longer and denser, with the individual decoding or orally receiving the language input. The process requires the individual to visualize gestalts, verbalize summaries, and interpret from both oral and written language.

## STEPS OF THE SEEING STARS® PROGRAM

### 1. Setting the Climate

Purpose: To help students know what they will be doing and why, so that they can participate actively in the learning process.

### 2. Imaging Letters

Begin developing symbol imagery with the smallest unit of language—a letter—to establish a sensory-cognitive base of letter imagery from which to build into syllables. The imagery of a letter symbol should be taught with both the sound and letter name. The two steps of letter imagery are:

- a. See, image, say, and air-write
- b. Hear, image, say, and air-write

### 3. Imaging Syllable Cards

The Syllable Cards step begins developing syllable symbol imagery with visual stimulation—students see a syllable, ranging from simple to complex, and say and write what they imaged. Rather than creating the imagery from an auditory stimulus, this step allows the sensory system to retrieve an image. Once images are visualized and verbalized, students decode the syllable from memory—strengthening both decoding and visual memory for letters. The error handling techniques of responding to the response enhances sensory input. As the students are imaging letters on the syllable cards at the simple syllable level, they are overlapped to the next step at the simple level.

### 4. Imaging and Sequencing Syllables: Syllable Board

Stimulating imagery and sequencing in syllables begins with the Syllable Board, designating the units for letters. As students are presented a chain of syllables, from simple through complex, they write imaginary letters on the board, one letter for each line on the board. Proper error handling is directly related to progress. Starting with a positive and responding to the response is the same for all symbol imagery stimulation and all Lindamood-Bell programs. Practice and pacing are determined by the needs of the student, but in general the best pacing is achieved by overlapping steps.

### 5. Imaging and Sequencing Syllables: Air-Write with a Chain

- a. Teacher says syllables or letters in a chain, extending into CCVCC.
- b. Student says and sometimes writes in the air, beginning to only imagine the letters, and thus hastening the lesson.
- c. Teacher randomly does the symbol imagery exercises:
  - i. Student sees and says the word from memory.
  - ii. Student recalls a specific letter by its order in the syllable.
  - iii. Student says the letters in reverse order.
  - iv. Student sees and says the word after teacher manipulates the letters.
- d. Use English rules and expectancies to teach memory for how words are spelled.  
Purpose: To develop fluency, comprehension, and self-correction when students are reading in context; to develop proofing and self-correction when students are writing.

6. Imaging and Sequencing Syllables: Air-Write *without* a Chain
  - a. Teacher says syllables or letters without a chain, a new word each time, extending into complex syllables.
  - b. Student sees and says and sometimes writes in the air.
  - c. Teacher miscalls the imaged word and student judges and notes error.
    - i. Student sees and says the word from memory.
    - ii. Student recalls a specific letter by its order in the syllable.
    - iii. Student says the letters in reverse order.
    - iv. Student sees and says the word after teacher manipulates the letters.
  - d. More focus on teaching expectancies for memory of common spelling patterns.  
Purpose: To develop fluency, comprehension, and self-correction when students are reading in context; to develop proofing and self-correction when students are writing.

7. Imaging Sight Words
  - a. Use symbol imagery exercises to place categorized words into memory.
  - b. Student sees and says a sight word and sometimes writes in the air.
  - c. Symbol imagery exercises:
    - i. Student sees and says the word from memory.
    - ii. Student recalls a specific letter by its order in the syllable.
    - iii. Student says the letters in reverse order.
    - iv. Student sees and says the word after teacher manipulates the letters.

8. Imaging Spelling
  - a. Capture and Catalogue
  - b. Analyze, Visualize, and Write on the Visual Spelling Chart

9. Imaging, Reading, & Spelling – Two Syllables
  - a. Counting syllables
  - b. Teaching suffixes
  - c. Using the Multisyllable Board for sequencing sounds/letters
  - d. Breaking suggestions
  - e. Breaking, reading, and imaging two syllable words
  - f. Imaging, writing, and breaking for spelling two syllable words
  - g. Teacher miscalls and student monitors and corrects

10. Imaging, Reading, & Spelling – Three Syllables
  - a. Teaching prefixes
  - b. Using the Multisyllable Board for sequencing sounds/letters in three syllables
  - c. Breaking, reading, and imaging three syllable words
  - d. Imaging, spelling, and breaking for three syllable words

#### 11. Integration to Contextual Reading

Contextual reading is an integration of all the Circles; and the act of integrating can be facilitated by questioning imagery to language – whether concept imagery for comprehension or symbol imagery for decoding.

- a. The auditory circle – fluent, automatic phonetic processing
- b. The visual circle – sight recognition of the most frequently occurring words

- c. The language circle – the ability to anticipate words on the page from context and oral vocabulary
- d. The comprehension circle – integration of the content details into a meaningful whole and an ability to tell whether what is being read “makes sense”



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