ECHO

E-Journal for Black and Other Ethnic Group Research and Practices in Communication Sciences and Disorders

ECHO: the Official Journal of the

National Black Association for Speech-Language and Hearing

Volume 3, Number 2 **Fall 2007**

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Table of Contents

To navigate through this document, use the scroll bar in the right-hand column and observe the page indicator at the bottom of the screen.

Cover Page 1

Table of Contents 2

Editorial Board 3

Editor's Notes 4

About the Journal 4

Manuscript Submissions 5

Copyrights and Permissions 5

Sponsoring Organization 5

Current Issue 6

MEDIATED LEARNING AND STUTTERING REDUCTION:THREE CASE STUDIES OF SCHOOL-AGE CHILDREN

(Abstract) 7

(Article) 9

IDENTIFYING THE ADMISSIONS CRITERIA THAT PREDICT SUCCESS IN A MASTER'S-LEVEL COMMUNICATIVE SCIENCES AND DISORDERS PROGRAM AT A HISTORICALLY BLACK UNIVERSITY

(Abstract) 26

(Article) 28

Invited Article

NBASLH AS THE VANGUARD: TOWARD INTERNATIONALIZATION OF CSD

(Article) 46

ECHO

Volume 3, Number 2 Fall 2007

E-Journal for Black and Other Ethnic Group Research and Practices in Communication Sciences and Disorders

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ECHO

Volume 3, Number 2 Fall 2007

E-Journal for Black and Other Ethnic Group Research and Practices in Communication Sciences and Disorders

Editor's Notes

As an electronic journal ECHO provides an economical vehicle for disseminating relevant and timely articles that address the research interests and clinical practice patterns of Communication Sciences and Disorders professionals, particularly those serving Black and other ethnic group populations.

ECHO will continue to use a digital format to introduce the breaking research and clinical methods of scholars and practitioners addressing the communication needs of Black and other ethnic groups. As we merge our efforts with the new technologies, we hope any occasional blunder will be met with your patience and tolerance.

Ronald Jones, Ph.D., Managing Editor

About the Journal

ECHO*: E-Journal for Black and Other Ethnic Group Research and Practices in Communication Sciences and Disorders** is a professional publication that hosts scientific articles on research and clinical practice patterns, which impact racially, culturally and linguistically diverse populations in America. ***ECHO welcomes submissions from any communication science and disorders specialist, researcher and/or scholar, regardless of their race or ethnic background.

Although the National Black Association for Speech, Language and Hearing (NBASLH) has adopted ***ECHO*** as its official journal and will sponsor its publication, the journal remains ecumenical. ***ECHO*** invites submissions from other organizations whose members represent the communication interests and concerns of other racial, ethnic and/or linguistically diverse populations. Submissions to ***ECHO*** may include such topics areas as:

- Scientific research
- Assessment procedures
- Treatment & Prevention techniques
- Cultural, social, professional issues
- Professional issues
- Supervision & Administration
- Other related topics

Contributed manuscripts may take the form of

- Clinical forums and reviews
- Scientific research reports
- Case studies
- Position papers
- Digital presentation
- Letters to the editor
- Other related formats

ECHO

Volume 3, Number 2 Fall 2007

E-Journal for Black and Other Ethnic Group Research and Practices in Communication Sciences and Disorders

Manuscript Submissions

All manuscripts should be accompanied by a cover letter (e-mail) in which the corresponding author:

- Requests that the manuscript be considered for publication;
- Affirms that the manuscript has not been published previously, including in an electronic form;
- Affirms that the manuscript is not currently submitted elsewhere;
- Affirms that all applicable research adheres to the basic ethical considerations for the protection of human or animal participants in research;
- Notes the presence or absence of a dual commitment;
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All manuscripts must be submitted electronically and should follow the style and preparation presented in the Publication Manual of the American Psychological Association (latest edition); see Journal for exceptions to APA style. Particular attention should be paid to the citing of references, both in the text and on the reference page. Authors requesting blind review must specify and prepare their manuscripts accordingly. Manuscript submissions and inquiries should be addressed to: nbaslh@nbaslh.org.

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Current Issue

Mediated Learning and Stuttering Reduction: Three Case Studies of School-Age Children, Nola T. Radford, Jackson State University, Jackson, Mississippi; Jesus Tanguma, University of Texas Pan American, Edinburg, Texas

Identifying the Admissions Criteria that Predict Success in a Master's-Level Communicative Sciences and Disorders Program at a Historically Black University, Hope Curtis Reed, Alabama A&M University, Normal, AL

NBASLH as the Vanguard: Toward Internationalization of CSD, Yvette D. Hyter, Western Michigan University, Kalamazoo, MI

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MEDIATED LEARNING AND STUTTERING REDUCTION: THREE CASE STUDIES OF SCHOOL-AGE CHILDREN

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ABSTRACT

Case studies of two Mexican-American male children, ages 13 years, 7 months and 12 years, and one African-American child, age 10 years are presented to provide evidence of the effectiveness of the Mediated Learning Experience (MLE) to manage stuttering. All three cases represent children who had experienced long-term therapy for stuttering with minimal to no improvement. The article provides a detailed account of the speech-language-pathologist as mediator with a summary of major principles of Feuerstein's MLE (2003) as applied to stuttering.

KEY WORDS: stuttering, Mediated Learning Experience, multicultural

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Introduction

A goal of the current research was to improve the methodology used to examine mediated learning as an effective cognitive intervention for stuttering, particularly chronic stuttering in older children who have experienced meager therapeutic outcomes as a result of behavioral interventions implemented in public schools. A previous case study was limited due to fewer baseline and repeated sampling procedures (Radford, Tanguma, Gonzalez, Nericcio, & Newman, 2005). These limitations were addressed in the current study.

In this article, we explore the outcomes for three school-aged, male clients: an African American, age 10 years, and two Mexican Americans, ages 12 and 13 years. Subjects were referred by school-based clinicians after a general mail-out to local school districts of a flyer to recruit children to participate in a study of mediated learning to reduce stuttering. Clinicians were encouraged to refer children diagnosed with stuttering, age 7 years and older who were making unsatisfactory progress in therapy. The research study was approved by the Institutional Review Board of the University of Texas Pan American and no children were contacted until parents were fully informed and had signed a Subject Consent Form for their children's participation.

Mediated Learning or Instrumental Learning is a complementary framework for behavioral and counseling theories used to treat stuttering (Blood, 1995; Chmela & Reardon, 2001; Ryan, Van Kirk & Ryan, 1995; Schneider, 2002). Our interest in the utility of mediated learning for stuttering reduction began 9 years ago, with two articles since then resulting from case studies to examine application of mediated learning for stuttering therapy (Radford, 2006; Radford, 2002; Radford, Tanguma, Gonzalez, Nericcio, & Newman, 2005). In the field of speech-language pathology, principles of mediated learning are often applied to language assessment and intervention, not stuttering (Bain & Olswang, 1995; Gutiérrez-Clellenn, 2000; Gutiérrez-Cllellen & Peña, 2001; Laing & Kamhi, 2003; Peña & Lidz, 2001). What follows is a discussion of mediated learning and cognitive modifiability as pretext to the discussion of the case studies.

Cognitive Modifiability and Mediated Learning

Reuven Feuerstein (1990; 2003) offers a theory of intelligence with ramifications for some modifications in our perspective of stuttering. For more detailed information about his theory, the reader is referred to Feuerstein's Theory & Applied Systems: A Reader, available through the International Center for the Enhancement of Learning Potential (2003). Feuerstein proposes notions of dynamic assessment rather than conventional testing practices dependent upon standardized assessment. The dynamic approach involves testing-teaching-retesting, with a goal

of changing the individual through mediation to alter the inability to learn, and/or change. Moreover, this view has had an impact on language assessment and treatment not only in special education, but also in speech-language pathology, even though Feuerstein's particular views may not be commonly described in speech-language pathology literature.

Feuerstein views intelligence as a process rather a permanent state or condition. The process of applying intelligence, according to Feuerstein, leads toward higher levels of adaptation. Further, adaptation may be negative or positive, dependent upon the complex interaction among "conditions, capacities, and behaviors" (Feuerstein, 2003) (p. 18). Feuerstein defines adaptation as the changes an organism undergoes in response to novel situations. Therefore, individuals with impairments may be identified by slow and/or limited modifiability. However, the issue of modifiability is clouded when one considers that change will also be limited or maladaptive if the organism or individual has limited access to what Feuerstein describes as the two modalities for learning: direct exposure or Mediated Learning Experience (MLE). Individual differences in the rate of learning as a result of heredity, illness, disease, trauma, environment, personality, and so forth, explain, to some degree, limited benefit from direct exposure. The other barrier to learning, Feuerstein proposes, is the frequency and intensity of MLE interactions.

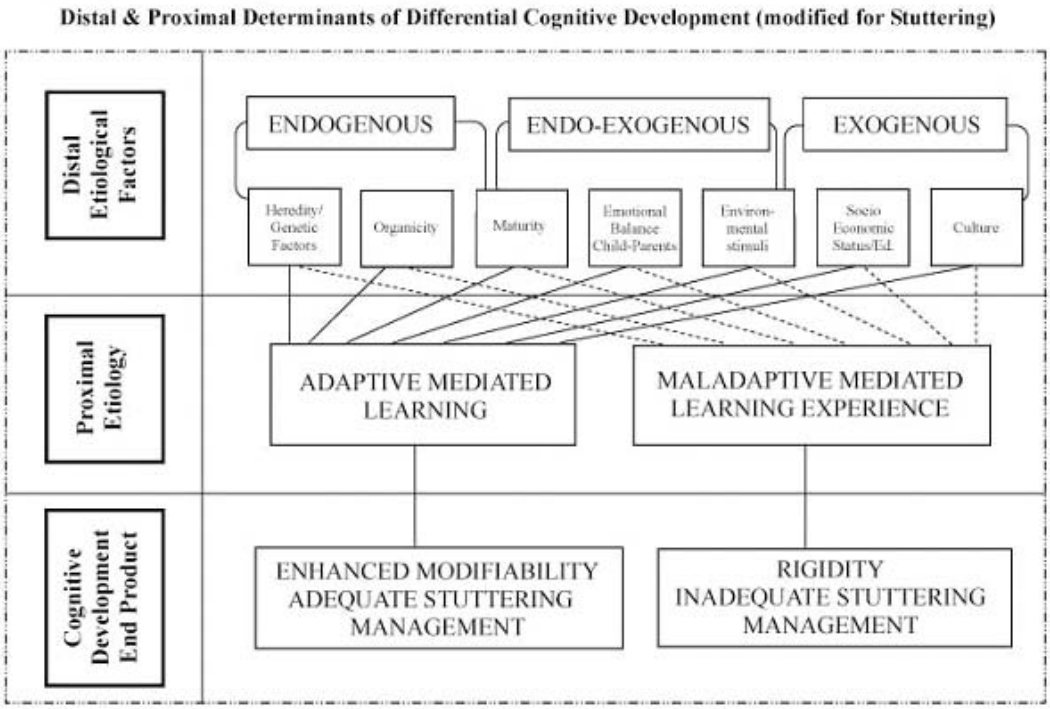
In previous discussions (Radford, 2006; Radford, 2002), the role of the mediator in stuttering was introduced; however, the critical role of the speech-language pathologist as mediator for children with chronic stuttering may not have been explored sufficiently. Borrowing Feuerstein's words to apply to stuttering therapy, the role of the speech-language pathologist in serving the child with chronic stuttering is to "change stimulus from a fleeting, randomized, almost imperceptible occurrence to a powerful, inescapable encounter that will be registered, integrated, and mastered by the learner (Feuerstein, 2003; p. 23)." Put simply, stuttering therapy for older children who have not responded to therapy, or who have experienced relapse, must be intense and well-ordered, addressing multiple factors. Further, the "inescapable encounter" must be with fluency—at some level—with successive building to higher levels of fluency, represented by increased periods of speech fluency under different speaking conditions and demands, and with different people.

The presumption here is that stuttering is the "inescapable encounter" for children who exhibit chronic stuttering. Therefore, schema for fluency is not well-established. The SLP, acting as mediator, serves to disrupt the encounter with dysfluency. Even though the authors suggest a strong focus on stuttering therapy to reduce stuttering, research by Plexico, Manning, and Dilollo (2005) suggests a comprehensive approach to stuttering management, to also include counseling to assist persons who stutter with the attitudes, emotions, and detrimental effects for quality of life. Plexico and her colleagues conclude that successful stuttering management should include more than a focus on high rates of fluency. Mediated Learning Experience Theory can provide a framework for stuttering management that addresses fluency, stuttering, attitudinal and emotional needs. Figure 1 provides a modification of Feuerstein's (2003) model of cognitive development with a focus on stuttering.

Current views are that stuttering is influenced by heredity and genetics. More than likely, stuttering is characterized by a multifactorial genetic influence with some contributions from particular conditions in the environment to trigger expression of the stuttering. Heredity and genetic factors and organicity are endogenous, distal etiological factors when considered in the context of Feuerstein's Model in Figure 1. Stutterers are a heterogeneous group, with some exhibiting additional communication impairments in addition to the stuttering constellation. Although some stutterers exhibit associated communication difficulties in language and/or articulation, some exhibit advanced language use and may be gifted. Developmental stuttering often appears between the ages of 4 to 6 years of age, with almost 80% of these children recovering without direct intervention (for example, see Zebrowski & Kelly, 2002). More females recover than males (85% as compared to 69%) (Ambrose & Yairi, 1999; Throneburg & Yairi, 2001). Maturational level—which is influenced both by development and culture—is an endo-exogenous factor that influences the child. Other factors that are influenced both by propensities of the organism as well as the environment include emotional balance and the environment. Exogenous factors include socioeconomic status, educational levels and cultural differences. So, for example, in some cultures, stuttering may be tolerated and viewed as "fate" whereas in other cultures, stuttering is viewed as an impairment to be remediated. The important point to consider is that distal etiological factors associated with cognitive development may influence stuttering but do not necessarily lead to expression or maintenance of stuttering in and of themselves. The factor that contributes

significantly to outcome is the Mediated Learning Experience, considered to be a proximal factor in the expression of stuttering. Appropriate Mediated Learning Experience will lead to successful stuttering reduction and/or fluency and/or stuttering management. On the other hand, inappropriate Mediated Learning Experience leads to expression of the stuttering and may support unsuccessful stuttering management. Unsuccessful mediations would include, as described by Plexico and colleagues (2005): (1) an approach that promotes a gradual awareness about stuttering rather than an intense approach with provision of behavioral tools for change, (2) limited attention to the client's perspective about stuttering and his or her feelings of helplessness, anxiety, and low self-worth, and (3) a criterion of success based on unrealistic goals. Appropriate mediations, particularly for the young child just beginning to stutter, are not necessarily provided through formal therapy (Zebrowski & Kelly, 2002). One could speculate that, in these instances, parents are able to provide MLE that enhances their children's recovery. However, in those cases where recovery does not occur, direct therapy with an SLP without provision of the appropriate mediations will not necessarily lead to successful outcomes.

FIGURE 1. Feuerstein's Teaching Model Adapted to Describe Stuttering Management.



From "Feuerstein's Theory& Applied Systems:A reader " by The International Center for the Enhancement of Learning Potential, Appendix VI: Teaching diagram. Copyright 2003 by the International Center for the Enhancement of Learning Potential. Adapted with permission of author.

Stuttering therapy based on principles of MLE places emphasis on influencing the child's modes of thinking, ways of organizing incoming information, and using past experience to anticipate, plan, and shape their future communication to reduce stuttering.

Feuerstein's twelve parameters of human modifiability have been translated into thirteen problem-solving behaviors for the clinician to model and promote. The twelve parameters as originally described by Feuerstein, are summarized in Table 1, with the subsequent problem-solving behaviors, or "intelligent behaviors" promoted

in the child to increase their flexibility and management of their own fluency. Price-Watson (2006) is trained as a speech-language pathologist and hypnotherapist who provided the compact disk (CD) developed to infer the feelings of people who stutter and talk through those feelings as well as talking about change. Neurolinguistic Programming is a communication therapeutic model with an objective to assist individuals in communicating their subjective experiences so that those experiences may be dealt with more effectively (Hoenderdos & Van Romunde, 1995). NLP has been applied across educational, business, and medical disciplines (Gallivan & Gallivan, 2000; NLP Academy, 2006; Arnold & Swaby, 1984). The CD that Price provided for counseling mediation was used to enhance the specific messages that are shared with the stuttering child throughout the course of intervention and follow-up. Those messages to affect change that are delivered consistently throughout therapy are summarized in Table 1 as well.

TABLE 1. Behaviors to Promote Fluency/Communication Management adapted from Feuerstein

Behavior	Description	Sample Clinician Talk
Persistence	*Encourage Multiple attempts; Practice.* FEUERSTEIN: Intentionality is a vital characteristic to the development of modifiability. Intention animates interactive behavior. Mediation of compentence, regulation, and control.	*"Try that Again."* *"Repeat it five times.* *"With practice, it will get easier."*
Cognitive Flexibility	*Encouraging change;* *Different perspectives.* FEUERESTEIN: Involves Intentionality, reciprocity, and transendence. Reciprocity is give and take between the mediator and mediatee. Transendence is the mediator's role to broaden the scope of the interaction. Mediation of sharing, awareness of change.	*"I wonder if there is a different way?"*
Listening	*Use of recorded messages that describe emotions associated with stuttering; methods to cope, outcomes.* Feuerstein: Mediation of challenge, psychological differentiation, change	*This is only one example of listening; listening is basic to all the other behaviors.*
Precision in Thought Reflection	*Thinking and preplanning.* *(Here/Now Thinking)* Feuerstein: Mediation of meaning becomes the generator of the emotional, motivation, attitudinal, and value-oriented behaviors of the individual. Involves intentionality and transcendence. Mediation of psychological differentiation, goal-seeking, setting, planning.	*"Take some time to think."*
Using prior Knowledge Reflection	*Thinking after the fact (Memory).* Intentionality, meaning, and transcendence. Mediating an optimistic outlook, feeling of competence.	*"Tell me what helped most during your last session."*
Precision of Language	*Improving word choice; word retrieval; strategies to deal with word fears.* Mediation of meaning becomes the generator of the emotional, motivational attitudinal, and value-oriented behaviors.	*"So, gymnasium is a word that's hard for you now." Do you think that a different word could be used?"*
Using all Senses	*Using visual maps, altered speech and Technology to support fluency.* Intentionality, Transcendence.	*"With the DAF set now, I want you to continue talking about the picture."*
Metacognition	*Encouraging the child to think about his mood and attitude and how it affects communication.* Intentionality, transcendence, Meaning. Search for novelty and complexity. Optimistic outlook..	*"So, you feel mad about your speech; you say it makes you look mad and other people may think you are mad at them."* *"You are more than stuttering.* *"Think about all the things you do well and are proud of."* *"Think how you have learned to deal with your stuttering."*

Creativity	*Encouraging the child to apply what they have learned in new situations.* Intentionality, transcendence, meaning. Novelty.	*"So, today, all on your own, you decided to put a sticker on your desk as a reminder."*
Application to new situations	*Transfer training to new people and/or situations.* Intentionality, transcendence, meaning. Goal-achieving behavior. Regulation of behavior.	*"You will start school again, soon" "How may we get ready for that?"*
Wonderment, curiosity, inquisitiveness, and enjoyment	*Are outgrowths of all the influence of the successful application of previous strategies.* Occur spontaneously. Intentionality, transcendence, meaning, novelty, optimistic outlook.	*Clinician acknowledges examples of the client's behaviors.*

From "Mediations for Stuttering Reduction," By Radford (2006). Echo On-Line Journal.
Adapted from Table 1. Behaviors to Promote Fluency/Communication Management.

Along with "intelligent behaviors," a new type of mediation (NLP) to enhance changes in attitude and expression of emotions that may be counterproductive to stuttering management, was introduced in Case Studies 1 and 2 but not used in Case Study 3. With this background in mind, three case studies will be presented to illustrate application of MLE to promote stuttering reduction. The reader is also referred to a companion article (Radford, 2006) that provides additional background about the implications of practical mediations for stuttering therapy.

Case Study 1

TG was a 13-year, 7-month-old Hispanic male whose primary language was English. He had received 4 years of speech therapy in public schools. He was referred to the ST Program by his public school SLP. TG was enrolled in regular classes, reporting that his favorite subject was art. He was diagnosed with Attention Deficit Hyperactive Disorder and was on Adderal, 30 mg, once per day. His grades were average; however, parents expressed some concern about his reading skills. With the exception of speech therapy, TG was receiving no other special education services.

Both parents were interviewed. They indicated that TG's stuttering had increased since his enrollment during the current year in a new school and a move to a new home. The parents also expressed concern that TG's younger sister was teasing him about his stuttering and that some teasing from other students had also occurred at school. During a separate interview, TG confirmed that he was being teased at school and indicated that he would like to run away. During periods of stuttering, he was observed to cover his mouth with his hand. He avoided eye contact and generally maintained a slouched posture with no smiling. He could not explain his stuttering behaviors or describe strategies he had learned at school that helped him to maintain fluency or work through a stuttering moment at home. Along with the major adjustments of a new school and home, TG's father was dealing with chronic illness, resulting in changes in family lifestyle and finances as he was no longer able to work. Dad expressed significant concern regarding TG's stuttering and reported that he had also stuttered as a child but had improved with age. However, his concern was that his son was continuing to stutter at a later age than he had. Dad and Mom described episodes of severe stuttering at home, during which TG had facial tremors, excessive eye blinks, blocks and part-word repetitions.

TG presented with a complex interaction of all seven distal etiological factors associated with stuttering (See Figure 1) as well as what appeared to be maladaptive learning experiences for managing his stuttering. The parents were encouraged to seek counseling and other community supports for themselves as they dealt with the factors impeding their functioning as a couple and as parents. Further, parents were counseled that therapy would be a family commitment and that it would be helpful if they watched each therapy session and prepared to participate as time progressed. Pre- and post-test measures are summarized in Table 2.

TABLE 2. Pre- and Post Treatment Data For TG, age 13 years, 17 months

Measure	Pre Test Score	Post Test Score
SSI		
Frequency Score	16	2
Duration	8	4
Physical Concomitants	5	2
Overall	29	8
Percentile	83	4
Severity Rating	Severe	Mild
Dysfluency Index	**Pre NLP**	**Post NLP**
Uncued Sample 1	20/214 (9.3%)*	2/483 (.41%)
Uncued Sample 2	33/178 (18.54%)	
Uncued Sample 3	16/214 (7.47%)	
Cued Sample 1	18/241 (7.4%)	1/576 (.17%)
Cued Sample 2	8/139 (5.7%)	
Cued Sample 3	2/229 (0.87%)	
Lindamood Auditory Conceptualization Test	87	82
Test of Nonverbal Intelligence-3		
Raw Score	15	26
Quotient	82	102
SEM	4	4
Percentile Rank	12	55

*The Dysfluency Index is calculated by total number of dysfluencies divided by the total number of syllables.

TABLE 3. Descriptors of TG's Problem Solving Across 13 Parameters

Behavior	Concept	Pre-Test	Post-Test
1. Persistence	Multiple attempts/Practice	No persistence without reminders	Reports practicing without reminders.
2. Cognitive Flexibility	Evidence of thinking about tasks related to speaking in more than 1 way.	Covers mouth when stuttering; can not identify stuttering behaviors or how to change.	Can identify strategies they do not work and describe alternatives.
3. Listening	Ability to attend to clinician's instructions, NLP tape, own taped samples and identify important features.	Listens quietly; however, could not repeat essential details without at least 2 reviews and verbal prompts.	Listens attentively; uses maps and journal to summarize important details.
4. Precision in thought	Thinking and preplanning.		
5. Using prior knowledge.	Recalling and applying information from past experiences.	TG would not or could not describe his previous therapy or what he learned.	TG summarizes significant events from his previous sessions, homework assignments, and experiences with talking in school.
6. Reflection	Memory	Avoidance of talking about stuttering.	Recalls difficult speech moments and able to share details.
7. Precision of language	Word choice; retrieval; word fears.	No vocabulary for identification of stuttering behaviors. Using all senses. Using visual maps, technology and NLP with relaxation.	Has vocabulary to identify his particular stuttering behaviors.
8. Metacognition	Self-critique; the ability to think about one's own mood, attitude and how mood and attitude affect communication.	Unable to analyze his own behaviors—strengths and weaknesses.	Increased participation in talking; identifying his strengths.
9. Creativity	Applying strategies in novel ways that have not been taught; humor.	Drew a very negative picture of himself as a stutter.	Drew a sun with glasses on to reflect his new feelings about himself.
10. Application	Transfer training.	No effective strategies for managing stuttering observed.	Is able to role-play with the clinician and parents. Can analyze tapes of his own speech; completed independent reading regarding managing his stuttering when therapy is decreased.
11. Wonderment, curiosity, inquisitiveness, and enjoyment	Outgrowths of all the influence of the successful application of previous strategies. Occur spontaneously.	No humor; somber mood; expressed a desire to run away from school; both parents cried during interview.	Jokes and laughs.

Case Study 2

JE was a 12-year-old Hispanic male whose primary language was English. He is the youngest of three children and has two older sisters. JE had been receiving special education services for both his stuttering and learning disability. His mother informed that his speech problem was noticed at age 4 years. He repeated kindergarten due to his slow progress. During this period, he was diagnosed with Central Auditory Processing Disorder and had received special education services since age 4 years. The parents reported that JE's learning abilities were considered slow. Parents also informed that his best subject was spelling and his weakest subject was math. When he was referred to the ST Program by his public school SLP, JE was receiving speech therapy, counseling for aggressive behavior and anger management, and assistance through the Content Mastery Center (CMC) for assistance with his academic subjects. Via a telephone interview with his regular teacher, investigators were informed that JE was receiving assistance with English/Language Arts and Math. The teacher expressed concern about JE's disorganization and tendency to wander at school.

Both parents had encouraged JE's involvement in sports—an area of strength for him. He excelled in golf, basketball, soccer, and baseball. However, he struggled with the academic subjects and was increasingly resistant to mother's attempts to help him get more independent at home in completing homework assignments. Both parents reported that JE had stuttered with about the same severity since preschool. In spite of the lengthy period of speech therapy, parents were concerned about the limited amount of change in his fluency.

JE presented with a complex interaction of distal factors and questionable mediated learning experiences for management of his stuttering. In contrast to TG, Case Study 1, JE presented with a language impairment as well as fluency problems.

General Procedures

JE participated in 42 hours of therapy, delivered in twice-weekly, two-hour sessions, over the course of 11 weeks. Like TG (Case Study 1), JE received neurolinguistic programming, delivered in 3-week cycles, with 3 weeks on, 3 weeks off, and 3 weeks on program. Three hours of therapy were individual and one hour per week involved a conversational-play interaction and with TG (Case Study 1) for a combination recreational-talking activity. A fluency-shaping, language training approach was implemented for JE. Fluency activities began with single word naming, progressed to sentence production during picture description, and structured conversations in which he would explain an activity, describe a picture, or talk about his day at school. Lessons from the Smooth Talking manual were incorporated in each therapy session. Further, opportunities for fluency transfer-training also involved the production of an audiotape for JE and his parents to listen to during the ride home. Further, like TG, JE's parents were encouraged to participate in conversations centered on his homework, progressing from single-word utterances, to sentences.

Talking practice for home included JE's parents working with him on telling time, providing answers orally to math problems, reading simple math problems aloud, and developing a schedule for chores he would complete at home. Mother reported that JE had particular difficulty with waiting when she could not talk with him immediately. During these periods, she observed him to stutter more as he posed different statements to get her attention. Part of the home treatment program was to assist Mother in developing some alternative methods for dealing with JE during these periods. One technique was that she immediately responded to him, informing him that he would need to wait about 5 minutes (for example; the time varied anywhere from 1 to 5 minutes) before she could talk with him. He was encouraged to keep up with the time on his watch. During the "waiting" time, he was not to continue to persist in talking with mom when she could not talk to him immediately. The strategy was practiced during role play in therapy with mom.

Both parents were encouraged to attend and watch the therapy sessions, as well as JE's relaxation training using the neurolinguistic program CD. Mother attended consistently and watched the sessions. After the initial parental conference, dad attended two additional sessions and the final conference. Mother reported difficulty in maintaining dad's assistance with language modeling and using the strategies suggested for encouraging JE's fluency at home. A persistent pattern that supported stuttering was both parents' tendencies to ignore JE's verbal mands for attention. Parental tendency to ignore him while he persisted in increasingly dysfluent speech was a maladaptive learning experience that clinicians worked to change.

Individual Therapy Sessions

At the beginning of each session, whether preceded by neurolinguistic programming or not, a 5-minute uncued and a 5-minute cued speech sample were taken to calculate JE's percentage of fluency. During each sample, JE was provided a picture to tell a story about. His stuttering was so severe, initially, and he had so much difficulty formulating sentences, that a modification was employed. JE was provided a picture and encouraged to name as many words as he could that told something about this picture. To prepare him to name fluently, JE was encouraged to look at the picture and simply think about the words in his head without saying them. The clinician modeled the behavior for him and also did some trial naming with a slow rate of speech. An alternative mediation was that he was told to look at the picture for a few minutes, close his eyes, and see a chalk board behind his eyelids. Once he could visualize the chalk board, he was told to write the words on the board that named items he had just seen in the picture. He was encouraged to name each word on one breath, with a gentle release of air preceding each production. Eventually, he was provided opportunities to say increasingly longer utterances while maintaining continuous phonation throughout a given multisyllable word, phrase and, eventually sentences.

During subsequent sessions, a particular sentence form was modeled for JE to use during his picture description. The sentence form remained the same during a given session, for the 5-minute period of picture description. So for example, JE might say, "I see a soccer ball; I see a net; I see players." During cued samples, clinicians reminded JE to use his techniques whenever a stuttering moment occurred. During the uncued sample, JE was provided no reminders about fluency or grammar. The two types of samples were alternated each session to avoid order effects. Further, this strategy allowed clinicians to

determine when JE began to take more responsibility for using fluency shaping techniques. Board games, card games, word puzzles, worksheets from the ST Program (Radford, 2002), and a personal journal were used in the therapy session. After the two speech samples were taken at the beginning of the session, JE, like TG, would count his own total words and total dysfluencies and calculate the percentage of fluency for each sample, with the assistance of the clinicians to use a calculator. Like TG in Case Study 1, he was encouraged consistently to count aloud as an easy, automatic warm-up speech task that always resulted in 100% fluent speech. After the sample and analysis, a specific speech management technique would be introduced and practiced. JE's techniques included easy onset, a reduced rate of speech, a 5-second wait-time before responding to questions, with preplanning (silent rehearsal) occurring during the wait time. Only one technique was introduced per session, and the technique from the prior session would be practiced. This would be followed by recording of a brief talking homework tape for JE to listen to immediately with his parents during the ride home for transfer training. A map to emphasize certain strategies was also produced each session and reviewed the subsequent session. JE was observed one time at school and his regular classroom teacher was interviewed during the beginning of therapy.

RESULTS

Pre and post-test results for JE are provided in Table 4. Pretesting included the Test of Nonverbal Intelligence –3, the Goldman Fristoe Test of Articulation –2, the Stuttering Severity Instrument –3, the Lindamood Auditory Conceptualization Test and a picture description task. Because JE's articulation skills were assessed as age-appropriate during the pre-test, The GFTA was not given as a post-test. LAC post-testing did not occur because of parents leaving early with JE from the session as a result of a scheduling conflict (a plane flight for the start of vacation). During a final interview, Mother expressed concern that it was difficult to engage dad with the talking strategies—even though he was very concerned about his son's performance. Mother indicated that dad's interactions with JE were often more physically oriented than talk oriented. So, dad and JE would play golf, or "wrestle." Mother did indicate that she was able to more effectively support JE speaking more planfully and not "blurting" out as much or demanding attention. Both parents commented regarding JE's response to the neurolinguistic programming CD. During the second session, as the narrator talked about how it felt to stutter, JE cried as he lay on the couch. Both parents had seen him angry and aggressive when he had difficulty communicating; neither parent had indicated that they had seen an opportunity for him to express his sadness or cry about his stuttering and other communication problems.

TABLE 4. Pre- and Post Treatment Data For JE, age 12 years

Measure	Pre Test Score	Post Test Score
SSI		
Frequency Score	12	4
Duration	10	8
Physical Concomitants	7	8
Overall	29	20
Percentile	80.5 (78-88)	40 (24-40)
Severity Rating	Severe	Mild-Moderate
Dysfluency Index	**Pre NLP**	**Post NLP**
Uncued Sample 1	Absent, Late enrollment	1/271 (.4%)
Uncued Sample 2	Absent, Late enrollment	
Uncued Sample 3	Absent, Late enrollment	
Cued Sample 1	Absent, Late enrollment	3/370 (.8%)
Cued Sample 2	Absent, Late enrollment	
Cued Sample 3	Absent, Late enrollment	
Lindamood Auditory Conceptualization Test	Not completed	Not completed
Goldman-Fristoe Test of Artic-2		
Standard Score	104	Not administered
Percentile	27	
Test of Nonverbal Intelligence-3	0	Not completed
Raw Score	60	
Quotient	>1	
SEM	>1	
Percentile Rank		

*The Dysfluency Index is calculated by total number of dysfluencies divided by the total number of syllables.

In addition, JE's pre and post-test performance along the 13 problem-solving behaviors associated with successful stuttering management are provided in Table 5. JE did not care for art activities. However, he did write one sentence to summarize a strategy he could use to address his stuttering. The clinician had explained that JE should keep trying to talk if stuttering happened. JE wrote, "she told me if I miss [sic] up taking [sic] I cud [sic] try again next time." He needed assistance to spell most words and attempted to spell words phonetically.

TABLE 5. Descriptors of JE's Problem Solving Across 13 Parameters

Behavior	Concept	Pre-Test	Post-Test
1. Persistence	Multiple attempts/Practice	Avoidance of practice	Practice when reminded; schedule book and journal to help organization.
2. Cognitive Flexibility	Evidence of thinking about tasks related to speaking in more than 1 way.	Difficulty changing activities.	Difficulty changing topics and activities; reminders help.
3. Listening	Ability to attend to clinician's instructions, NLP tape, own taped samples and identify important features.	Impulsive; interrupts before hearing all directions.	Using 5-second wait rule and repeating before acting or responding.
4. Precision in thought	Thinking and preplanning.	Inability to recall details from school day or therapy.	Can recall details with verbal and visual cues; supplement with note cards.
5. Using prior knowledge.	Recalling and applying information from past experiences.	Inconsistent in organizing communication; omits essential details; fails to recognize listener miscomprehension.	Improved verbal communication; silent rehearsal and visual imagery to plan before talking.
6. Reflection	Memory	No vocabulary to describe his speech. Just says, "I don't know."	Can imitate or verbally describe his stuttering.
7. Precision of language	Word choice; retrieval; word fears.	Gestures when he can not recall a specific word. False starts and incomplete utterances frequent.	Uses gesture to supplement message. Preplanning helps in clarity of his communication.
8. Metacognition	Self-critique; the ability to think about one's own mood, attitude and how mood and attitude affect communication.	Unable to analyze his own behaviors—strengths and weaknesses.	Improvement, but difficulty with self-monitoring; responds more quickly to reminders.
9. Creativity	Applying strategies in novel ways that have not been taught; humor.	Limited.	More humor and attempts to engage verbally.
10. Application	Transfer training.	No effective strategies for managing stuttering observed.	Is able to role-play with the clinician and parents. Can analyze tapes of his own speech with assistance. Therapy is decreased.
11. Wonderment, curiosity, inquisitiveness, and enjoyment	Outgrowths of all the influence of the successful application of previous strategies. Occur spontaneously.	No humor; somber mood; difficulty maintaining attention and remaining still. Tires easily with language activities.	Jokes and laughs. More attempts to write. Interest in telling time and planning his Weekend activities.

Case Study 3

ZA was a 10-year-old, English-speaking, African American child of adoptive parents. He was diagnosed with Fetal Alcohol Syndrome, Attention Deficit Disorder, and Oppositional Defiant Disorder. He participated in the ST Program prior to the institution of NLP as a routine mediation. He was referred by his public school speech-language pathologist. ZA was entering the fourth grade as a transfer student from a Northern state, where he and his adoptive parents had resided since his adoption as an infant. ZA was undergoing some school adjustment problems, with a move south and transfer to a school that was almost 100% Mexican American.

ZA presented with vision problems, corrected with glasses. He was enrolled in special education classes, psychological counseling, occupational and physical therapy. He received math instruction in the resource room and math skills were described as two years delayed. His best subjects were reported to be social studies, science, and reading.

ZA's birth mother was described as an alcoholic who relinquished responsibility for ZA at birth. No information was available regarding his birth mother's pregnancy and delivery other than the fact that ZA was the seventh of eight total pregnancies. His mother (from here forward, the adoptive parents will be referred to as Mother and Father) reported that ZA had speech therapy almost continuously since 5 years of age. Based on parent report, it appeared that ZA had accomplished milestones for cooing, babbling, and first words at the expected ages in spite of recurring ear infections prior to 12 months. He was delayed in crawling, walking, and toilet training (with toileting mastered at 3 to

4 years). ZA had an adenoidectomy and tonsillectomy at 8 years. He was being followed by an orthodontist regarding dental problems and a significant overbite. He had been fitted with eyeglasses to correct his vision one year prior to referral to the Smooth Talking Clinic.

The parents reported that ZA had difficulty with abstract concepts. He was reported to respond well to school subjects he liked; however, mother stated he "won't even try" if it was a subject he did not like. Because of problems with writing, the parents were trying to obtain a word processor for ZA to use at school. His prescribed medications were Adderrall, Cloridine, Claritin D and a Rhinocort Inhaler. The parents were concerned about his stuttering and indicated that ZA avoided talking to adults and would become aggressive when he was unable to communicate.

General Procedures

ZA attended therapy for 5 weeks, with two sessions per week, 2 hours per session, for a total of 18 hours of therapy. Of the 18 hours, 13 ½ hours were individual sessions, with 4 ½ hours of group therapy sessions with 4 to 5 other children receiving services for stuttering. For ZA's first three therapy sessions, only uncued samples were collected to determine his baseline level of stuttering. In three subsequent sessions, cued and uncued samples were collected.

A fluency-shaping approach was established as the primary intervention strategy for ZA, with techniques taught in the context of his reading various storybooks. Following his reading of the storybook, he was asked questions about the story to encourage recall and improved memory. Consistent with behaviors associated with FAS, ZA was difficult to redirect once he became frustrated. He expressed a dislike of generating his own stories based on looking at pictures and so this activity was discontinued.

Eye contact was not maintained appropriately and he exhibited secondary characteristics of waving his hands or covering his face with his hands during moments of speech difficulty or making a clicking sound with his tongue. Various worksheets from the ST Program (Radford, 2002) were incorporated in the sessions. Further, a map was completed each session that highlighted a new technique or strategy for ZA to use at home. For his first three therapy sessions, only uncued samples were collected to determine his level of fluency. Both parents attended every session and were encouraged to use various activities at home.

Individual Sessions

At the beginning of each sample, a cued and/or uncued sample was collected. This was followed by a review of ZA's speech map and homework from the previous session. A new worksheet to emphasize a new strategy would be introduced. ZA primarily used fluency shaping. However, he did use negative stuttering practice (bouncing), combined with numbers and written words so that he could choose a number and bounce on the initial sound of the word for x number of times. This concrete activity was enjoyable to him because it included his favorite activity of reading. Three parent counseling sessions were held: one at the beginning of therapy, one during the second week, and the final one during the last week of therapy. The reader is reminded that neurolinguistic programming was not used as a mediation with ZA because the cd had not been incorporated at this time. However, feelings and attitudes were addressed, using the positive messages associated with the ST Program worksheets (Radford, 2002).

Parents were provided a homework tape at the end of each session that contained a recording of ZA using a particular speech technique. Parents would take notes and write questions down as occurred to them regarding what they heard on the tape. To transfer ZA's use of more fluent speech to the home setting, the parents were encouraged to establish a routine of having ZA write down and talk about 10 things that happened to him each day. Their primary strategies were to listen and to repeat what ZA said, modeling slow and easy speech, with either a reduced or expanded utterance.

RESULTS

ZA's pre and post therapy results are provided in Table 6. His pretest SSI performance was an overall score of 28 which converted to a percentile of 78 (78-88), indicating severe dysfluency. His post-test overall score was 21, or a percentile of 41 (41-60), equivalent to a moderate severity. During baseline data collection, ZA had difficulty describing pictures or telling stories from a picture. He also had difficulty recalling events, such as what he did during the weekend. During the first session, he expressed his frustration by telling his clinicians that he did not like so many questions and that he was ready to leave. He responded to firm directions, such as "ZA you can do this; let's get finished." "It may seem like hard work; I will help you; it will get easier." When he seemed particularly agitated, clinicians would simply stop all activity and essentially tell ZA they were taking some time so that he could prepare to work.

TABLE 6. Pre- and Post Treatment Data For ZA, age 10 years

Measure	Pre Test Score	Post Test Score
SSI		
Frequency Score	13	6
Duration	6	6
Physical Concomitants	9	9
Overall	28	21
Percentile	78 (78-88)	50.5 (41-60)
Severity Rating	Severe	Mild-Moderate
Dysfluency Index	**Pre Therapy Picture Desc.**	**Post Therapy Picture Desc.**
Uncued Sample	29/496 (5.84%)*	13/281 (4.62%)
Cued	Not Taken	
Clinical Evaluation of		
Language Fundamentals		
Screening Test	4 (Criterion: 21)	Not completed

*The Dysfluency Index is calculated by total number of dysfluencies divided by the total number of syllables.

DISCUSSION

Three case studies are presented to: 1) demonstrate the incorporation of MLE in therapy to reduce stuttering in school-age children who have not experienced satisfactory stuttering management in school-based intervention and 2) gather evidence of the effectiveness of MLE to reduce stuttering. Three boys, a 13-year, 7-month-old Mexican American enrolled in regular education, a 12-year-old Mexican American with language disorder and stuttering, and a 10-year-old, African American child diagnosed with FAS, Attention Deficit Disorder, Oppositional Defiant Behavior, and stuttering were participants. Mediated Learning Experience (MLE) provided a framework for addressing the numerous factors that co-occur with stuttering, or that may have some negative impact upon stuttering in children. The case studies provide some evidence that an MLE approach was effective in spite of individual differences, behavioral challenges, and differing cognitive skills. Furthermore, positive changes occurred even for the children in Case Studies 2 and 3 who either experienced a frequent absentee rate or ZA who could not attend for the recommended 40 hours of therapy. Eighteen hours of therapy for the youngest child, the 10-year-old African American in Case Study 3, was associated with positive changes in stuttering management and related factors--including family-child emotional balance, and the child's own behavior. The current case studies address some of the limitations of a previous case study that attempted to examine the effects of MLE when mediations incorporated in therapy included delayed auditory feedback and speech-motor repatterning (Radford, et al., 2005). A study of speech-motor repatterning that incorporated specific motor exercises in the previous study was not pursued in the current case studies. A more critical need was to revisit the notions basic to MLE and how they might apply in unique cases of chronic stuttering. The research design was revised for intense focus on mediated learning, with use of neurolinguistic programming as a useful mediation to influence attitudes and emotions that might serve to exacerbate stuttering.

The results indicate that mediated learning shows promise as a framework for devising interventions to address stuttering in school-age children who have demonstrated unsatisfactory response to interventions that did not incorporate MLE.

Future studies will incorporate longitudinal group designs with larger samples so that more powerful statistical procedures might be incorporated.

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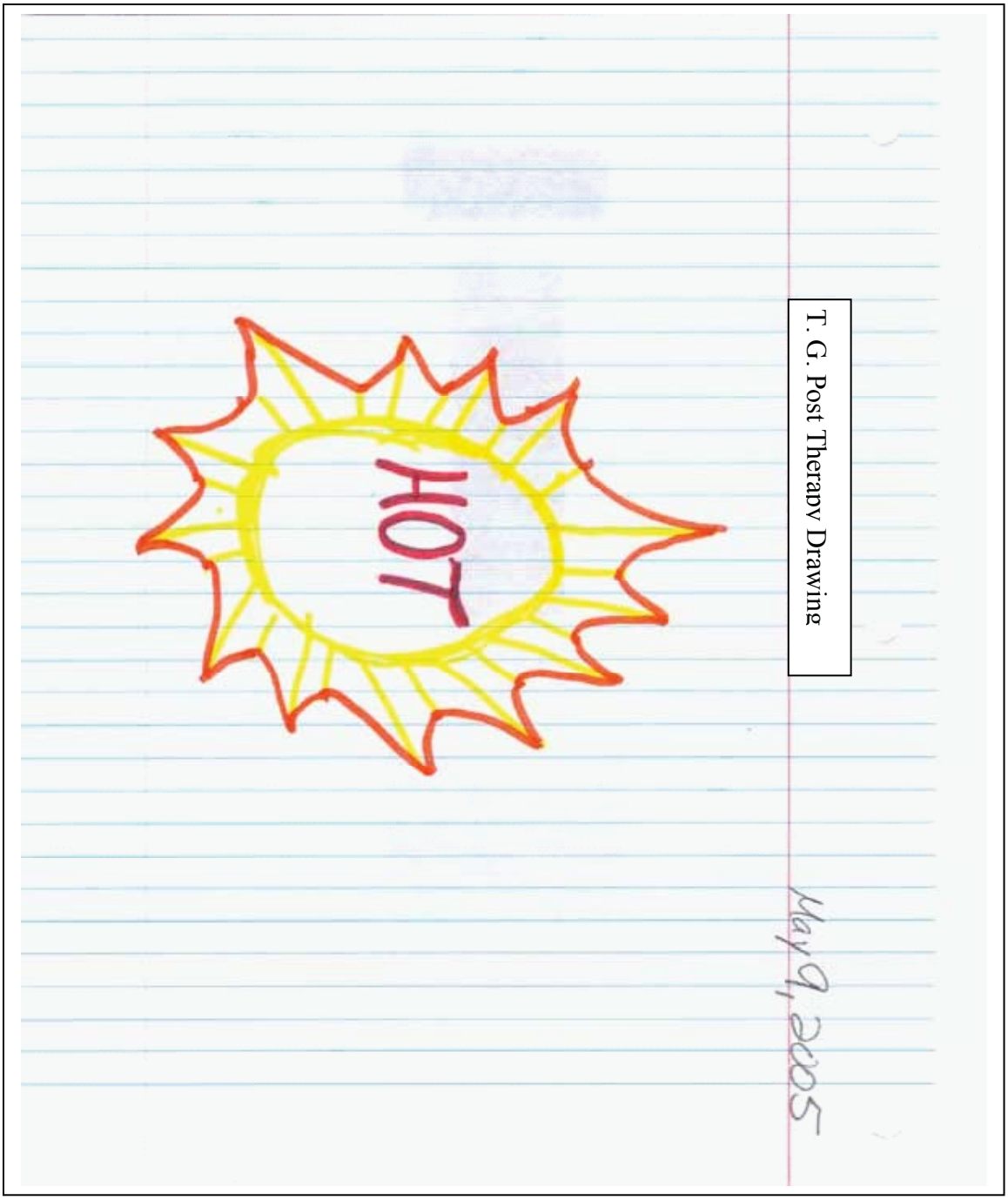
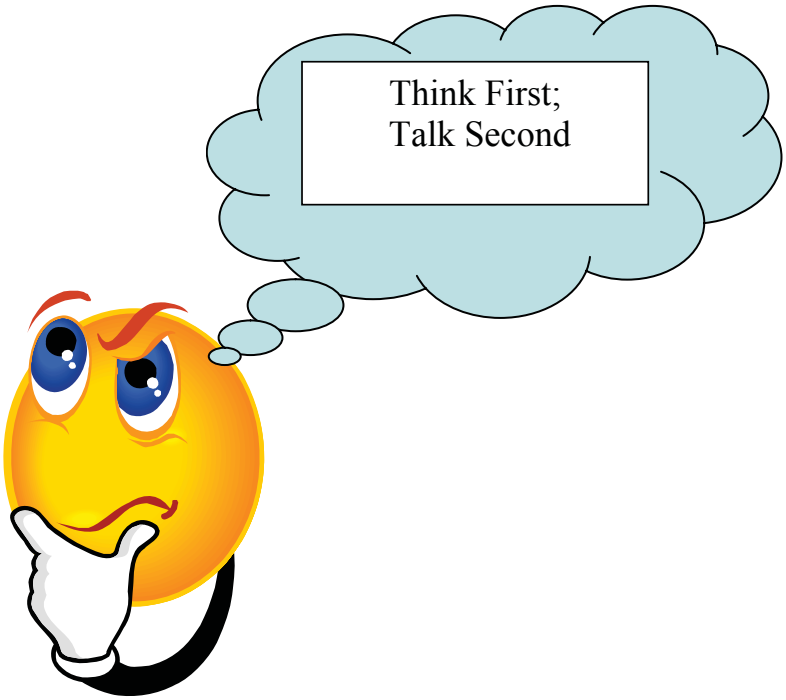
APPENDIX

FIGURE 2. TG's Pre Therapy Picture To Illustrate His Feelings About Stuttering

FIGURE 3. TG's Post Therapy Drawing To Illustrate His Feelings About Stuttering



Sample Map to Use for Early Stages of Therapy to Manage Stuttering



After a strategy has been selected by the SLP, the strategy would be practiced in therapy. The clinician serves as mediator to introduce and model. The clinician then relinquishes or shares the teaching role with the child who models and guides either the clinician or another child through the strategy. A map is generated to take home as a reminder. It is helpful if several colorful maps are generated and placed in strategic places at home that the child chooses.

ECHO

IDENTIFYING THE ADMISSIONS CRITERIA THAT PREDICT SUCCESS IN A MASTER'S-LEVEL COMMUNICATIVE SCIENCES AND DISORDERS PROGRAM AT A HISTORICALLY BLACK UNIVERSITY

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ABSTRACT

The admissions process for master's degree programs in communicative sciences and disorders (CSD) is quite competitive. Use of specific admissions criteria to predict academic and clinical success in CSD was unsubstantiated by research involving historically Black colleges and universities. The investigator sought to answer the following question: What is the predictive value of admissions criteria for entry into a master's-level CSD program at a historically Black college or university? This inquiry was addressed using six specific research questions.

The methodology for the investigation utilized retrospective data, analyzed via correlational analyses, and featured a quantitative design. The variables of undergraduate grade point average, the Graduate Record Examination (GRE) General Test verbal and quantitative subtest scores, attempts to pass the Praxis examination, and overall graduate clinical practica grade point average were analyzed in terms of their predictive abilities and correlations with success, which was operationally defined.

The GRE verbal subtest score and the sum of the verbal and quantitative subtest scores were found to be predictive of passing the Praxis the first time it is taken. The overall graduate clinical practica grade point average was also most strongly correlated with these two measures. Future studies should consider and attempt to quantify letters of recommendation and reference forms, in order to make the admissions process more equitable and informative. Future research should also further examine how the success of minority students can best be predicted in order to increase diversity in the CSD professions.

KEY WORDS: Speech Language Pathology, Historically Black Colleges, Graduate Students, Predictors, Success

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INRODUCTION

Nature of the Problem

The admissions process for graduate programs in Communication Sciences and Disorders (CSD) is highly competitive, and as a result, Ney (1997) stated the issue of finding legitimate predictors of success in graduate school is crucial. The profession of speech-language pathology is rapidly growing, and the past decade has seen a significant increase in the number of applicants to master's-level CSD programs. There are limited openings in any given program, and admission is highly sought by many.

Use of the previously mentioned criteria to predict academic success in CSD, and ultimately success in the professions, was unsubstantiated by research involving historically Black colleges and universities (HBCUs). It was pertinent that the predictive utility of graduate admissions criteria in CSD programs at HBCUs be examined for two chief reasons. First, there is a large disparity in the number of African American speech-language pathologists certified by the American Speech-Language-Hearing Association (ASHA). According to an ASHA (2003) report, only 2% or 822 out of 37,968 certified speech-language pathologists who self-disclosed their race were African American. Second, individuals, who will be successful as CSD graduate students and ultimately in the professions, should be selected based on a process substantiated through research.

Background Information

Alabama A&M University is an HBCU, and the graduate school is among the largest of those at HBCUs (Office of Research and Development, 2004). It is 1 of 8 HBCUs that offers a master's degree in CSD. The program is dedicated to addressing the underrepresentation of minorities in the CSD professions.

The graduate admissions process at the university was not empirically based; rather, it was an arbitrary process that aimed to consider candidates who deserve admission. Letters of recommendation were often provided but were usually not very helpful, as they were frequently stated in general terms rather than in expressions of clinical application of course content, clinical performance, rapport with faculty, clinical supervisors, patients, and fellow students, and so forth.

Various fields of study have sought to determine the factors that strongly predict success in graduate school with the goal of advancing their disciplines by increasing the number of qualified individuals. Attention has been given to the criteria included in the graduate admissions process as potential indicators of success in graduate school and the professions. Grade Point Average (GPA) from undergraduate study, standardized test scores, letters of recommendation, and personal statements or essays are among the most typically utilized criteria in deciding which students are granted entry into a given program. The field of CSD also seeks how to best determine which graduate applicants will be academically, clinically, and, ultimately, professionally successful. The need to determine the admissions criteria that best predict this success was heightened because of the competitive nature of CSD graduate admissions. Investigating the predictive utility of admissions criteria in master's-level CSD programs at HBCUs was also necessary because of these same concerns. Program entry should be granted to the most deserving applicants with reliable, empirically based information to support the criteria used in the admissions process. In addition, there is a pronounced need for certified minorities in the professions in order for its diversity to correspond with the nation's shifting demographics; HBCUs help to advance this issue.

Previous Studies of Graduate Admissions in CSD

Shapiro, Ogletree, and Brotherton (2002) examined graduate students with marginal abilities in CSD programs by conducting a written survey of the 218 master's degree programs accredited by ASHA's Council on Academic Accreditation. Of these programs, 91 completed and returned the survey. The authors' noted the instructional, financial, professional, ethical, and legal challenges that marginal students present in a graduate CSD program, specifically in the areas of academic and clinical abilities. Faculty members were then confronted with how to best remediate and provide intervention to these students, both clinically and academically, which yielded difficulties in relation to time and shrinking budgets. The most frequently noted characteristics of deficiencies, including global problems in academic and clinical areas, acquiring and applying knowledge, and negative personal characteristics, were typically sufficient to prevent graduation. These authors ultimately found that careful selection of graduate student candidates is hypothesized to be the best preventative method for reducing the probability of encountering a marginal student. These authors stated that if such measures are unsuccessful, early and comprehensive intervention addressing strengths and needs is crucial. Potential obstacles to prevention and intervention are undergraduate background or the admissions process, a graduate program's limitations, and student characteristics. These authors did not, however, provide any further detail or recommendations on prevention and intervention with the possible obstacles.

Wark, Studebaker, and Wark (2001) at the University of Memphis conducted a retrospective study of speech-language pathology and audiology student records dated between 1993 and 1997. The predictive measures included in their analysis were UGPA, the three GRE General Test subtests, and a derived equation utilizing these data. Their outcome measures of success were evaluated in terms of graduate GPA and academic faculty members' ratings of the students. The authors described their major findings. First, Undergraduate Grade Point Average (UGPA) was a better predictor of success in graduate school than a GPA based on the last 60 hours or credits, and the GRE analytical subtest was a better predictor than either the quantitative or the verbal subtests. Second, the GRE and UGPA predicted success similarly for their outcome measures. Last, the authors' derived equation that employed a regression analysis predicted graduate school success better than the individual predictors, and their equation equally predicted success for both audiology and speech-language pathology. The following equation, provided in the article, was calculated by combining the sum of the verbal, quantitative, and analytical GRE subtests with cumulative UGPA, with equal weight, or Y = (GPA * 650) – 700) + GRE. These authors' findings were applicable to the present study because they also analyzed the predictive utility of the GRE and GPA. However, they defined success utilizing graduate GPA and academic faculty members' ratings of the students, whereas the present study operationally defined success as a passing score of 600 on the first attempt on the Praxis examination and an overall graduate clinical practica GPA greater than or equal to 3.5.

Analyzing criteria for graduate admissions in speech-language pathology and examining the predictive utility of application criteria particularly GRE and UGPA, Forrest and Naremore (1998) found, "Analyses indicated that students' achievement in a master's program could be predicted with 93% accuracy on the basis of UGPA alone. However, when GRE scores were used to calculate the discriminant function, classification accuracy reached only 63%" (p. 57). Forrest and Naremore contended that the GRE is a weak contributor to predicting success in a master's degree program, and that GPA was revealed as the only good predictor of graduate success in CSD. Their findings are similar to those of the landmark study by Cooksey and Stenning (1981) at Texas Agricultural and Mechanical University in which limited utility of GRE scores in the fields of education, business, engineering, and science was found. Forrest and Naremore acknowledged that their sample was small and that they did not take into account some elusive variables. They stated, these variables are "other factors that might influence excellence in a graduate program" (p. 61). Their study was restricted to the CSD master's program at Indiana University at Bloomington, which is not an HBCU.

Forrest and Naremore (1998) found, quite interestingly, that the second most important factor in predicting success in their graduate CSD program was undergraduate major, and that individuals with undergraduate majors outside CSD performed better than those with majors in CSD. The authors hypothesized that this was closely related to the age of the students. They concluded that having no undergraduate degree in speech and hearing is not necessarily an obstacle to preparing for a graduate degree in the field. Furthermore, motivation and maturity, combined with the required undergraduate prerequisites prior to initiating graduate coursework and practica, may be notable factors for academic and clinical excellence.

Forrest and Naremore (1998) expressed that an analysis similar to their study is warranted at other universities, to determine whether replication of the results is possible. In response to their study, Indiana University at Bloomington changed the weighting of their admissions criteria, as the administration was convinced to allow a 2-year trial of this new approach. Currently, UGPA is given twice the weight of GRE scores, and the minimum combined score on the verbal and quantitative sections of the GRE is 900, instead of 1,000 that was previously required. Forrest and Naremore sought to use the current guidelines as a baseline for further study, as they encouraged other programs to conduct investigations to further determine factors that contribute to success in speech-language pathology.

Hagness (1996) examined enrollment patterns in CSD and described graduate acceptance criteria. Survey responses from 50 ASHA-accredited master's-level CSD programs were obtained. A response rate from 26 programs, or 52%, was noted. The author found that responses to questions regarding graduate acceptance criteria indicated a strong preference for GPA over GRE scores, although the specific type of GPA was not provided. Hagness noted that 80% of the responding programs considered GPA, whereas only 30% used the GRE. The average GPA for acceptance was 3.0, and the GRE verbal and quantitative subtest sum of 1,000 was the average accepted threshold. However, Hagness found variability in the GRE criteria ranging from 800 to 1,500 for the sum of the verbal and quantitative subtest scores.

In 1986, ASHA published a report by Powell that included data from a 20-year period. The article included a description of the 145 African American students who completed undergraduate degrees in speech pathology and audiology within this time period at an HBCU and went on to obtain graduate degrees or were enrolled in graduate study full time toward degrees in the professions. The description contained GPA, number of students, and earned master's and doctorate degrees at HBCUs and predominantly White universities. No information regarding GRE or other graduate admissions tests taken by these students was available. Powell conceded that additional research is necessary to identify the factors that predict success in CSD. Valid questions were raised that remain unanswered regarding (a) institutional versus traditional characteristics that warrant consideration, (b) the extent to which academic success is related to success as a speech-language pathologist or audiologist, and (c) how these factors impact minority or nonminority students.

ASHA-Accredited CSD Programs at HBCUs

Often, HBCUs address the needs of minority students in their mission statements, expressly committing their service to lower socioeconomic groups in society, which often includes minorities. Currently, there are eight ASHA-accredited graduate CSD programs (see Appendix) at HBCUs in the United States (ASHA, 1999). All of these programs are located in the southeastern portion of the United States, and all have somewhat similar admissions requirements regarding GRE, GPA, letters of recommendation, personal statements, and letters of intent that are consistent with predominantly White universities. However, only two of these universities have a cut-off score for the GRE, suggesting that there is a more flexible policy with this component. This appears to reflect university standards derived from similar requirements to gain access into these universities' graduate schools, not just the CSD programs themselves.

HBCUs provide a valuable service to the profession of speech-language pathology by increasing its diversity. Saenz, Wyatt, and Reinard (1998) stated, "There is a need for more bilingual and minority speech-language pathologists to serve an increasingly diverse population" (p. 39). However, a substantial disparity still exists between the percentage of minorities in the population of the United States and the percentage of minorities who are ASHA certified (ASHA, 2002). According to an ASHA (2003) report, only 2%, or 822 out of 37,968, of certified speech-language pathologists who self-reported their race were African American. However, according to the 2000 Census, African Americans constituted 34,658,190 total citizens or 12% of the United States population (United States Census Bureau, 2004). HBCUs address this disparity by increasing the number of minority candidates educated to join the professions. The literature lacks data reflecting graduation rates of African Americans from master's-level CSD programs at HBCUs and how these rates compare to those of universities not categorized as HBCUs.

Future research will hopefully offer additional answers to questions concerning how the professions of CSD can best and most fairly predict success of applicants in graduate school and ultimately, in the professions. With this idea in mind, Powell (1986) cogently noted the following:

> If we can identify those factors that are related to the academic success of minority students, we should be in a better position to plan for that success, that is, to structure the educational environment so as to enhance or impede those related factors, depending on the nature of their effect. (p. 6)

METHOD

A quantitative design using retrospective data analyzed through multiple regression and Pearson Product-Moment correlational analyses was conducted. This methodology focused on the admissions criteria that best predicted success in a master's-level CSD program at an HBCU. Success in this master's-level CSD program was operationally defined as a passing score on the Praxis examination on the first attempt and by delineating ranges for the overall graduate clinical practica GPA with 3.0-3.49 set as the lower boundary, and greater than or equal to 3.5 as the upper boundary. The investigator anticipated that these ranges would yield more information by examining specific levels of performance in graduate clinical practica. However, the results indicated that these ranges were irrelevant, as the correlations involving overall graduate clinical GPA were very weak. The relevant and potential predictors of success or predictive variables and any relationships that existed between specific variables were determined by using data from recent files of individuals who obtained a master's degree in CSD from the HBCU that served as the setting for this study. The three core criteria for admission to the CSD program in this study's setting were analyzed, which consisted of the GRE verbal and quantitative subtest scores and UGPA.

There was no direct contact with any participants. In 1 business day, the investigator extracted the data from the academic files of students who completed a master's degree in CSD from the study's setting during a period of 3 1/2 years. There were 44 graduates from the CSD master's degree program during this time. The makeup of the ethnicity of these 44 graduates consisted of 26 (59%) Caucasians, 16 (36%) African Americans, 1 (2%) American Indian, and 1 (2%) other.

All of the necessary data were obtained, with the exception of a GRE score report for one student. Therefore, complete data were obtained for 43 of the 44 graduates. The files were contained in a small room in one of the university's speech and hearing clinics. The files were removed from their locked filing cabinets on the day of the data collection. The study's investigator then entered the information into a computerized spreadsheet, formulated on a personal laptop computer. Each graduate whose information was entered into the spreadsheet was assigned a number, for tracking purposes only. The data were analyzed through the Statistical Package for the Social Sciences, version 9.0 (SPSS, Inc., 1998). The data are later presented in tabular and graphic forms.

The global question for this study was the following query: What is the predictive value of admissions criteria for entry into a master's-level CSD program at an HBCU? In order to successfully answer this question, procedures were developed for the following six research questions:

1. Does overall UGPA predict passing the Praxis examination on the first attempt?
2. Does an applicant's GRE General Test verbal subtest score predict a first-time passing score on the Praxis examination in speech-language pathology?
3. Does the sum of the GRE General Test verbal and quantitative subtest scores predict a first-time passing score on the Praxis examination?
4. What is the relationship, if any, between overall UGPA and the overall graduate clinical practica GPA?
5. What is the relationship, if any, between an applicant's GRE General Test verbal subtest score and overall graduate clinical practica GPA?
6. What is the relationship, if any, between the sum of the GRE verbal and quantitative subtest scores and overall graduate clinical practica GPA?

RESULTS

The investigation yielded the following results in regards to the overall research question:

1. Does overall UGPA predict passing the Praxis examination on the first attempt? The overall UGPA was taken from each graduate's file as well as the Praxis examination score from his or her first attempt at the examination. Multiple regression analysis was used to evaluate this data to identify whether overall UGPA was predictive of a passing score on the first attempt at the Praxis examination.

   UGPA was not found to be statistically significant in predicting a first-time passing score on the Praxis examination. This information was revealed using a 2 X 2 contingency table analysis (see Table 1) for UGPA and the number of graduates who passed the Praxis examination on the first attempt. The cut-off point for the UGPA was 3.0, because this was one of the admissions requirements for the master's program.

TABLE 1. Ability of UGPA to Predict a First-Time Passing Score on the Praxis Examination

UGPA	No. passing	No. failing	Proportion passing	Odds ratio	Confidence interval (95%)
≥ 3.0	16	16	0.5	1.0	(0.3, 56.0)
< 3.0	6	6	0.5		

Note. Number of test takers = 44.

Because the odds ratio was one, an individual with an UGPA greater than or equal to 3.0 was as likely to pass the Praxis examination on the first attempt as was a person with an UGPA less than 3.0. The confidence interval did not include zero, and therefore yielded a statistically significant result.

2. Does an applicant's GRE General Test verbal subtest score predict a first-time passing score on the Praxis examination in speech-language pathology? Each graduate's GRE verbal subtest score was extracted from the academic files, and the first-attempt Praxis score obtained for the data in the first research question was again used. A multiple regression analysis was performed on this data as well. There were two circumstances to note. First, if a graduate's file contained more than one reported score for the GRE verbal subtest, then the highest score was extracted for this study's data. Second, some applicants were admitted to the setting's master's-level CSD program even if they did not achieve the required score of 400 on the verbal subtest and a sum of 800 on the verbal and quantitative subtests.

The GRE verbal subtest score was revealed to be statistically significant in predicting a first-attempt passing score on the Praxis examination. The analysis performed was a 2 X 2 contingency table (see Table 2) including the highest GRE verbal subtest score and the number of graduates who passed the Praxis examination on the first attempt. The cut-off point was a GRE verbal score of 400, as this was an admissions requirement to the university's master's-level CSD program. Note that the sample size equals 43 instead of 44 for the data pertaining to the GRE verbal and quantitative scores because one graduate's GRE scores were missing from the academic files. A graduate who scored greater than or equal to 400 on the GRE verbal subtest was 2.4 times more likely to pass the Praxis examination on the first attempt than a graduate who earned a GRE verbal score less than 400.

TABLE 2. Ability of GRE General Test Verbal Subtest Score to Predict a First-Time Passing Score on the Praxis Examination

GRE verbal subtest score	No. passing	No. failing	Proportion passing	Odds ratio	Confidence interval (95%)
≥ 400	14	10	0.58	2.40	(0.70, 162.00)
< 400	7	12	0.37		

Note. Number of test takers = 43.

3. Does the sum of the GRE General Test verbal and quantitative subtest scores predict a first-time passing score on the Praxis examination? The Praxis examination score and the GRE verbal subtest score from questions 1 and 2 were again used, and the GRE quantitative subtest score was extracted from the graduates' files. The sum of the verbal and quantitative subtest scores was calculated. Similar to the GRE verbal subtest score used earlier, if a graduate's file contained more than one reported score for the GRE quantitative subtest, then the highest score was extracted for this study. A multiple regression analysis was also employed to answer this third research question.

The sum of the GRE verbal and quantitative subtest scores was more statistically significant in predicting a first-time passing score on the Praxis examination than the GRE verbal subtest score alone. The analysis performed was a 2 X 2 contingency table (see Table 3) for the sum of the GRE verbal and quantitative subtest scores and the number of graduates who passed the Praxis examination on their first attempt. The cut-off point

for the data was a total GRE score of 800, as this was also a requirement for admission. A graduate who attained a sum greater than or equal to 800 on the GRE verbal and quantitative subtests was 3.2 times more likely to pass the Praxis examination on the first attempt than was a graduate whose sum on these same subtests was less than 800.

TABLE 3. Ability of the Sum of the GRE General Test Verbal and Quantitative Subtest Scores to Predict a First-Time Passing Score on the Praxis Examination

Sum of GRE V and Q scores	No. passing	No. failing	Proportion passing	Odds ratio	Confidence interval (95%)
≥ 800	16	11	0.59	3.20	(0.90, 264.00)
< 800	5	11	0.31		

Note. Number of test takers = 43; V = verbal; Q = quantitative.

In relation to this third research question, a 2 X 2 X 2 contingency table (see Table 4) was also produced to correct for UGPA in the analysis for the sum achieved on the GRE verbal and quantitative subtest scores. These results provided significant information. A graduate who earned an UGPA less than 3.0, yet obtained a sum greater than or equal to 800 on the GRE verbal and quantitative subtests was 5 times more likely to pass the Praxis examination on the first attempt than was a graduate whose UGPA was less than 3.0 and had a sum of less than 800 on the GRE verbal and quantitative subtests. This revealed how important the sum of these GRE subtest scores is in predicting passing the Praxis examination on the first attempt.

TABLE 4. Ability of UGPA Ranges to Predict a First-Time Passing Score on the Praxis Examination

UGPA	Sum of GRE V and Q scores	No. passing	No. failing	Odds ratio	Confidence interval (95%)
≥ 3.0	≥ 800	11	8	2.8	(0.6, 218.0)
≥ 3.0	< 800	4	8		
< 3.0	≥ 800	5	3	5.0	(0.3, 676.0)
< 3.0	< 800	1	3		

Note. Number of test takers = 43; V = verbal; Q = quantitative.

The final analysis performed for Research Question 3 was a logistic regression model to determine the probability of passing the Praxis the first time based on UGPA, GRE verbal subtest score and the sum of the GRE verbal and quantitative subtest scores. The model was produced using forward and backward linear regression. In both analyses, the only statistically significant input variable was the sum of the GRE verbal and quantitative subtest scores. It is important to note that the GRE verbal subtest score was initially statistically significant, but due to the high correlation between the verbal subtest score and the sum of the GRE verbal and quantitative subtest scores (0.82, 95% confidence interval [0.69, 0.9]), the sum of the verbal and quantitative subtest scores was the only factor necessary in the model. The model is described by the equation, Probability of Passing Praxis = $1/\{\exp^{[6.37 - 0.008x(\text{GRE SCORE})]} + 1\}$, in which the GRE score is the sum of the verbal and quantitative subtest scores.

The remaining three research questions sought to determine the relationships that existed, if any, between the three previously discussed core admissions requirements and overall graduate clinical practica GPA. In order to provide insight into how an applicant would likely perform in graduate clinical practica given the core admissions criteria, these remaining research questions were formulated. Lower and upper ranges or thresholds were originally set at a clinical GPA between 3.0 and 3.49 and greater than or equal to 3.5, respectively. The intention of these ranges was to define two levels of clinical performance. Pending the data trends, these ranges could have been

further narrowed in order to provide more detailed results. However, these ranges became irrelevant as the data results were obtained. The reason for this action is addressed in Research Questions 4 through 6. Also in these remaining questions, this investigator chose to take academic-based variables and focus on whether they were correlated to clinical performance.

4. What is the relationship, if any, between overall UGPA and the overall graduate clinical practica GPA? The UGPA extracted for the first research question was again used, and the overall graduate clinical practica GPA was calculated according to AAMU (2003). The calculation of quality points assigned 4 points for each grade of A, 3 points for each grade of B, 2 points for each grade of C, 1 point for each grade of D, and zero points for each grade of F. Each letter grade's respective quality points were multiplied by the number of credits hours allotted for the respective courses. The sum of these points was computed to obtain the grade points. Next, the sum of the total number of credit hours attempted was obtained. Last, these two values were entered into the following equation to obtain the overall graduate clinical practica GPA: clinical practica GPA = total grade points/total credit hours attempted.

   Any clinical practica grades of D or F did not count toward the clock hours required for the Certificate of Clinical Competence from ASHA, yet any such grades were still collected for this study because it was determined that they could yield valuable information in terms of overall clinical performance. Once the required data for this research question were obtained, a correlational analysis was performed to find out if a relationship existed, and if so, how strong this relationship was.

Again, the question was the following query: Is there a correlation between UGPA and overall graduate clinical practica GPA? The correlation between UGPA and overall graduate clinical practica GPA was 0.07, and the 95% confidence interval was (-.22, 0.36). Given that the confidence interval included zero, the relationship between these variables was not strong, nor was it statistically significant. Because R^2 was low, 0.01, the correlation coefficient was also low and the correlation was not statistically significant. This finding was logical because there were graduates who possessed UGPAs of 2.5, yet these same graduates had overall graduate clinical practica GPAs of 4.0. This was an indicator that these two measures did not correlate well. It is because of this finding and those that follow that the clinical GPA ranges were not utilized. It is important to note that the correlation, R, is not simply the square root of the R^2 value, which is presented in the following graphs including the logarithm function. However, for the linear models, R is the square root of the given R^2 values (see Figure 1). Also note that for the graphs in Research Questions 4 through 6, a log or natural log function was used to place the data over a linear fit. The log fit levels off around a clinical GPA of 4.0. This is more accurate for the real world, as GPA cannot be above 4.0 based on a 4.0 scale.

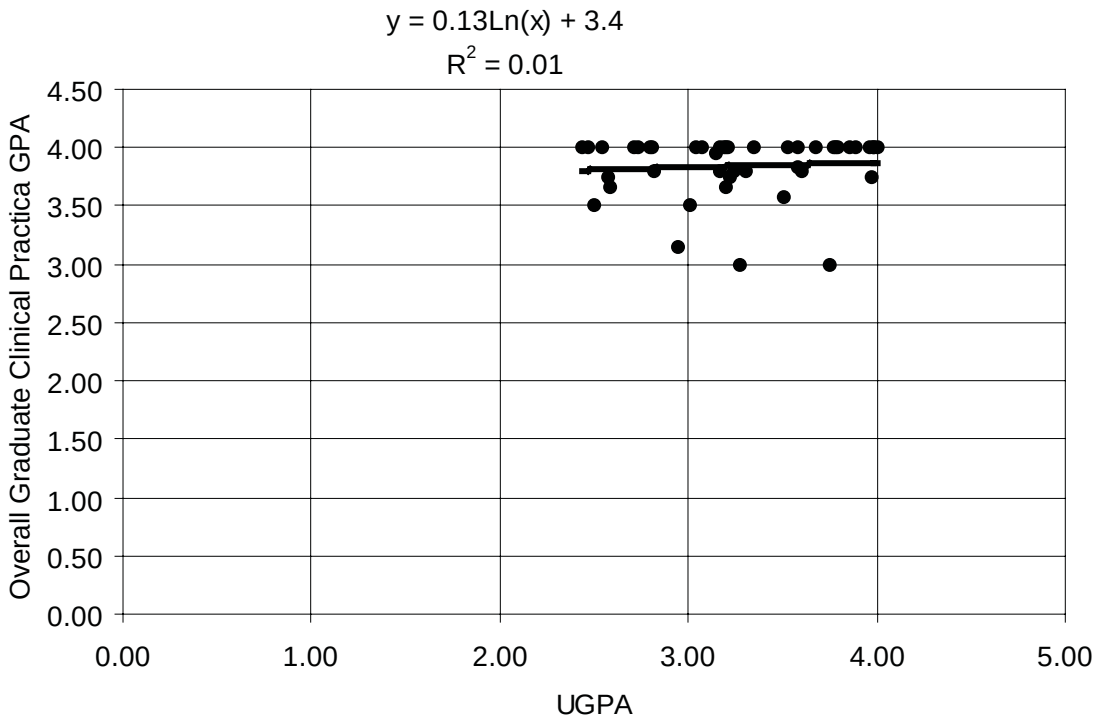

FIGURE 1. Correlation between UGPA and overall graduate clinical practica GPA.

5. What is the relationship, if any, between an applicant's GRE General Test verbal subtest score and overall graduate clinical practica GPA? The verbal subtest scores gathered for several of the previous research questions were again used, as was the overall graduate clinical practica GPA from the previous question. A correlational analysis was also performed to answer this question.

The correlation between the GRE verbal subtest score and the overall graduate clinical practica GPA was 0.36. With a 95% confidence interval of (0.06, 0.59), the relationship was weak, but the confidence interval did not include zero, so it was still considered to be significant. For the correlation between GRE verbal score and clinical GPA, a slightly stronger relationship was exhibited, presented in Figure 2.

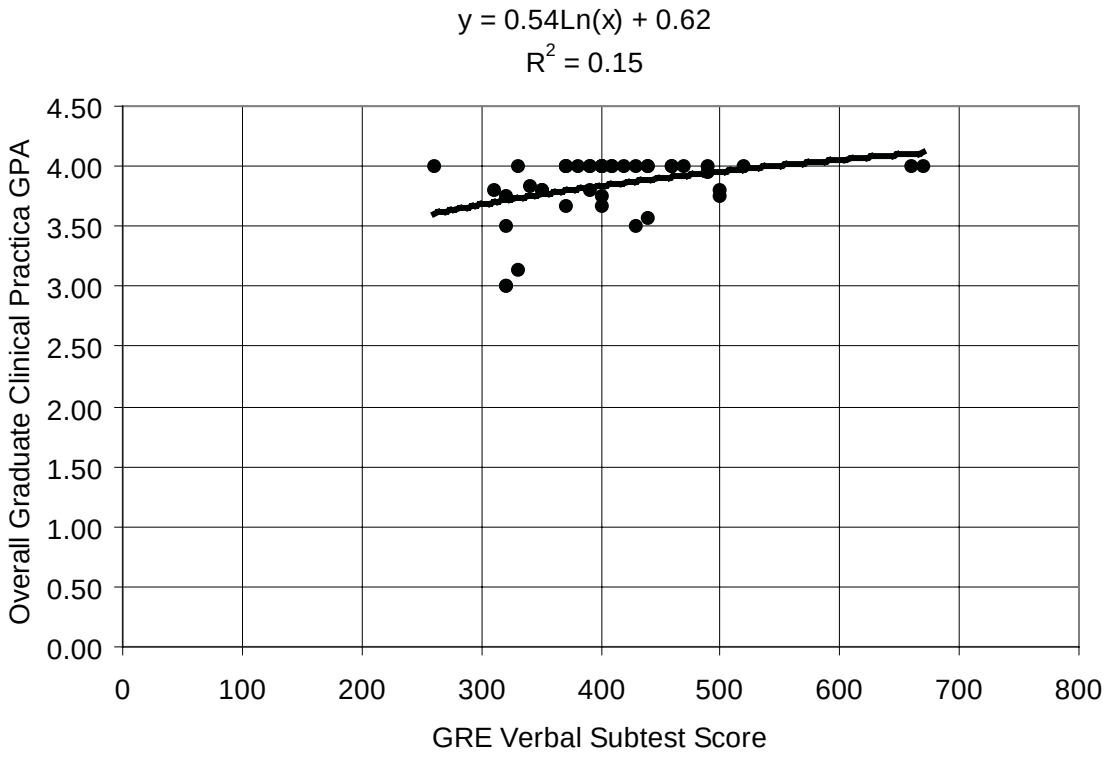

FIGURE 2. Correlation between GRE verbal subtest score and overall graduate clinical practica GPA.

6. What is the relationship, if any, between the sum of the GRE verbal and quantitative subtest scores and overall graduate clinical practica GPA? Again, data obtained regarding the sum of the verbal and quantitative subtest scores and clinical practica GPA were used. A correlational analysis was then applied to answer this final question.

The correlation between the sum of the GRE verbal and quantitative subtest scores and the overall graduate clinical practica GPA was 0.37. With a 95% confidence interval of (0.08, 0.6), the relationship was weak, but again the confidence interval did not include zero, and the relationship was, therefore, determined to be significant. The scatterplot in Figure 3 illustrates this.

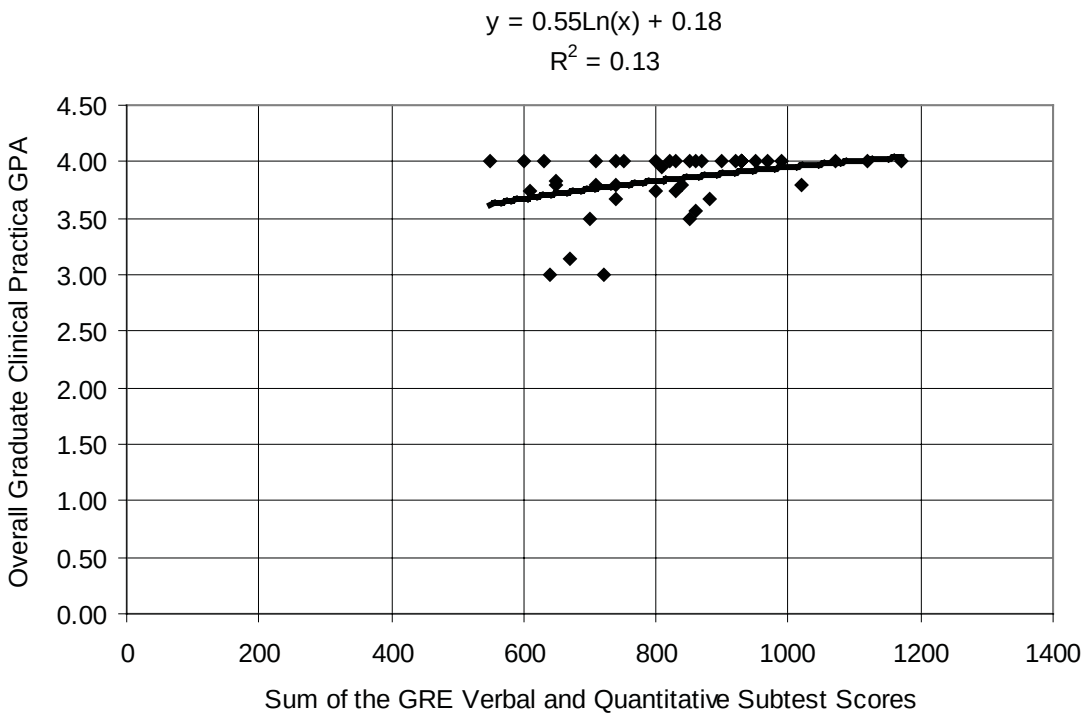

FIGURE 3. Correlation between sum of the GRE verbal and quantitative subtest scores and overall graduate clinical practica GPA.

Additional Findings

Figure 4 reveals the correlation between the GRE verbal subtest score and UGPA, along with a best fit line. Observe the scatter in the data. R^2 is the coefficient of determination, and conveys the amount of variability that is explained by the input or regressor variable that is UGPA herein. In this case, R^2 and R, -.31, are small. Hence, the UGPA was not statistically significant in determining the GRE verbal subtest score. The equation in Figure 4 delineates the expected GRE verbal subtest score for a given UGPA. Most importantly, the figure allows for the viewing of the lack of correlation and negative correlation between UGPA and GRE verbal subtest score.

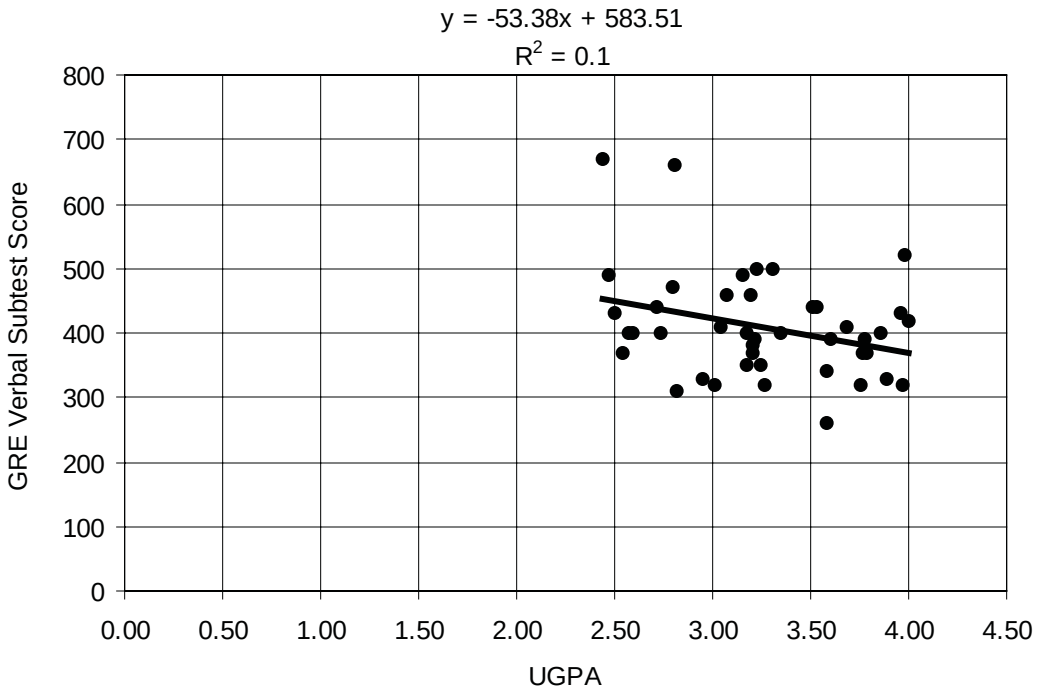

FIGURE 4. Correlation between UGPA and GRE verbal subtest score.

Even a weaker correlation is found in Table 5. R^2 is lower than that in the previous graph. Therefore, UGPA was a poor predictor of the GRE quantitative score.

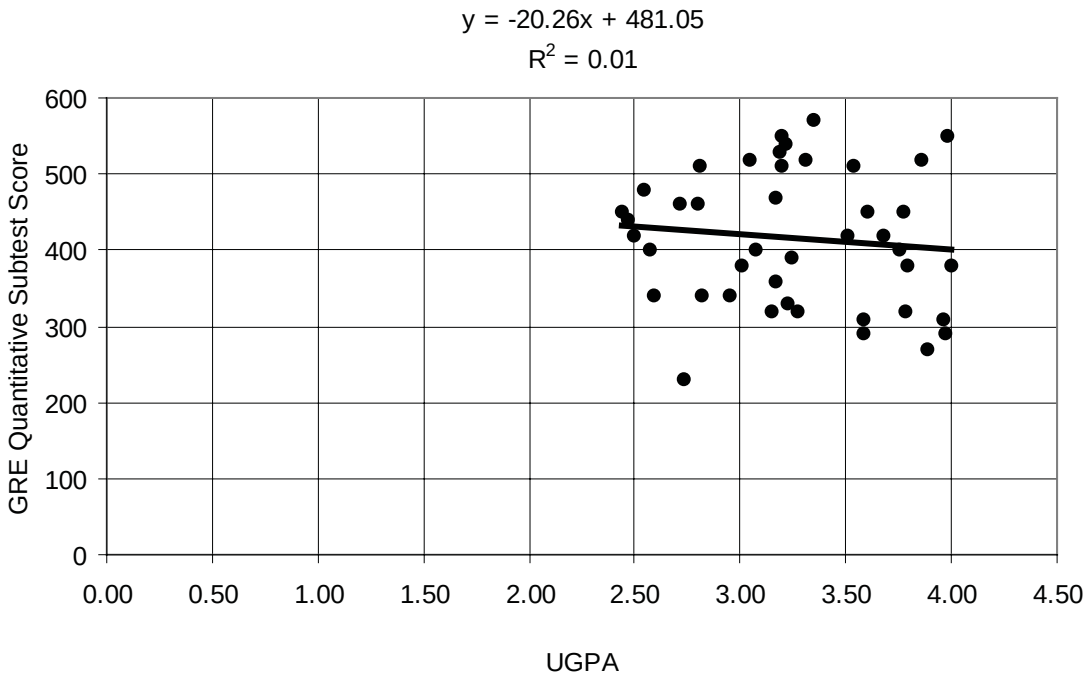

FIGURE 5. Correlation between UGPA and GRE quantitative subtest score.

In the scatterplot in Figure 5, the UGPA was, in fact, a poorer predictor of the GRE quantitative score than it was for the GRE verbal subtest score. Given that UGPA was not a good predictor of these two separate GRE verbal and quantitative subtests, the UGPA was also not predictive of the sum of the GRE verbal and quantitative subtest scores. The scatterplot in Figure 6 reveals the correlation between UGPA and the sum of the GRE verbal and quantitative subtest scores.

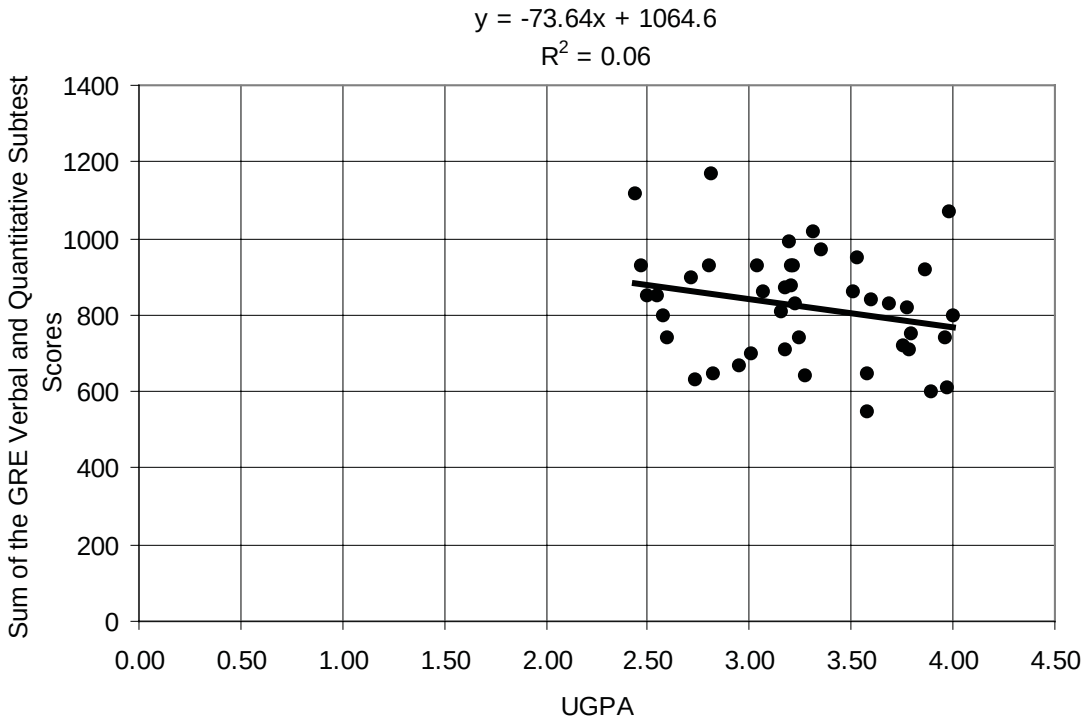

FIGURE 6. Correlation between UGPA and the sum of the GRE verbal and quantitative subtest scores.

When the GRE verbal and quantitative subtest scores were compared to each other, the R^2 was much higher than that of the R^2 for the UGPA and these same subtest scores. This correlation between the GRE verbal subtest score and GRE quantitative subtest score is demonstrated in the scatterplot in Figure 7.

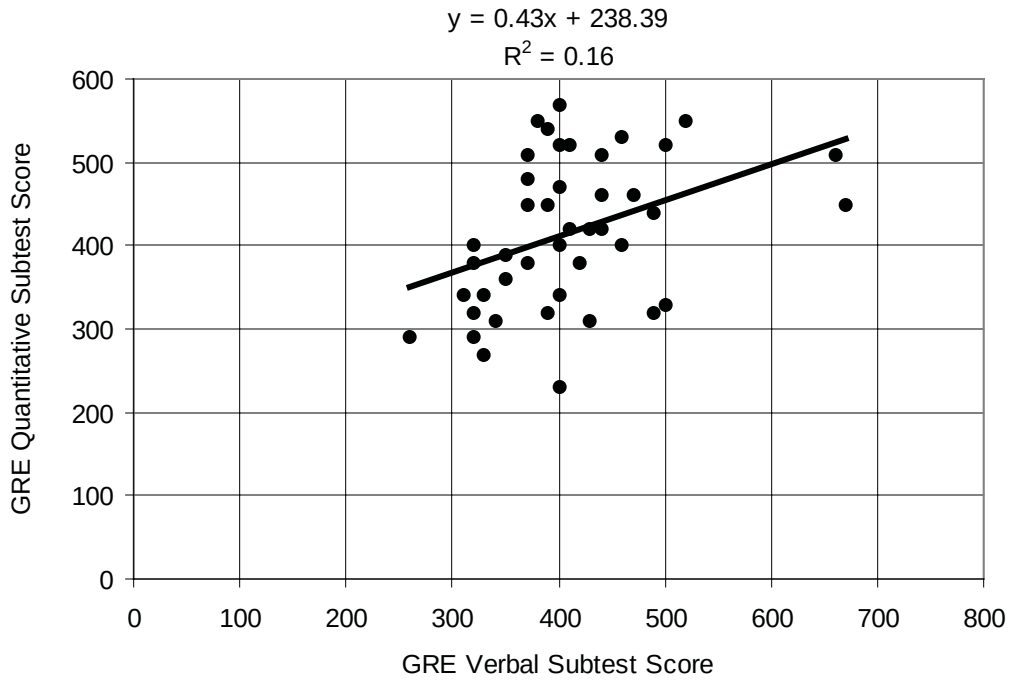

FIGURE 7. Correlation between GRE verbal subtest score and GRE quantitative subtest score.

Similar to the GRE verbal subtest score and overall graduate clinical practica GPA from Research Question 5, there were high correlations and R^2 values, as was expected, between the GRE verbal subtest score and the sum of the GRE verbal and quantitative subtest scores. Figure 8 is provided to illustrate this. Given that the correlation between the GRE verbal subtest score and the sum of the verbal and quantitative subtest scores was very strong, 0.82, it was concluded that these two GRE correlations were very close, if not exact. For the correlation between the GRE verbal subtest and overall graduate clinical practica GPA, a stronger relationship was noted. Recall, for Figures 2 and 3, which dealt with clinical GPA and forms of the GRE verbal and quantitative subtest scores, R^2 was between 0.13 and 0.15, and the correlation coefficient was about 0.37. The R^2 values were very close, and this confounding is addressed later. Because the GRE verbal subtest score correlated so well with the sum of the GRE verbal and quantitative subtest scores, these same measures correlated about equally with overall graduate clinical practica GPA (see Figure 8).

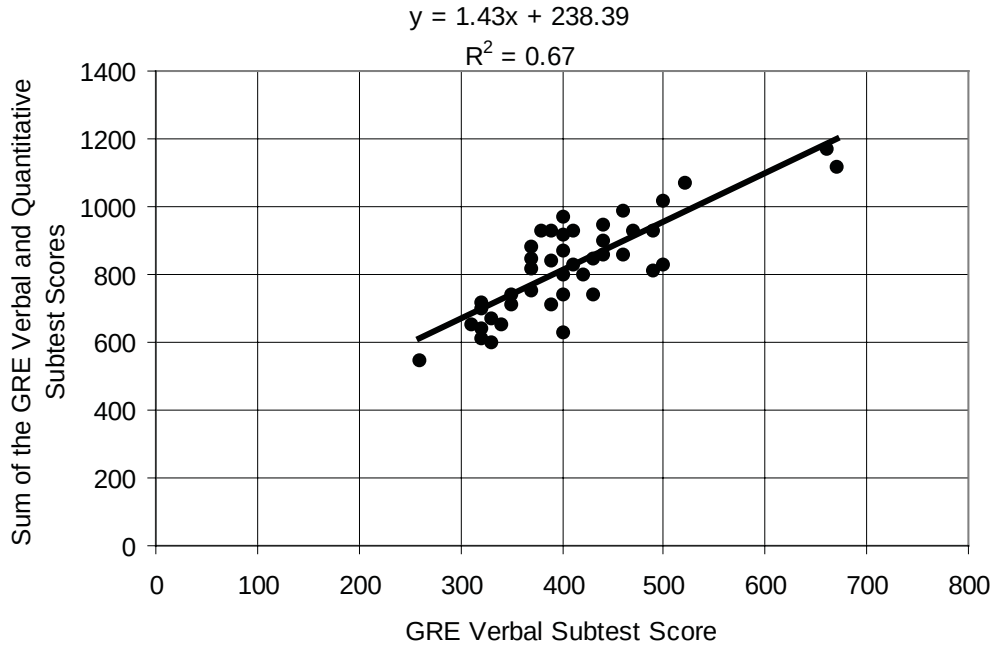

FIGURE 8. Correlation between GRE verbal subtest score and the sum of the GRE verbal and quantitative subtest scores.

The GRE quantitative subtest was correlated with the sum of the GRE verbal and quantitative subtest scores, a slightly better correlation and R^2 were revealed (see Figure 9). Indeed, this figure and the other eight figures are important because they allow for the viewing of confounders in the multiple regression analyses. If UGPA and the GRE measure(s) had a strong correlation, about 0.7 or higher, then they could have been eliminated from the model. This is what occurred with the GRE verbal score and the sum of the GRE verbal and quantitative subtest scores. When the forward regression model was conducted, the sum of the GRE verbal and quantitative subtest scores was chosen as the first variable to model. The second variable selected was the GRE verbal score, but because it had such a strong correlation with the sum of the GRE verbal and quantitative subtest scores, the GRE verbal score did not help in predicting any more passes or failures with the first attempt on the Praxis examination. Therefore, the GRE verbal score was not used. Last, UGPA was added to the model. This variable was excluded because it did not have any statistical relationship to passing the Praxis examination on the first attempt, as can be seen from the odds ratio earlier in this chapter. The only input variable in the final model was the sum of the GRE verbal and quantitative subtest scores.

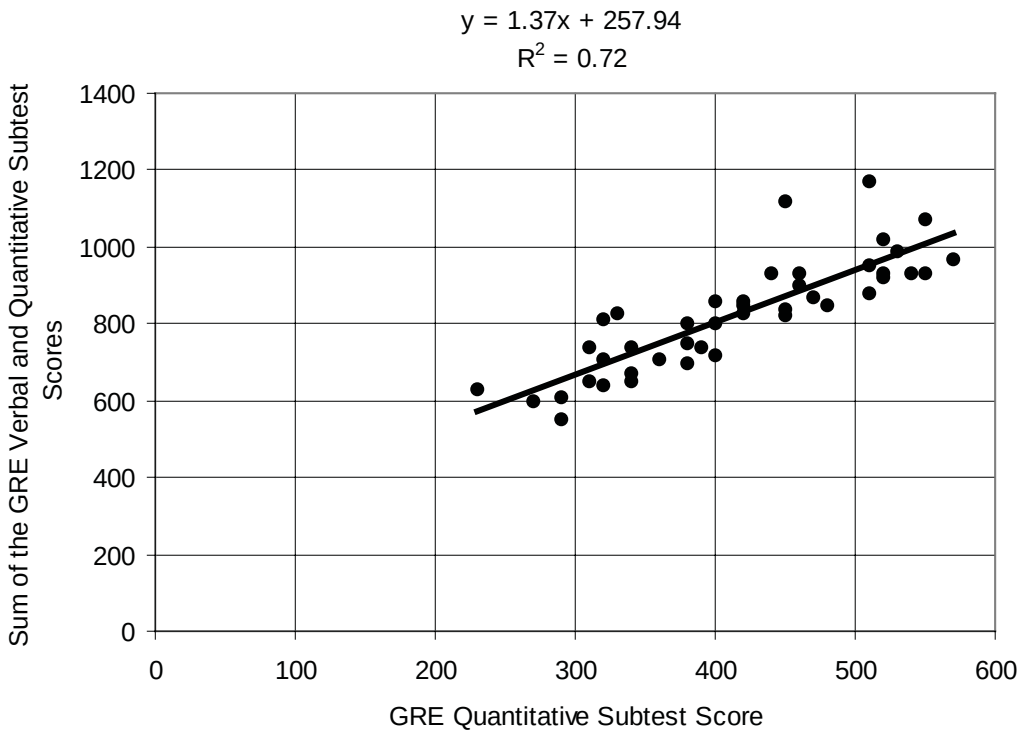

FIGURE 9. Correlation between GRE quantitative subtest score and the sum of the GRE verbal and quantitative subtest scores.

The results presented here are consistent with each other. Also, these findings led to the successful outcomes of this study because the predictive quality, or lack thereof in some instances, of the setting's admissions criteria was identified. These criteria, GRE verbal and quantitative subtest scores and UGPA, were analyzed in relation to first-time passing score on the Praxis examination, overall graduate clinical practica GPA, and in some instances, each other. Overall, the following three separate predictors of first-time Praxis passing scores were found: GRE verbal subtest score, the sum of the GRE verbal and quantitative subtest scores, and UGPA in conjunction with the sum of the verbal and quantitative subtest scores. Overall graduate clinical practica GPA was most strongly correlated with the following two individual variables: the GRE verbal subtest score and the sum of the verbal and quantitative subtest scores.

Limitations

This investigation was limited to only 1 of 8 ASHA-accredited HBCUs that offer a master's degree in CSD, which could be categorized as both a limitation and delimitation because using only one university as the setting was planned from the study's inception. A second limitation lies in the reporting procedures for the Praxis examination. The investigator contacted ETS, the administrating agency of the Praxis examination in speech-language pathology. The Privacy Act of 1974 prevented the investigator from directly obtaining the Praxis scores and number of attempts. However, using four methods of redundancy in CSD program records, the investigator was able to obtain the Praxis examination scores and attempts recorded for each graduate in this study's data.

RECOMMENDATIONS

Future studies investigating the predictors of success for CSD students are encouraged to examine the roles of GPA and GRE subtest scores in order to further verify the utility of these measures as admissions requirements. In addition, if future studies can somehow quantify letters

of recommendations and reference forms for admissions into graduate-level CSD programs, this would provide valuable insight, as the CSD literature is deficient of this information. Given the need for increasing the diversity of the CSD professions, future research should also examine how the success of minority students can best be predicted in order to increase the representation of these individuals in the field.

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APPENDIX

ASHA-Accredited Graduate CSD Programs at HBCUs

College or University	City, State	Admissions Requirements		
Alabama A&M University	Normal, AL	GPA Requirements	3.0 overall GPA	
		GRE Requirements	400 verbal, 400 quantitative	
		Additional Requirements	3 letters of recommendation; goals & objectives statement	
Howard University	Washington, DC	GPA Requirements	Provide transcripts	
		GRE Requirements	Provide scores	
		Additional Requirements	3 letters of recommendation; letter of intent with one page narrative	
University of the District of Columbia	Washington, DC	GPA Requirements	3.0 overall GPA	
		GRE Requirements	Review of performance on GRE verbal reasoning and analytical writing subtests	
		Additional Requirements	Undergraduate degree in speech-language pathology preferred, but not required.	
North Carolina Central University	Durham, NC	GPA Requirements	3.0 overall GPA; 3.0 major GPA	
		GRE Requirements	No cut-off	
		Additional Requirements	2 letters preferably from professors	
South Carolina State University	Orangeburg, SC	GPA Requirements	3.0 overall undergraduate GPA	
		GRE Requirements	Provide scores (or Miller Analogies Test scores)	
		Additional Requirements	2 letters of recommendation from former professors	
Hampton University	Hampton, VA	GPA Requirements	3.0 overall GPA	
		GRE Requirements	Provide official scores of performance on the GRE	
		Additional Requirements	Applicant must hold a bachelor's degree from a regionally accredited college or university; have an undergraduate record of above average scholarship; submit an official transcript of all undergraduate and graduate work indicating degrees earned; provide 2 letters of recommendation from individuals familiar with the personal and professional qualifications of the applicant; provide a personal statement.	
Tennessee State University	Nashville, TN	GPA Requirements	Unconditional classification	3.5 overall GPA
			Conditional classification	Between 2.3 and 3.4
		GRE Requirements	Unconditional classification	-
			Conditional classification	Between 600 and 870*
		Additional Requirements	For admission with unconditional classification, a minimum combined score (verbal and quantitative) on the GRE or a Miller Analogies Test score of 30	
Southern University and A&M College	Baton Rouge, LA	GPA Requirements	-	
		GRE Requirements	Provide scores	
		Additional Requirements	3 letters of recommendation; letter of intent	

Note. * = or a minimum score of 25 on the Miller Analogies Test; Investigator developed the chart using data from ASHA (1999).

ECHO

NBASLH AS THE VANGUARD: TOWARD INTERNATIONALIZATION OF CSD

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ECHO

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Communication is a critical aspect of daily existence, and most people in the world communicate on some level at some point every day of their lives. The primary role of Communication Sciences and Disorders (CSD) is to identify the causes and consequences of communication obstacles, and facilitate the communication abilities of all peoples. The scope of practices in the CSD discipline has been growing since the inception of the field. Professional practice has expanded with the changing needs of clients and with ever-increasing knowledge of the ways that communication abilities and/or impairments affect the participation and function of those served. In spite of this growth and awareness critical gaps remain in the CSD field.

In this article, the current context that underscores these gaps is examined, and some conceptual framework considerations are proposed to address these gaps through research, curriculum content, and pedagogy, as well as assessment and intervention services. In addition, the article makes a proposal to the membership of the National Black Association for Speech-Language and Hearing (NBASLH) to utilize our unique history and perspective in advancing conscious internationalization of the field, rather than as an after thought.

Examining the Current Context

There are two social conditions that have significant implications for teaching, research, and service in Communication Sciences and Disorders: the history of inequalities in special education services, and the changing demographics in the U. S.

History of inequalities in special education services

The first important condition to consider is the extensive history of disparities and persistent inequalities in services and education for children from diverse cultural, linguistic, and economic backgrounds. A longstanding history of overrepresentation of African Americans, Latinos, and children who are poor in special education has persisted for many years. Losen and Orfield (2002) reported that African Americans, who were 17% of the national school population, represented 33% of those who were suspended from school, 33% of those identified as having cognitive impairments, and only eight percent of those enrolled in gifted programs. Similarly, Artiles and colleagues (Artiles, Rueda, Salazar, & Higareda (2002) found that Latino children who were limited English proficient (LEP) or English language learners (ELL) were overrepresented in special education as speech-language impaired.

The annual performance report of special education in Michigan (2003-2004), as a specific case, also shows significant disparities. The Michigan Department of Education reports that children of color there were overrepresented in special education in 82% of the 57 school districts, and that African American children were overrepresented more than any other group. Additionally troubling is the data that MDOE reported on children of color with IEPs (Individual Education Plans). It was reported that African American and Latino children with IEPs are respectively 50% to 60% more likely to drop out of school than their Euro American counterparts.

Some children of color are accurately placed in special education. Children of color, however, those who are poor, and those who speak languages other than English are more frequently erroneously identified as having learning needs that require the support of special education services out of proportion with their numbers in the general population.

Demographic changes in the U. S.

Rapidly changing demographics is another condition that has significant implications for research, curriculum content, pedagogy, and competencies in CSD. As a result of the newest form of globalization[1], demographics

1 Globalization is not a new phenomenon. Review Steger (2003) who outlines five historical periods where social exchanges were accelerated on a global scale. One such period was the early modern period that developed the Atlantic slave trade (p.28 – 29).

in the U. S. are changing at monumental rates. These demographic changes are largely due to increased immigration. U. S. demographers have projected that by the year 2050 people of color will represent 50% of the U. S. population and that this transformation will primarily be comprised of immigrants from Latin America, Africa, and Asia. Immigrants bring to their new host country their languages, world views, cultural practices, and perceptions about communication, child development and the need for services. These variations change the cultural and linguistic landscape of the U. S. (Britain & Matsumoto, 2005), and are particularly fueled by the increase in a critical mass of groups of people with different perceptions about assimilating into some aspects of the dominant U. S. culture. (Kotlowitz, 2007).

Currently there are over 48 million people living in the U. S. who speak languages other than English (U. S. Census, 2002), and this number is only expected to increase in the future (Moxley, Mahendra, & Vega-Barachowitz, 2004). It is anticipated that if approximately 42 million people in the U. S. have a communication disorder (ASHA 1997-2004), then the opportunities for communication sciences professionals to work with children and families from cultural and linguistic groups different than their own is highly likely, and significantly magnified. These opportunities are increasingly possible not only within the U. S. borders but also abroad (see ASHA Leaders published in February 2005, December 2006, and January 2007 where researchers discussed growing interest and opportunities for speech-language pathologists and audiologists to work and learn in other countries).

As a field, we have progressed and worked hard to increase our abilities and level of preparation for serving an increasingly culturally and linguistically diverse population. Nevertheless, we have much more work to do. Data reported by ASHA in 2004 show that less than six percent of the 122, 000 ASHA members are speakers of languages other than English. Also, results of a survey conducted by Roseberry-Mckibbon, Brice, and O'Hanlon (2004) revealed that 60% of a national sample of 1,736 public school speech-language pathologists believed that they frequently did not speak the language of the student being assessed, 31% reported that they frequently lacked knowledge of development norms in students' primary languages, 21% expressed limited knowledge about the culture of the student being assessed, and 14% indicated that they experienced difficulty distinguishing a language difference from a language disorder.

Furthermore, it has only been within the last 12.5 years (since 1994) that accredited university Speech-Language Pathology and Audiology programs have been strongly urged by the American Speech-Language-Hearing Association to include content reflective of a multicultural society in their curricula (Stockman, Boult, & Robinson, 2004). The results of an inventory conducted in 2003 by Stockman, Boult, & Robinson indicated that surveyed faculty were interested in acquiring improved guidelines for addressing multicultural and multilingual content in their coursework and clinical practica (cited in Stockman et al., 2004). As a result of this research, several resources were provided through the ASHA web site (www.asha.org) that support the inclusion of multicultural and multilingual issues in curricula associated with CSD. These important resources, no doubt, have been very helpful for faculty wanting to infuse information about cultural and linguistic matters into coursework and clinical practice. Nevertheless, distinct gaps remain in academic and clinical curricula, which if filled would (1) further support the ability of CSD professionals effectively meeting the demographic challenges of the 21st century, here and abroad, and (2) situate CSD within a context connecting the broader global (and local) milieus.

The previously mentioned conditions, inequalities in special education, and the rapidly changing demographics in the U. S., are only two of the conditions that confirm gaps in CSD research, curriculum content, pedagogical processes, and service provision. Let us now consider two questions in order to provide further background on some of those gaps.

1. What do CSD professionals need to understand about globalization, and by default, the social-cultural, economic (access to resources and services), and political (unequal relations of power) histories of prospective clients in order to provide the most effective services?

Globalization is defined primarily as a dynamic and multidimensional set of economic processes that produce, reproduce, and strengthen global interdependencies while at the same time, people experience an increasing awareness of interconnections between their own countries and other countries (Brecher & Costello, 1994; Ellwood, 2004; Steger, 2003). It should be noted how intensely groups of people experience this increased awareness of interconnectedness depends on one's economic group. Globalization is one of the primary forces of social transformation in the 21st century, and is a major cause of

changing demographics and relationships within the U. S. and around the world. One major consequence of the globalization is the massive migration of people (legal, illegal, forced, and voluntary) within and between countries. The processes of globalization are uneven; that is, they affect some countries more positively or more negatively than others (Brecher & Costello, 1994; Davis, 2006; Steger, 2003). Within each country some economic groups are affected more adversely than other economic groups. For example, as a result of free trade agreements (e.g., NAFTA), some countries (such as Canada, Italy, United Kingdom and United States) have increased the volume of their commercial exchange rates; yet, this increase has adversely affected the common workers (salary earners) in these countries. On the other hand, most of the Global South (e.g., Africa, some parts of Asia, and Latin America) have experienced declining value in their exchange rates, job losses, and declining education and health systems, as well as increasing disparities between the concentrated wealth at the top and concentrated poverty at the base. The latter (i.e., increasing disparities between the wealthy and those in poverty) also has been the case in the industrial North, especially in the U. S, and has been a cause for migration.

Although the term globalization has been used frequently in the social science literature, significant accelerations of global interdependencies have occurred since the prehistoric period. In other words, globalization is a relatively "new" word to describe a comparatively "old" process. The economic, political, cultural dimensions of globalization may have more direct and intense effects on communication sciences and disorders. The second question to consider in verifying the aforementioned gaps is:

2. What is culture? What is meant by multicultural? Are these concepts sufficient to explain and contextualize the daily life experiences of children and families we currently serve, and will serve in the future?

Culture and multicultural are terms frequently used in the CSD literature, but there is not always agreement on the meaning of these concepts, nor on who really benefits from the use of those terms. For some, culture represents the collective experiences of persons sharing similar environments, and serves as a filter that guiding daily practices, assumptions, and worldviews transmitted from one generation to another through verbal and nonverbal language. Culture includes institutions that determine how daily lives are lived among groups who share similar environments and material conditions. Such institutions include, family, the media, and schooling. Stockman et al. (2004) suggested that multicultural, is typically defined in the CSD literature as "one or more" racial/ethnic groups in the U. S., such as African Americans, Latinos/as, Native Americans, or Asian Americans. This definition assumes a cultural consensus in the U. S., with the addition of one or more "minority" perspectives. Multicultural is conceptualized in various, and often inconsistent ways, such as a description of a population, a political perspective, public policies, or a goal of an institution, to name a few (Vertovec, 2001). Further, the concept of multiculturalism has been "reduced" to "tourists conceptions" such as being thought about as (1) focused only on people of color, (2) excluding white people, (3) setting up barriers between groups (Alibhai-Brown, 2000; Sleeter & McLaren, 2000), and (4) disconnected from access to resources and services. The current use of multicultural ignores that various knowledges, worldviews, and social practices emerged from differential histories, as well as conflicting and asymmetrical relations of power between economic, racial and gender groups. Nor does it address the conditions promoted by globalization. An important addition to the discussion is how those conflicting histories have influenced current cultural practices and/or perspectives. Concepts that may more accurately reflect the cultural landscape of the US in the 21st century are transculturalism (Johnson-Powell, Yamamoto, Wyatt, & Arroyo, 1997) and/or transnationalism (Gowricharn, 2006), both of which refer to groups of people who move across cultures and borders, and are members of multiple local and global communities – an experience common to most international migrants. These concepts highlight the integration of commonalities across multiple groups and contexts (Gowricharn, 2006), and may help CSD professionals move beyond more conventional understandings of culture and diversity.

As suggested by the two aforementioned questions, awareness of the gaps in the CSD research, curriculum, pedagogical focus, assessment and intervention processes, challenges CSD professionals to be more socially and politically relevant in our research, teaching and clinical work both at the "center" (global North) and "periphery" (global South) of the world system.

Conclusion: Internationalization of the Knowledge and Practice - A Role for NBASLH

One way that we can acquire intellectual leadership in the field as a group in this current context is to make the

internationalization of our knowledge and practice central, rather than tangential, to our daily practice. The U. S. does not exist in a vacuum; economic, political and cultural events in the U. S. necessarily affect events in other parts of the world. The reciprocal relationship also is true – and increasingly more so during the 21st century.

The National Black Association of Speech-Language and Hearing (NBASLH) has historically taken the lead in initiating and instituting changes to the field with respect to effective services for children and families from diverse cultural and linguistic backgrounds. The changing landscape of the 21st century provides another opportunity for NBASLH to be in the vanguard of the field. Following are suggestions that may help us move toward the internationalization of knowledge and practice.

Dr. Ronald Jones, NBASLH Board Chair (2006-2008), recently proposed that NBASLH develop a certificate of clinical competence - a laudable goal. Additional considerations also are required in tandem with the certificate of clinical competence, in areas of research, theoretical frameworks, curriculum content, pedagogical processes, assessment and intervention services, and collaboration, each listed below.

These are only a few suggestions that emphasize some of the gaps in the CSD field, and the role that the NBASLH membership can play in bridging those gaps. Let us dialogue about these suggestions by contributing additional ideas, examples, concepts, and theories to this discussion.

Research

- Establish an endowed chair to collaboratively develop an international team of educators, service providers, and students to facilitate the internationalization of knowledge and practice in the field beginning with NBASLH conferences. This endowed chair position could rotate on a biannual basis among members of the association who have experience and interest in international issues.
- Develop research agenda that will explain the causes and consequences of changing demographics on assessment, intervention, advocacy, research curriculum content, and pedagogy. Include the following identities in this effort: class, gender, race, and nationality.

Theoretical grounding

- Identify and deliberate, through seminars and workshops, on various theoretical frameworks that better support the rapid and increasingly interconnected world. One such framework is Critical Social Theory. Critical social theory (CST) is a conceptual framework that focuses on explaining the cultural, as well as economic and political contexts in which groups of people from diverse economic classes and racial and cultural backgrounds exist. This framework would allow CSD professionals to acquire a global perspective about our profession and service.
- Develop alternatives or redefine current concepts that will contribute to a holistic understanding of an increasingly interconnected world. The conceptual examples offered earlier in this paper were transcultural or transnational.
- Examine theoretical perspectives used in societies that have had long-term experiences being proactive in multiculturalism, multilingualism, and multinationalism. Such explorations could initially include Brazil, Canada, Columbia, Curacao, Ecuador, Great Britain, Guyana, India, Jamaica, Lebanon, New Zealand, Philippines, Portugal, South Africa, Spain, Trinidad, and Venezuela.

Curriculum Content

- Question the premises of the current curriculum.
- Identify the concepts missing from the current curriculum that will support an ability to provide effective services to an increasing diverse and international clientele.
- Engage in the expansion of the curriculum to include these missing concepts.
- Redefine current concepts, e.g., culture, multiculturalism, and diversity

Pedagogy

- Explore the usefulness of critical pedagogy, which follows the work of such scholars as Paulo Freire, Michael Apple, Mikhail Bakhtin, Derrick Bell, Norman Fairclough, Henry Giroux, Antonio Gramsci, bell hooks, Donaldo Macedo, Peter McLaren, Edward Said, Lev Vygotsky, and Howard Zinn.

- Critical pedagogy, would naturally follow from use of Critical Social Theory, and allows learners to question the premises of their practices, and identify causes and consequences of events.

Assessment and Intervention Service

- Develop an international certificate of clinical competence, as proposed by Dr. Ronald Jones. Incorporate in the acquisition of this certificate the need to demonstrate a "posture of cultural reciprocity" goes beyond an awareness of cultural differences, but allows professionals to constantly " . . . go through a process of introspection and inquiry" that facilitates questioning premises of ones field, as well as supports the confrontation of contradictions between values and practices (Kalyanpur & Harry, 1999, p. 116).
- Create regional, national, and/or international board certifications so that CSD professionals with this certification are deemed competent to practice in other countries.

Collaborative International Conversation

- Host an interdisciplinary conference focused on the future of the field. From this conference publish a proceedings of the papers presented, or an edited anthology focused on the communication sciences in the international context, causes of migration, premises of multiculturalism, as well as the lessons learned from failures and successes that will guide future research, courses, and practices in the field.

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