

An interprofessional training program for graduate students to improve writing outcomes in students with learning disabilities

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Writing Research Across Borders – 2023

Sunday 19 February 2023 – 2pm – Cosmos 3A



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Acknowledgements & Disclosure



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Project Faculty



Principal Investigators

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 - Department Chair, OT
- Vikram Dayalu, PhD
 - Department Chair, SLP

Co-Investigators

- Karen Hoover, OTD
 - Department of OT
- Anthony Koutsoftas, PhD
 - Department of SLP



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Project Description

- **Project Title:** Project Write to Learn: Preparation of Occupational Therapists and Speech Language Pathologists to Improve Written Expression in Children with Specific Learning Disabilities
 - This program provided graduate students in OT and SLP a yearlong interdisciplinary learning experience that involved shared coursework, group assignments, and coordinated clinical experiences.
- Federally funded **personnel training grant** from the Office of Special Education Programs
 - 5 years
 - 65% of funding goes to graduate student tuition and stipend
 - Focus of PWTL are the 8 graduate students in Occupational Therapy (OT) and Speech Language Pathology (SLP)
 - Program Scholars
 - 40 program scholars over duration of project

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Overarching Goal

- The **overarching goal** of Project Write to Learn (PWTL) was to foster a spirit of collaboration by engaging program scholars with interprofessional education experiences focused on improving writing outcomes in elementary school children with Specific Learning Disabilities
 - Dyslexia, Dysgraphia, Language-Based Learning Disabilities, Developmental coordination disorder
- In the United States school system, special education services are provided to students 5 to 21 years old as part of the Individuals with Disabilities Education Act (IDEA; U.S. Department of Education, 2004)
 - Specific Learning Disability is one of 14 qualifying categories
 - Largest proportion of students, SLD @ 35%

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Why Writing?

- Writing is an important instructional outcome for schoolchildren and it is especially challenging for children with learning disabilities. Research has indicated that on average students with learning disabilities (LD) are one standard deviation below peers with typical development across a variety of writing skills (e.g., Graham et al. 2017).
 - Writing lends itself well to interprofessional education and practice opportunities because it requires understanding from multiple perspectives in order to effectively improve the complex orchestration of skills needed for writing.

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Why OT & SLP?

- Due to their shared practice roles related to written expression, occupational therapists (OT) and speech language pathologists (SLP) can effectively collaborate as a means of improving writing outcomes for children with LD (AOTA, 2019; ASHA, 2001).
 - Students pulled from class
 - Collaboration in classroom is an option
- State and nationwide shortages of high quality OT and SLP professionals working in school settings

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Purpose

- The **purpose** of this presentation is twofold:
 - To provide an overview alongside theoretical and practical considerations for development and implementation of the program.
 - To report on program outcomes across all five cohorts of the program ($n = 40$) using both quantitative and qualitative measures.

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Program Description

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PWTL Goals

1. Program scholars will complete **interdisciplinary coursework** that provides foundational information for understanding, assessing, and treating written expression deficits in children with Specific Learning Disabilities.
2. Program scholars will acquire the skills to collaborate in interdisciplinary teams to develop **integrated, high quality and efficient interventions for treating written expression deficits** in children with Specific Learning Disabilities.
3. Program scholars will **collaborate in the delivery of individualized interventions** for improving written expression in children with Specific Learning Disabilities in a high needs elementary school.

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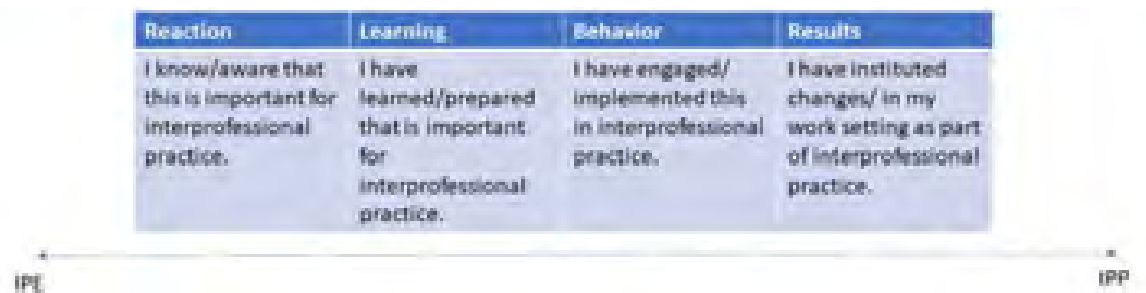
Theoretical Framework: Interprofessional Practice Competencies



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Theoretical Framework: Transition from Interprofessional Education to Practice

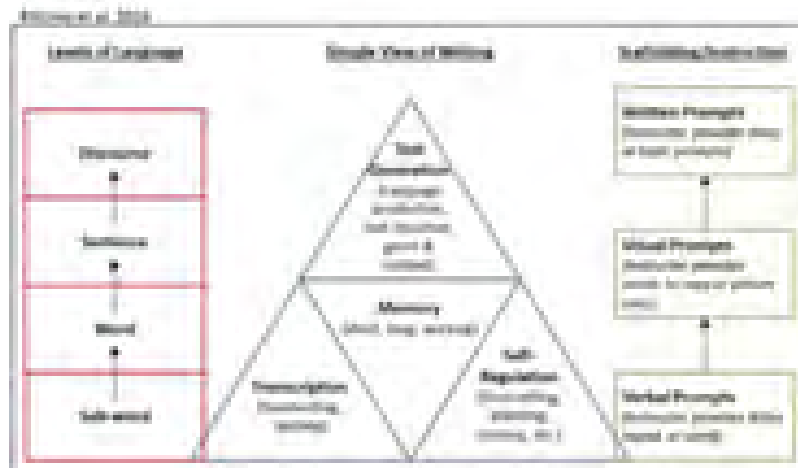


Kirkpatrick New World Model (Musaji et al. 2019)

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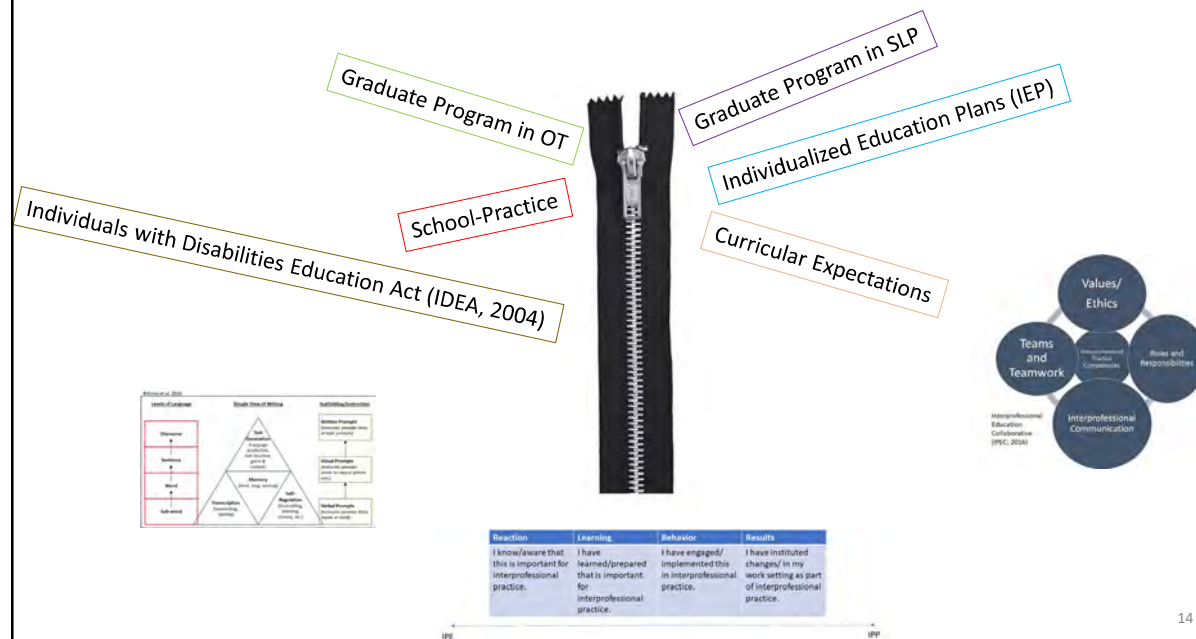
Theoretical Framework: Writing



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PWTL Curriculum Development



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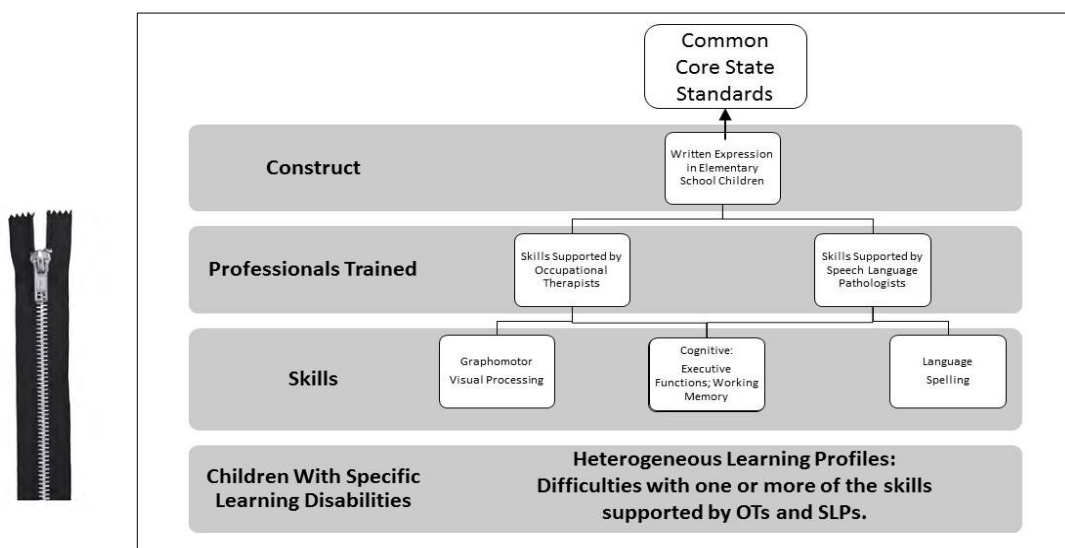
Competencies

1. Evaluate and utilize IDEA and IEP policies for delivering legal and ethical related services to children with SLD.
2. Use current theories and research to generate a list of skills that children must possess for successfully accomplishing educational goals set by Common Core State Standards (CCSS) or other educational benchmarks.
3. Compare and contrast diagnostic criteria set forth by IDEA with those set forth by best evidence and frameworks and analyze their implication on related services in the school system.
4. Compile evidence based intensive interventions studies that demonstrate efficacy for achieving educational goals.
5. Evaluate issues in students' performance through observations and analysis of educational products.
6. Develop intervention protocols that align with educational standards and meet individual student needs.
7. Deliver intensive interventions as an interdisciplinary dyad in the least restrictive environment (LRE) that aligns with educational standards, current best evidence, and meets individual student needs.
8. Evaluate the impact of the interdisciplinary, inclusive, individualized high-intensity services for the child with SLD.

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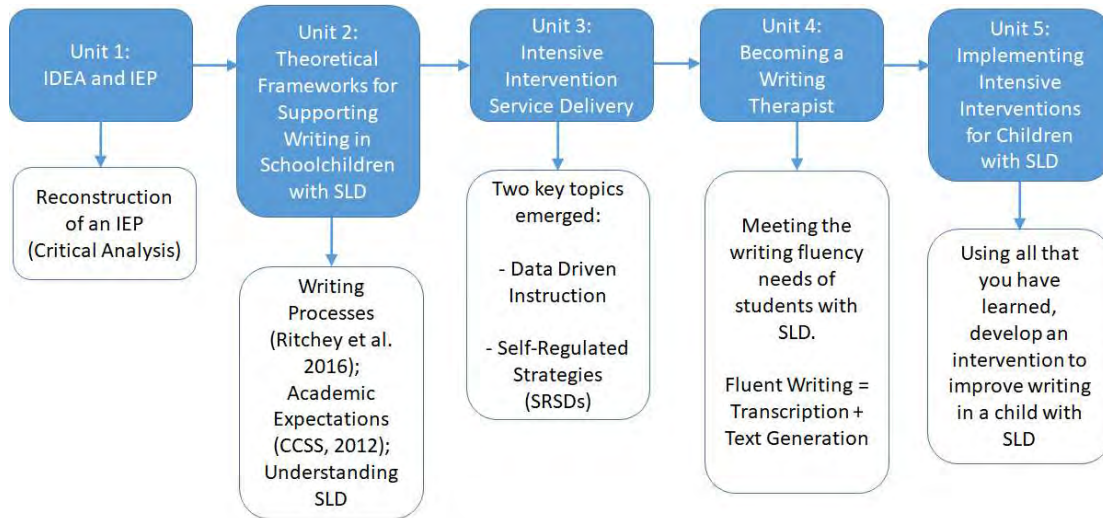
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Course Framework



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Curriculum Road Map



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Group Assignments

Group assignments completed in OT/SLP dyads, or groups of 4 or 8

IEP deconstruction and reconstruction

- Provided a writing sample to use for constructing interprofessional goals
- Special Education Attorney Presentation
- IEP meeting observation (years 1 & 2 only)

Systematic Review of Research

- Developing and answering PICO questions using current best evidence
- Evidence-based decision making (Current Best Evidence + Client Needs + Clinical Experience)
- Topics included: Multisensory approaches for transcription; Remote learning platforms and resources

Intensive Intervention Presentation

- Completed learning modules from the National Center for Intensive Intervention
- Summarized and presented content in two groups

Reflection papers

- Following assignments, simulation, and summative at the end of the course

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Coordinated Clinical Experiences

Year	Clinical Experience
1 & 2	Provided an intervention to a student with SLD to support writing, on their caseload at clinical placement <ul style="list-style-type: none"> - Consultation - Co-Treating - Multiskilling
3	Simulated case study <ul style="list-style-type: none"> - Background information provided (written report) - Videos to support practice in evaluation - Evaluation report - Treatment plan
4	Simulated case study <ul style="list-style-type: none"> - <i>Same as above</i> - Simulated School Team Meeting (supported through the Simulation Center @ University)
5	Conducted remote writing assessment and intervention through video conferencing software with struggling writers recruited for participation in the study

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Recruitment & Participation

8 students per year (4 OT & 4 SLP) * 5 years = **40** program scholars

Number of Applicants	Year 1 (2017-2018)	Year 2 (2018-2019)	Year 3 (2019-2020)	Year 4 (2020-2021)	Year 5 (2021-2022)
OT	8	11	14	8	4
SLP	30	11	11	12	12

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Outcome Measures

- Outcome measures obtained at PRE-, POST-, and EXIT-
- Quantitative measures include tools designed to measure interdisciplinary knowledge, skills, and practice
 - Collaborative Practice Assessment Tool (CPAT; Schroder et al. 2011)
 - Readiness for Interprofessional Learning Scale (RIPLS; McFadyen et al. 2005)
- Qualitative measures include responses to open ended questions (CPAT) and annual group interviews
- Artifacts from clinical interventions provided as part of the program.

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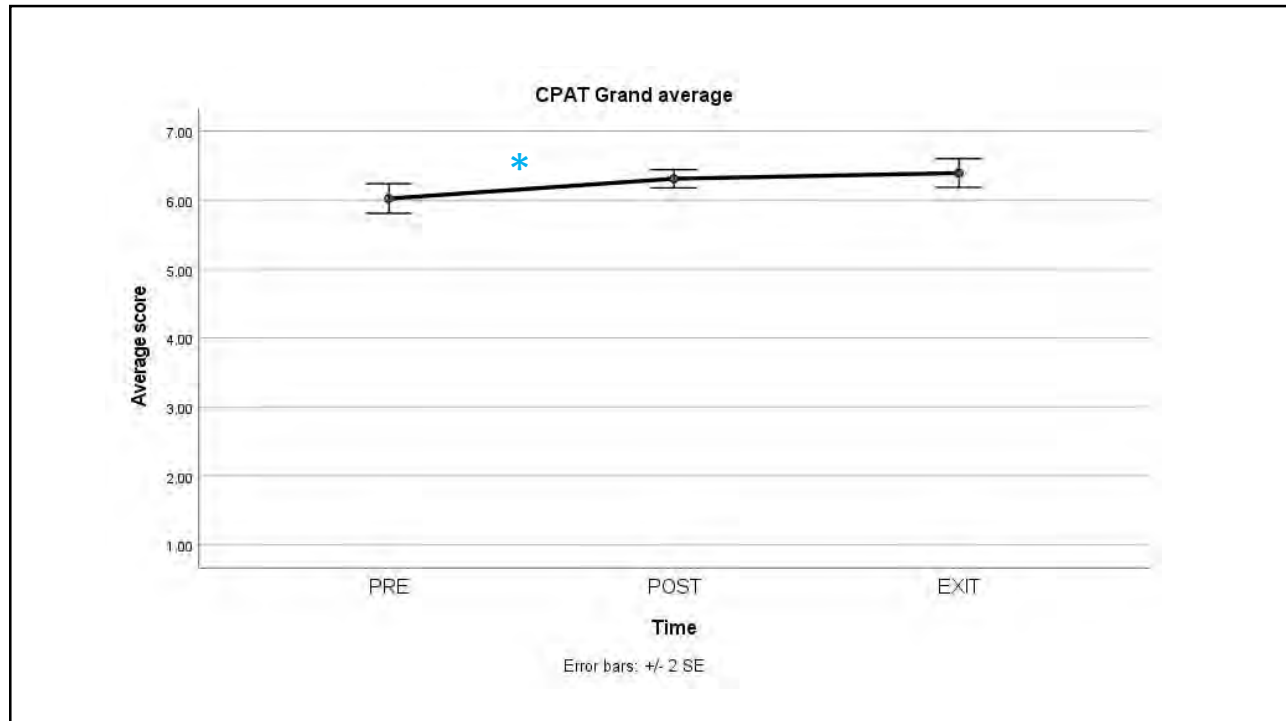
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CPAT (2011)

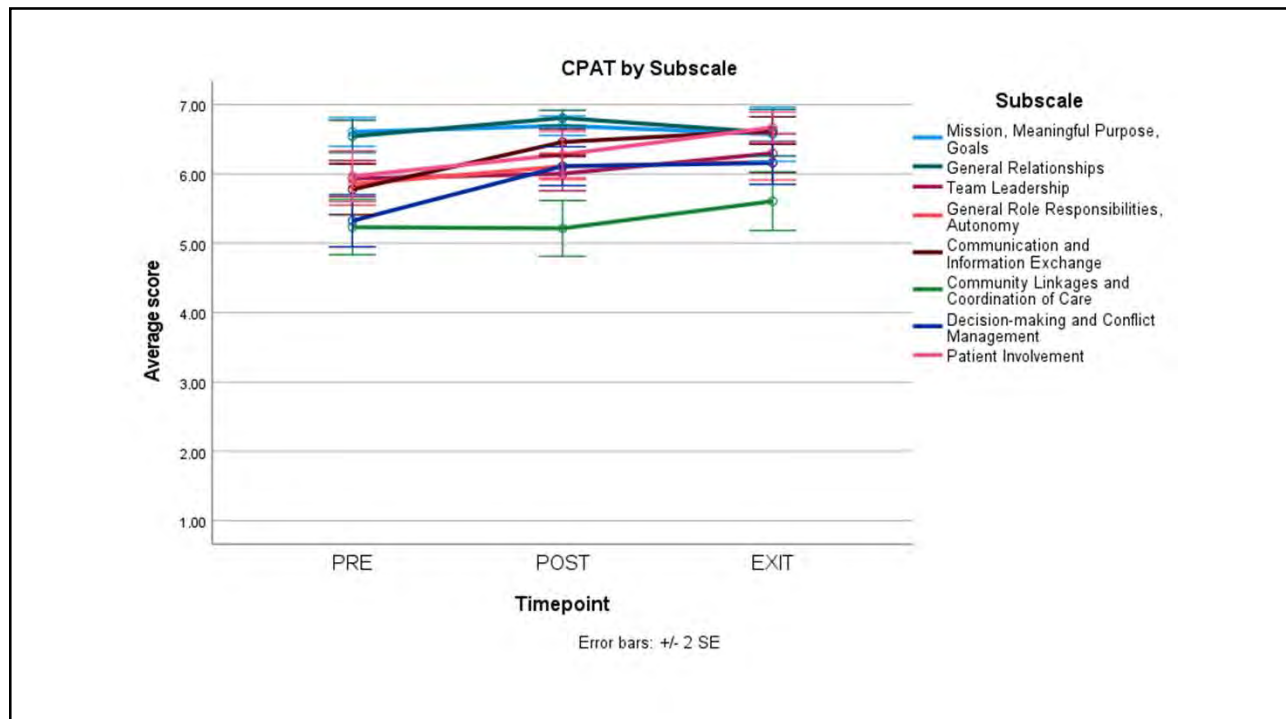
- Likert rating scale (1 to 7) across eight domains:
 - Mission, Meaningful Purpose, Goals
 - General Relationships
 - Team Leadership
 - General Role Responsibilities, Autonomy
 - Communication and Information Exchange
 - Community Linkages and Coordination of Care
 - Decision-making and conflict management
 - Patient Involvement
- Open ended questions
- PRE- POST- EXIT-

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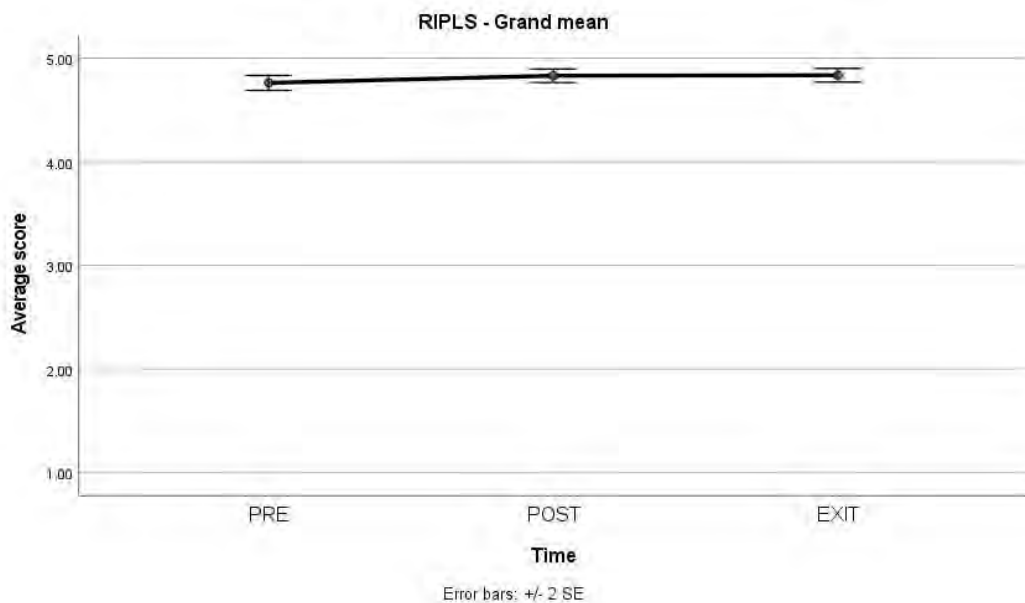
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RIPLS (2005)

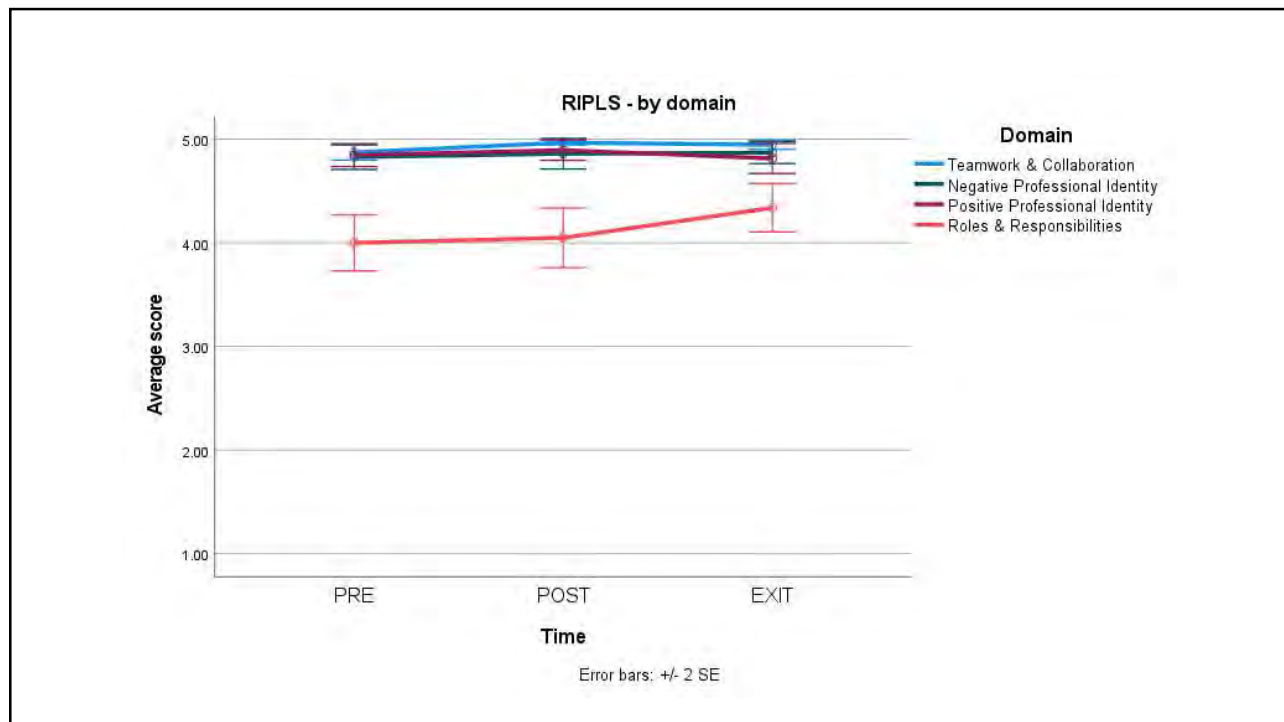
- Likert rating scale (1 to 5) across four domains:
 - Teamwork & Collaboration
 - Negative Professional Identity
 - Positive Professional Identity
 - Roles & Responsibilities
- PRE- POST- EXIT-

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Open Ended Questions

- In general, the pattern of responses over time indicated a deeper understanding of interprofessional practice across competencies demonstrating a willingness to develop collaborative practice skills.
 - **Interprofessional Communication** → most frequently coded for both positive and negative reasons
 - **Roles & Responsibilities** → increased understanding of individual roles and responsibilities and how to integrate with teams
 - **Teams & Teamwork** → an area in need of improvement and scholars indicated growth in this area over time
 - **Values/Ethics** → shared values, fostering an environment of respect, embracing cultural diversity and individual differences

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Group Interviews (POST & EXIT)

Understanding the other profession in context:

Scholar A: "That chart [skills needed to master CCSS], ... on this board right here. It was just like, Dr. Hoover and Dr. K and all of us shouting out things, and it was making sense to everybody."

Scholar B: "It really helped us to have a visual breakdown from both fields."

Better referrals:

"I actually had an experience where, because of some of the feedback that T[scholar] was able to give me, I was able to tell my supervisor, "Hey, I think this kid needs to be evaluated by the OT," and they were able to ... put him next in line 'cause so many kids fall through the cracks, especially ... in urban schools. So that was cool."

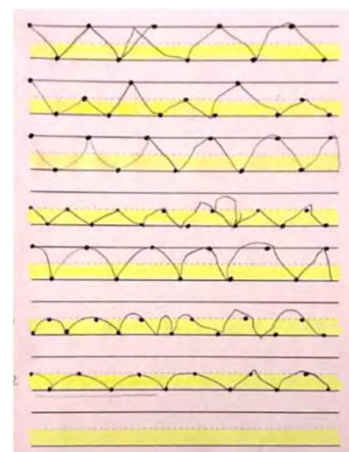
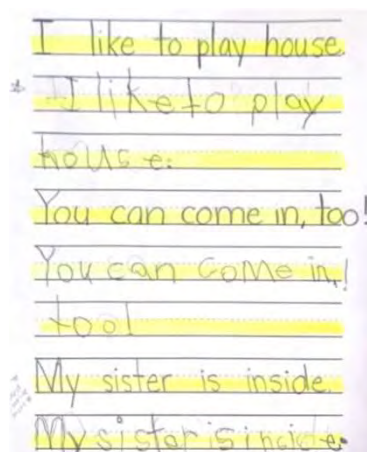
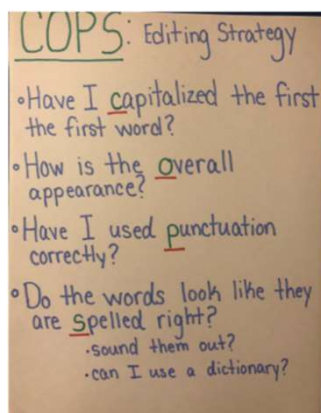
Experience of IPP:

"Me and K [a scholar] worked together for our intervention, and I thought it was helpful to have her do the SLP portion and then I did the OT portion, and then every session I could see what she's working on, and she can see what I'm working on and things that changed with our kid. Like, I used highlighted paper, and she noticed that it did improve his handwriting over time. So, something like that, ... working together on one kid, I think would be beneficial"

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Samples of Clinical Interventions/Artifacts




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PPP

People Characters: Who is in your story?	Place Setting: Where does your story take place?	Problem Events: What is happening? What's the problem and solution?
		Problem:
		Solution:

WEEK 3



ice cream

popsicles

We eat ice cream
and popsicles.

The ice cream is high and thick.

The popsicles are soft and delicious.

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PLEASE Checklist

_____ **P**ick a topic

_____ **L**ist ideas to include

_____ **E**valuate to see if the list is complete


_____ **A**ctivate the paragraph by
constructing a topic sentence

_____ **S**upply sentences that support the
paragraph

_____ **E**nd with a concluding sentence

OPINION

Must See!



Think about the best movie you have ever seen! What did you like about it? You are going to write a review for this movie. Write one paragraph telling your friends why they **MUST** see this movie!

Brainstorm

Don't Forget to Include:

- ✓ 5 to 8 sentences
- ✓ A topic sentence to start your paragraph
- ✓ Supporting details
- ✓ A conclusion sentence at the end

	Average Global Coherence	Spelling Accuracy	Percentage of Different Words	Mechanical Accuracy	Word Spacing Accuracy	Line Approximation Accuracy
Pre-Assessment	3/4	72%	72% (NDW=16)	0%	36%	84.9%
Post-Assessment	3.6/4	89.9%	62% (NDW= 18)	50%	70%	83.7%

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A.H. 4-10-19

The quick brown fox jumped over the lazy dogs.

The dogs cat got near neare and eere come reg and he kewe and he get tade and he cope rent and he get end and the bee dogs fene and he get cas and exote and ma and ent and tene fte and the dogs were and ene fte one cap fen

Subject of the sentence

Action of the sentence

What the subject is doing the action to

A.H.

A dog walked into my school and the dog was and the school went thiry less. He jumped from the

Letters on the line

In-between spacing

Neat - can you read what you wrote?

End sentences with a punctuation mark

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Case Study on Self-Regulated Strategy Development: COPS Strategy for a Second Grade Student with SLD

James Gade, Graduate Field, Jennifer Williams, Erica Learning, and Anthony D. Knutson
State Hill University

Introduction	Case Study	Intervention	Summary
<p>Writing is a complex process which involves multiple skills and strategies. For students with SLD, writing is often a significant challenge. The COPS strategy (Context, Organization, Planning, and Self-monitoring) is designed to help students with SLD improve their writing skills.</p> <p>Purpose: The purpose of this study was to evaluate the effectiveness of the COPS strategy for a second grade student with SLD.</p>	<p>The student was identified as having SLD in writing. The COPS strategy was implemented for 10 weeks. The student's writing was assessed at the beginning and end of the study.</p> <p>Results: The student's writing improved significantly after 10 weeks of using the COPS strategy. The student's writing was more organized and easier to read.</p>	<p>The COPS strategy was implemented for 10 weeks. The student's writing was assessed at the beginning and end of the study.</p> <p>Conclusion: The COPS strategy was effective in improving the writing skills of a second grade student with SLD.</p>	<p>The COPS strategy was implemented for 10 weeks. The student's writing was assessed at the beginning and end of the study.</p> <p>Conclusion: The COPS strategy was effective in improving the writing skills of a second grade student with SLD.</p>

Case Study on Self-Regulated Strategy Development: SAW and LINE Strategies for a Third Grade Student with SLD

James Gade, Graduate Field, Jennifer Williams, Erica Learning, and Anthony D. Knutson
State Hill University

Introduction	Case Study	Intervention	Summary
<p>Writing is a complex process which involves multiple skills and strategies. For students with SLD, writing is often a significant challenge. The SAW and LINE strategies (Self-awareness, Awareness, and Writing) are designed to help students with SLD improve their writing skills.</p> <p>Purpose: The purpose of this study was to evaluate the effectiveness of the SAW and LINE strategies for a third grade student with SLD.</p>	<p>The student was identified as having SLD in writing. The SAW and LINE strategies were implemented for 10 weeks. The student's writing was assessed at the beginning and end of the study.</p> <p>Results: The student's writing improved significantly after 10 weeks of using the SAW and LINE strategies. The student's writing was more organized and easier to read.</p>	<p>The SAW and LINE strategies were implemented for 10 weeks. The student's writing was assessed at the beginning and end of the study.</p> <p>Conclusion: The SAW and LINE strategies were effective in improving the writing skills of a third grade student with SLD.</p>	<p>The SAW and LINE strategies were implemented for 10 weeks. The student's writing was assessed at the beginning and end of the study.</p> <p>Conclusion: The SAW and LINE strategies were effective in improving the writing skills of a third grade student with SLD.</p>

Case Study on Self-Regulated Strategy Development: STOP & LIST Strategy for Two Fourth Grade Students with Writing Difficulties

Jennifer Williams, James Gade, Erica Learning, and Anthony D. Knutson
State Hill University

Introduction	Case Study	Intervention	Summary
<p>Writing is a complex process which involves multiple skills and strategies. For students with SLD, writing is often a significant challenge. The STOP & LIST strategy (Stop, Organize, Plan, and List) is designed to help students with SLD improve their writing skills.</p> <p>Purpose: The purpose of this study was to evaluate the effectiveness of the STOP & LIST strategy for two fourth grade students with writing difficulties.</p>	<p>The two students were identified as having writing difficulties. The STOP & LIST strategy was implemented for 10 weeks. The students' writing was assessed at the beginning and end of the study.</p> <p>Results: The students' writing improved significantly after 10 weeks of using the STOP & LIST strategy. The students' writing was more organized and easier to read.</p>	<p>The STOP & LIST strategy was implemented for 10 weeks. The students' writing was assessed at the beginning and end of the study.</p> <p>Conclusion: The STOP & LIST strategy was effective in improving the writing skills of two fourth grade students with writing difficulties.</p>	<p>The STOP & LIST strategy was implemented for 10 weeks. The students' writing was assessed at the beginning and end of the study.</p> <p>Conclusion: The STOP & LIST strategy was effective in improving the writing skills of two fourth grade students with writing difficulties.</p>

Self-Regulated Strategy Development "TREE" for Improving Persuasive Writing of Children with Writing Difficulties: A Case Study

Erica Learning, Jennifer Williams, James Gade, and Anthony D. Knutson
State Hill University

Introduction	Case Study	Intervention	Summary
<p>Writing is a complex process which involves multiple skills and strategies. For students with SLD, writing is often a significant challenge. The TREE strategy (Topic, Reason, Evidence, and Conclusion) is designed to help students with SLD improve their persuasive writing skills.</p> <p>Purpose: The purpose of this study was to evaluate the effectiveness of the TREE strategy for children with writing difficulties.</p>	<p>The student was identified as having writing difficulties. The TREE strategy was implemented for 10 weeks. The student's persuasive writing was assessed at the beginning and end of the study.</p> <p>Results: The student's persuasive writing improved significantly after 10 weeks of using the TREE strategy. The student's writing was more organized and easier to read.</p>	<p>The TREE strategy was implemented for 10 weeks. The student's persuasive writing was assessed at the beginning and end of the study.</p> <p>Conclusion: The TREE strategy was effective in improving the persuasive writing skills of a child with writing difficulties.</p>	<p>The TREE strategy was implemented for 10 weeks. The student's persuasive writing was assessed at the beginning and end of the study.</p> <p>Conclusion: The TREE strategy was effective in improving the persuasive writing skills of a child with writing difficulties.</p>

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Findings/Discussion

- Implementation of PWTL over five years was a learning experience for both program scholars and program faculty.
 - Implementation takes time (3 years to get into a groove!)
- Initial findings indicate that graduate students entered the program with knowledge about interdisciplinary practice and were able to achieve program competencies by applying knowledge toward improved writing outcomes in schoolchildren with SLD.
- CPAT was more useful to document change than RIPLS; however, both have significant limitations for interprofessional practice in school settings.
- Strategy based instruction was easily integrated into learning, program scholars and faculty were able to individualize these to meet individual needs of students with SLD

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Future Directions

- Development of a tool to measure transition from interprofessional education to practice, in the context of school-based practice.

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Thank you 😊

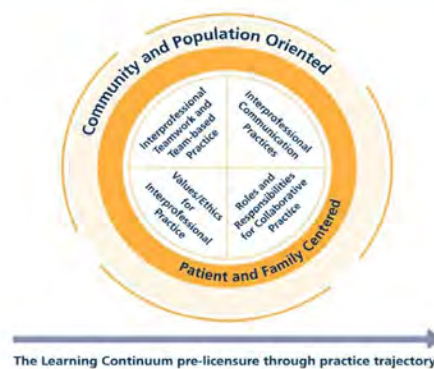
Anthony.Koutsoftas@shu.edu

Project Write to Learn:

<https://blogs.shu.edu/projectwritetolearn/>

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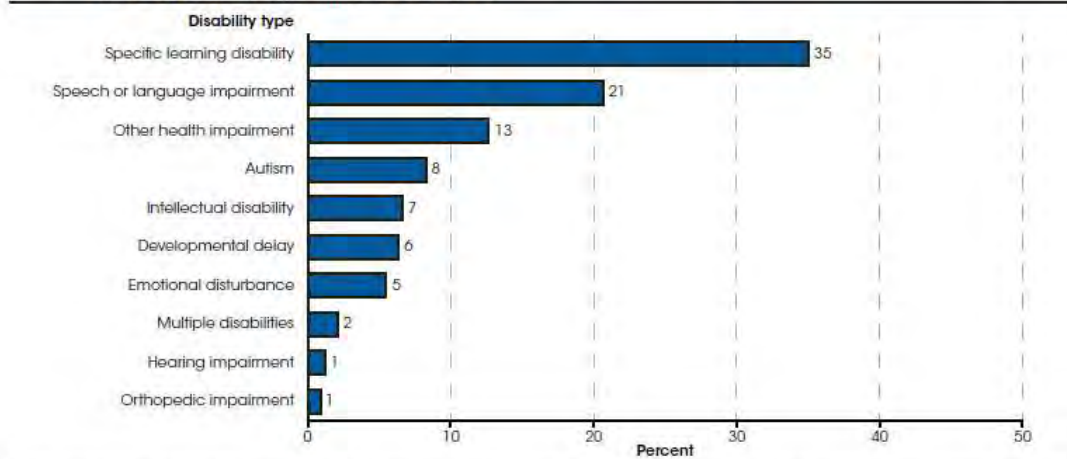
Interprofessional Collaboration Competency Domain



<https://www.ipecollaborative.org/assets/2016-Update.pdf>

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Figure 1. Percentage distribution of children ages 3–21 served under the Individuals with Disabilities Education Act (IDEA), Part B, by disability type: School year 2013–14



NOTE: Deaf-blindness, traumatic brain injury, and visual impairment are not shown because they each account for less than 0.5 percent of children served under IDEA. Due to categories not shown, detail does not sum to total. Although rounded numbers are displayed, the figures are based on unrounded estimates.
 SOURCE: U.S. Department of Education, Office of Special Education Programs, Individuals with Disabilities Education Act (IDEA) database, retrieved September 25, 2015, from <http://www2.ed.gov/programs/osepidea/618-data/state-level-data-files/index.html#ccc>. See *Digest of Education Statistics 2015*, table 204.30.