STORIZA

A PLATFORM TO SUPPORT CHILDREN'S ORAL READING FLUENCY DEVELOPMENT WITH GENERATIVE AI

WALTER L. LEITE, STEPHANIE HAMMERSCHMIDT-SNIDARICH,

CORINNE HUGGINS-MANLEY, HATICE KUBRA KARAKIS,

HOLLY LANE, SEYEDAHMAD RAHIMI, QIAN SHEN, XINYI TAI

UNIVERSITY OF FLORIDA

MATTHEW SCHMIDT

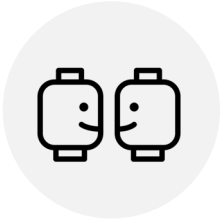
UNIVERSITY OF GEORGIA

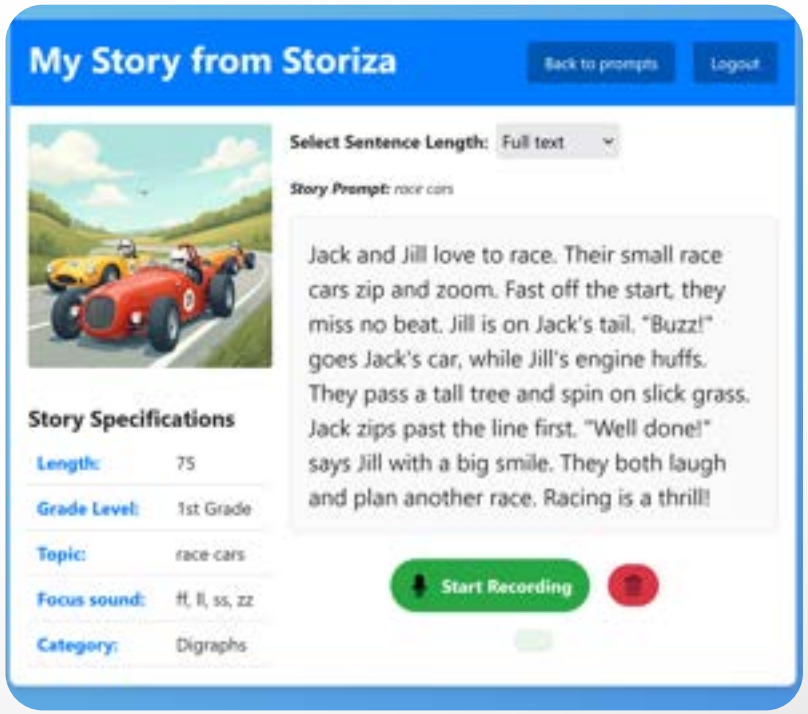
HELPING STUDENTS DEVELOP ORAL READING FLUENCY (ORF)

ORF is the ability to read quickly, accurately, and with expression.

ORF is vital to reading proficiency and reading comprehension (Paige, 2020).

EVIDENCE-BASED SUPPORTS FOR THE DEVELOPMENT OF ORF

CRITICAL SUPPORTS		Reading App Features
Readability		Chunkable; Decodable; Ability to specify difficulty level
Provide **student choice**		Specify & refine topics
Immediate **feedback**		Read aloud; Auto error detection;



Action:	Select target lesson	Choose story topic	Create and illustrate story	Offer Supports / Read Story
Agent:	Teachers, tutors, parents	Student	Storiza	Storiza / Student

PARTICIPATORY DESIGN WITH EDUCATORS

Hypotheses

8

30-MINUTE INTERVIEWS

85

INTERVIEWEES

Teachers 30

SPED Teachers 9

Tutors 6

Coaches 6

Specialists 12

Parents 6

Administrators 16

ANALYSES

THEMATIC ANALYSIS WITH MAXQDA

STEP 1. SEMI-STRUCTURED INTERVIEW NOTES IMPORTED INTO MAXQDA

STEP 2. CODED INTO CATEGORIES ALIGNED WITH HYPOTHESES

STEP 3. FREQUENCY & CO-OCCURRENCE ANALYSIS TO FIND THEME RELATIONSHIPS

STEP 4. REPRESENTATIVE QUOTES IDENTIFIED PER HYPOTHESIS

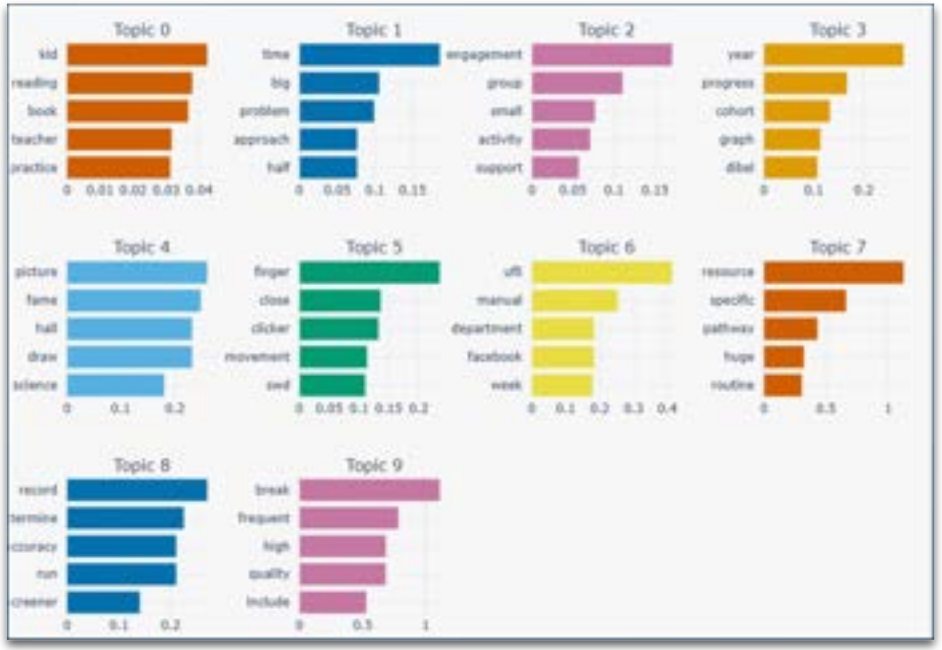
TOPIC MODELING WITH BERTOPIC

STEP 1. SPLIT INTERVIEW TEXTS INTO INDIVIDUAL SENTENCES

STEP 2. USE MINILM-L6-V2 MODEL TO GENERATE SENTENCE EMBEDDINGS

STEP 3. APPLY BERTOPIC TO CLUSTER SENTENCES INTO TOPICS

STEP 4. INTERPRET TOPICS AND ALIGN THEM WITH THE PREDEFINED HYPOTHESES



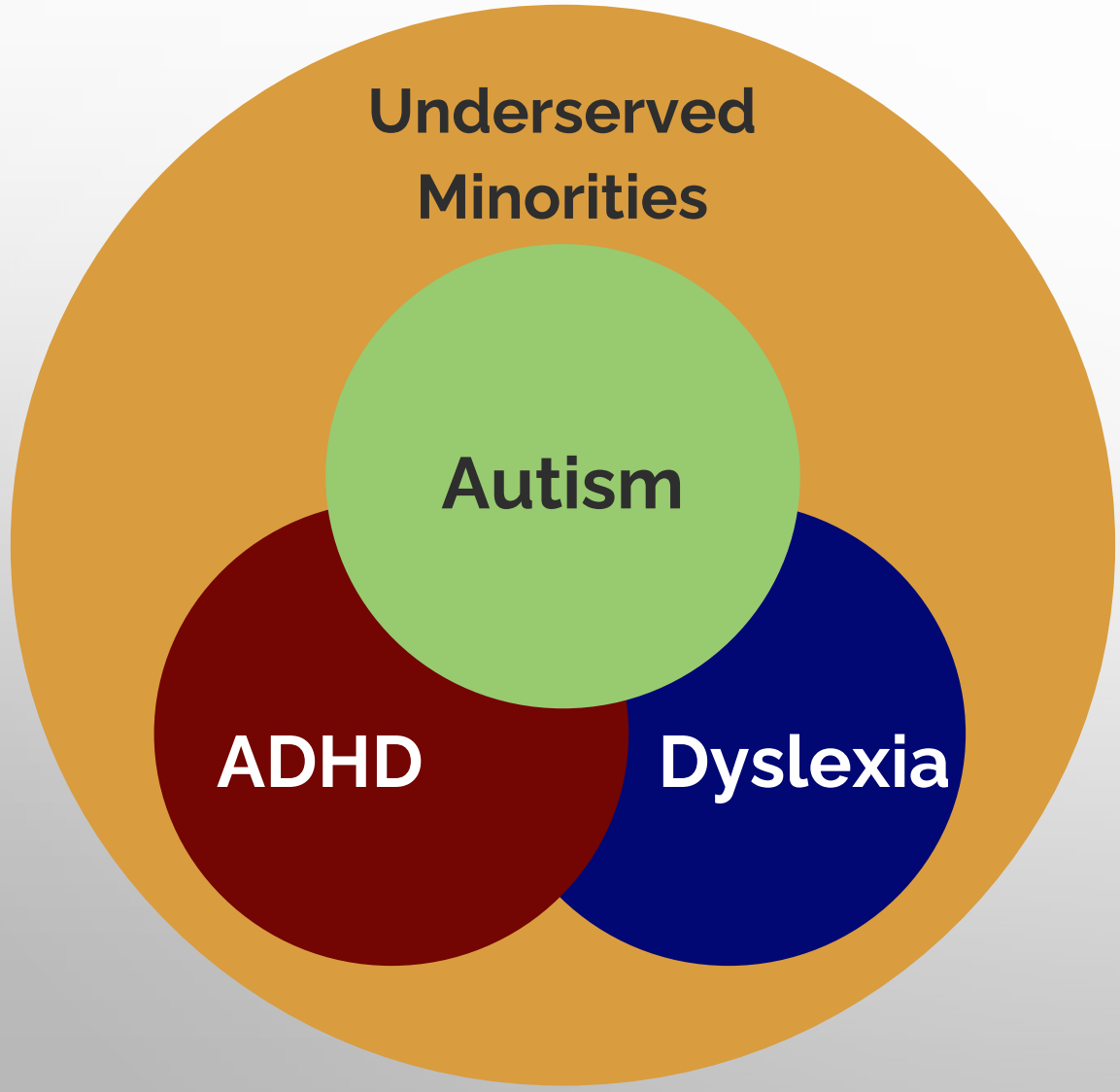
RESULTS: SUPPORT FOR HYPOTHESES

Hypotheses	% support	Example quote
1. Teachers have trouble engaging students in oral reading fluency practice, particularly those with a disability (e.g., dyslexia, ADHD, autism spectrum);	40%	"For kids in special education, there is not enough support. For dyslexic kids, I use explicit instruction, sound wall and sound articulations."
2. Students will be more engaged in reading materials they helped create;	41.17%	"If the kids come up with the topic/story it could help to keep them engaged."
3. Teachers welcome the use of technology to improve oral reading fluency practice;	63.52%	"A reading app would help with engagement and providing decodable stories."
4. Teachers will actively search for resources to help with oral reading fluency practice;	56.47%	"I reach out to literacy department in district, to classroom teachers, to other reading specialists to help in finding resources- others reach out to me similarly."

RESULTS: SUPPORT FOR HYPOTHESES

Hypotheses	% support	Example quote
5. Teachers struggle to find a variety of reading materials at the appropriate reading level for students;	41.17%	"...That would be great!! We also have reading a - z and they are supposed to be at their level, but not all the books are really at their level."
6. Teachers would use an AI reading app to create stories with the whole class using the projector;	38.82%	"Projecting the app would be very nice because would build up oral discourse as well."
7. Teachers would use an AI reading app to create stories for small-group instruction;	37.64%	"I could do a lot of group and whole class instruction work. Like introducing a new concept!"
8. Teachers would assign using an AI reading app to create stories as homework.	21.17%	"It would be a great thing for them to make a story in class and read it at home or make a story at home and come to school and read it in class."

HOW STORIZA CAN SUPPORT UNDERSERVED LEARNERS



ADHD: STORY CHOICE SUPPORTS CREATIVITY, AND READING ALOUD IMPROVES FLUENCY.

DYSLEXIA: CHUNKING DECREASES DIFFICULTY, HIGHLIGHTING IMPROVES FLUENCY.

AUTISM: INCORPORATING SPECIFIC STORY CHARACTERS INCREASES ENGAGEMENT, CREATIVITY, AND VOCABULARY.

UNDERSERVED MINORITIES: STORY CHOICE AND INTEGRATING CULTURAL ELEMENTS INCREASES ENGAGEMENT AND CREATIVITY.

Value to Teachers

General Education Teachers

Special Education Teachers

Reading Specialists

Value

Increased student Engagement

Reduced time finding stories

Teachers choose UFLI lesson

Built-in assessments

Critical outcome

Increase oral reading fluency

FUTURE DEVELOPMENT

- Stealth assessment
- Gamification
- Intelligent tutoring system

https://virtuallearninglab.org/research/storiza/