



Equipping Students for Success: Teaching Algebra Skills to Transition-aged Students with ASD and ID



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Background / Purpose

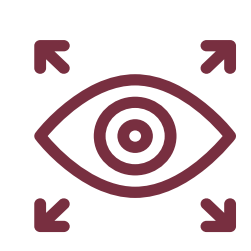
Academic success is a significant predictor of post-secondary success (Nasamran et al., 2017)

Teaching academic skills that can be applied within daily life can increase quality of life (Spooner & Browder, 2015; Taber-Doughty, 2015)

Students with ID can learn grade aligned mathematics with high-quality instruction (Courtade et al., 2014; Spooner et al., 2017)

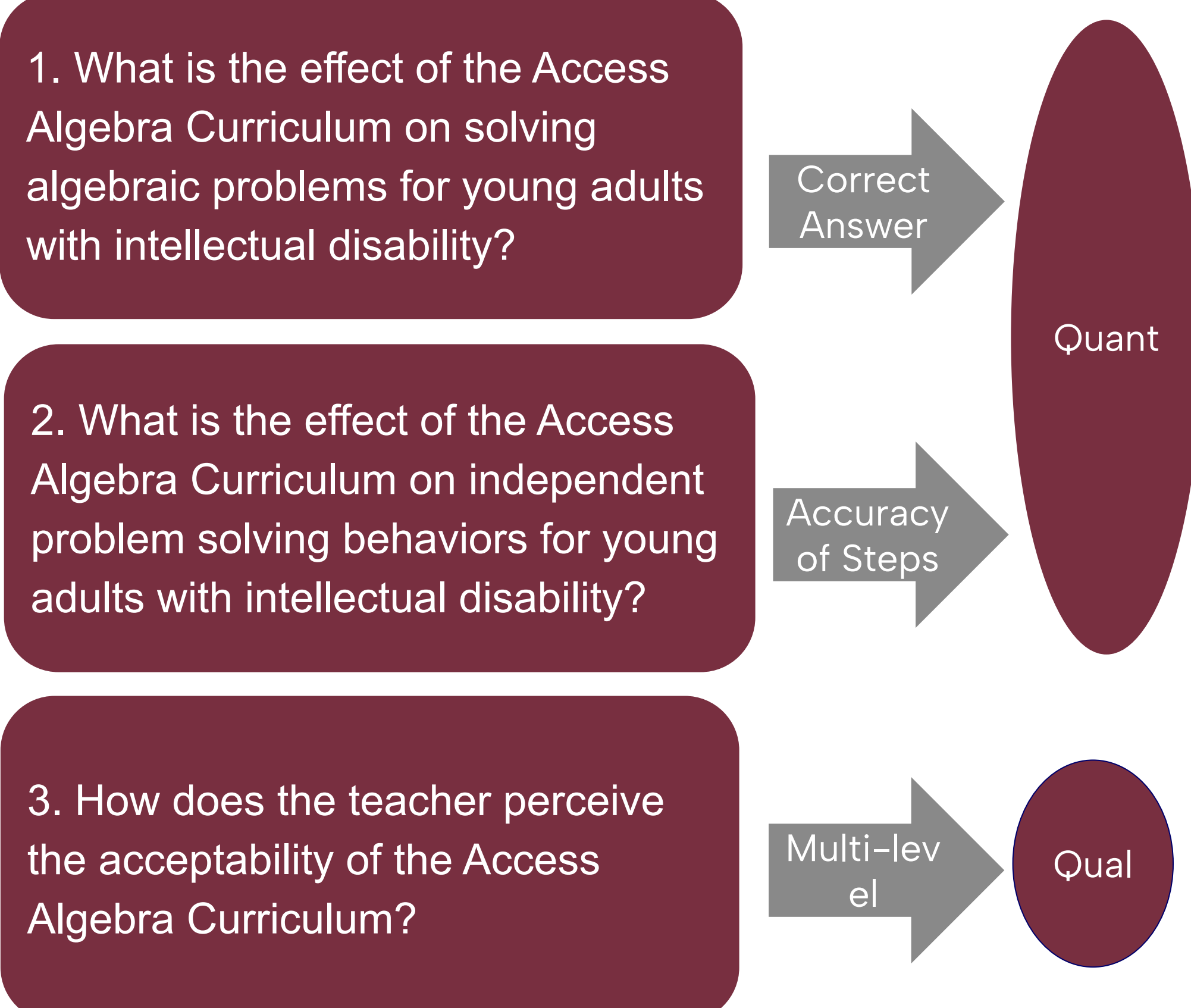


Algebra Skills



Teacher Perception

Research Questions



Method

- Multi-method**
To effectively answer all research questions, a multi-method approach was taken in this study. This included multiple research methods but not an intentionality of mixing the methods.
- Quantitative**
Quasi-experimental method utilizing a pre- and post-test design to study the participants.
- Qualitative**
Case Study of the intervention instructor and their influence.

Participants & Setting

Intervention Group	Control Group
Students (n=13)	Students (n=10)
<ul style="list-style-type: none"> Ages: 18-21 Intellectual Disability and / or Autism 	<ul style="list-style-type: none"> Ages 16-18 Intellectual Disability and / or Autism
Location <ul style="list-style-type: none"> Transition Program 	Location <ul style="list-style-type: none"> Public High School
Educator (female) <ul style="list-style-type: none"> Master's in Special Education 3+ year experience 	Educator (male) <ul style="list-style-type: none"> Bachelor's in Special Education 20+ year experience

Procedures / Materials

Procedures

Assessments

- Randomization of two versions:
 - A and B
- Read aloud option available
- No instructional support provided

Intervention instruction

- Instructor utilized explicit instruction (model-guided practice-independent practice) and systematic instruction
- Units 1 & 3

Materials

Access Algebra Curriculum

Units 1 & 3

- The teacher provided input that these units were most relevant to their campus jobs
- The timeline of the study prevented all units from being taught

Unit Flow

Model
↓
Guided Practice
↓
Independent Practice

Descriptive Statistics

Exponents

Linear Functions

Reasoning

Results

		Assessment				Between Unit			
		Pre-assessment		Post-assessment		Unit 1		Unit 3	
		Unit 1	Unit 3	Unit 1	Unit 3	Pre	Post	Pre	Post
		IV	C	IV	C	IV	C	IV	C
Average		3.4	3	3.2	3.6	4	3	4.77	3.4
SD		1.24	2.21	1.92	1.96	1.92	1.86	1.64	2.27
Min		1	0	1	0	1	0	2	0
Max		5	7	7	6	7	7	8	8

Repeated Anova Unit 1: $F(1, 14) = [0.02], p = < .88$
 Repeated Anova Unit 3: $F(1, 14) = [0.93], p = < .35$

		Pre	Post
Instructional	<ul style="list-style-type: none"> "academic content areas as aligned with the standards that they had in high school at this point in their educational career, it's focusing on, it's the last two to three years that they have in their educational, their free public educational career. And so, it's kind of focusing on what skills are absolutely essential and building on the abilities that they already have, more so than presenting new instruction." "Emphasis on problem solving" 	<ul style="list-style-type: none"> "Overall, the study was effective not only in teaching math skills but also in fostering important life skills and mindset changes." "I could have done better in helping them connect the problem, its identification, and the actual solution." "My perception is that they grasped the vocabulary and sequence quickly, aided by the task analysis" "It provided unique insights and challenged my teaching approach in beneficial ways" "It's notable how task analysis and related tools could facilitate their mathematics application." 	
Survey	<ul style="list-style-type: none"> Slightly disagree/slightly agree on most questions; except strongly agreed on instructional methods (52/90 pts) "slight reluctance ... whether or not this is a priority educational need at the transition stage in their educational career" "this is not an intervention I would prioritize with my current mindset and limited instructional resources" 	<ul style="list-style-type: none"> Slightly agree-strongly agree on most questions (73/90 pts) "students missed valuable instruction in transition areas in order to stay on track with the intervention... it did not align enough with their transition areas to justify taking up this amount of instructional time." "when they come to transition they can focus on applying the knowledge they have retained and generalized to job and life skill settings." 	

Limitations & Future Research

Limited Sample Size
Quantitative findings and statistical significance

Included Only One Perspective
Instructor Generalizability

Mathematical Setting
Location

GENERAL CURRICULUM ACCESS LAB
GCA Lab Website

References & More Material

gcalab.fsu