

# Instruction and service time: itinerant services to DHH students

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# Why itinerant services?

- 87 % of all DHH students attend general education classrooms for some portion of the school day
- Services from a TOD allows DHH students to receive both individualized instruction *and* to access the general education curriculum

# Questions

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- What services do itinerant TODs provide?
- What is the relationship between services provided and student performance?
- How are service decisions made?
- What might be effective services?

# Study Participants

- 197 students in Arizona and Colorado in 125 different schools
  - attending general education classes
  - Identified sensorineural bilateral or unilateral loss
  - Receive direct or consultative services from 86 different TODs
  - Enrolled in grades 2-8 at beginning of study

# Case studies

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- 25 students served by 23 different TODs
- Selected to represent the range of hearing loss, and grade levels

# Data collection

- Teachers completed a demographic form for each child annually
  - Detailed information on hearing loss, educational support, communication
- Selected from a checklist of direct instruction provided by a TOD

# Direct instruction

## Academic

- Math
- Reading
- Social Studies
- Writing
- Science
- Language

## Non academic

- Assistive technology
- Auditory skills
- Career development
- Learning strategies/study skills
- Self advocacy
- Speech

# Other data

## *Student academic achievement*

- Obtained from annual state-mandated standardized tests

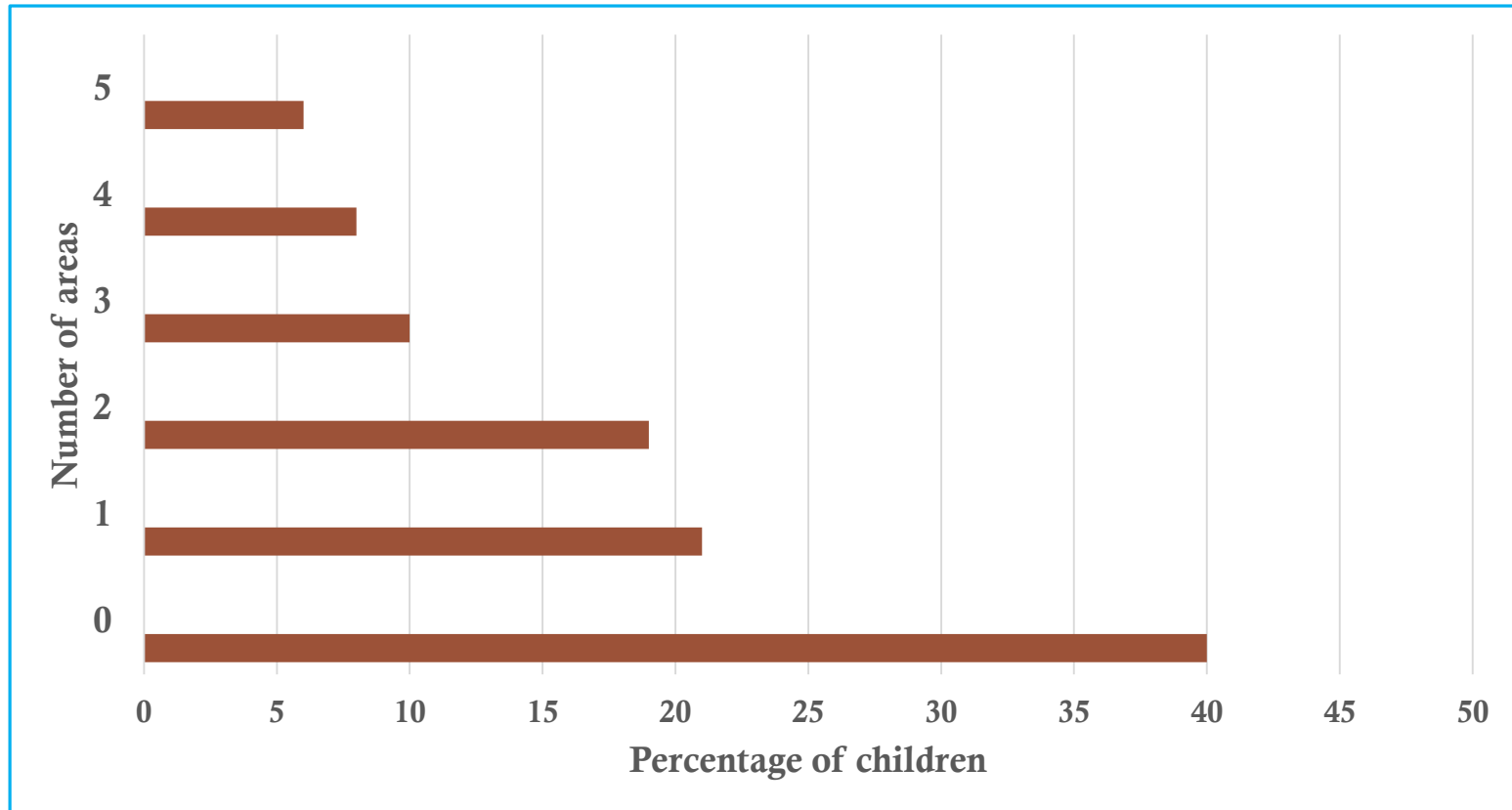
## *Teacher interviews for case study students*

- Each teacher interviewed individually and in person
  - How did you decide on the time needed by this student?
  - How well do you feel you can meet the student's needs?

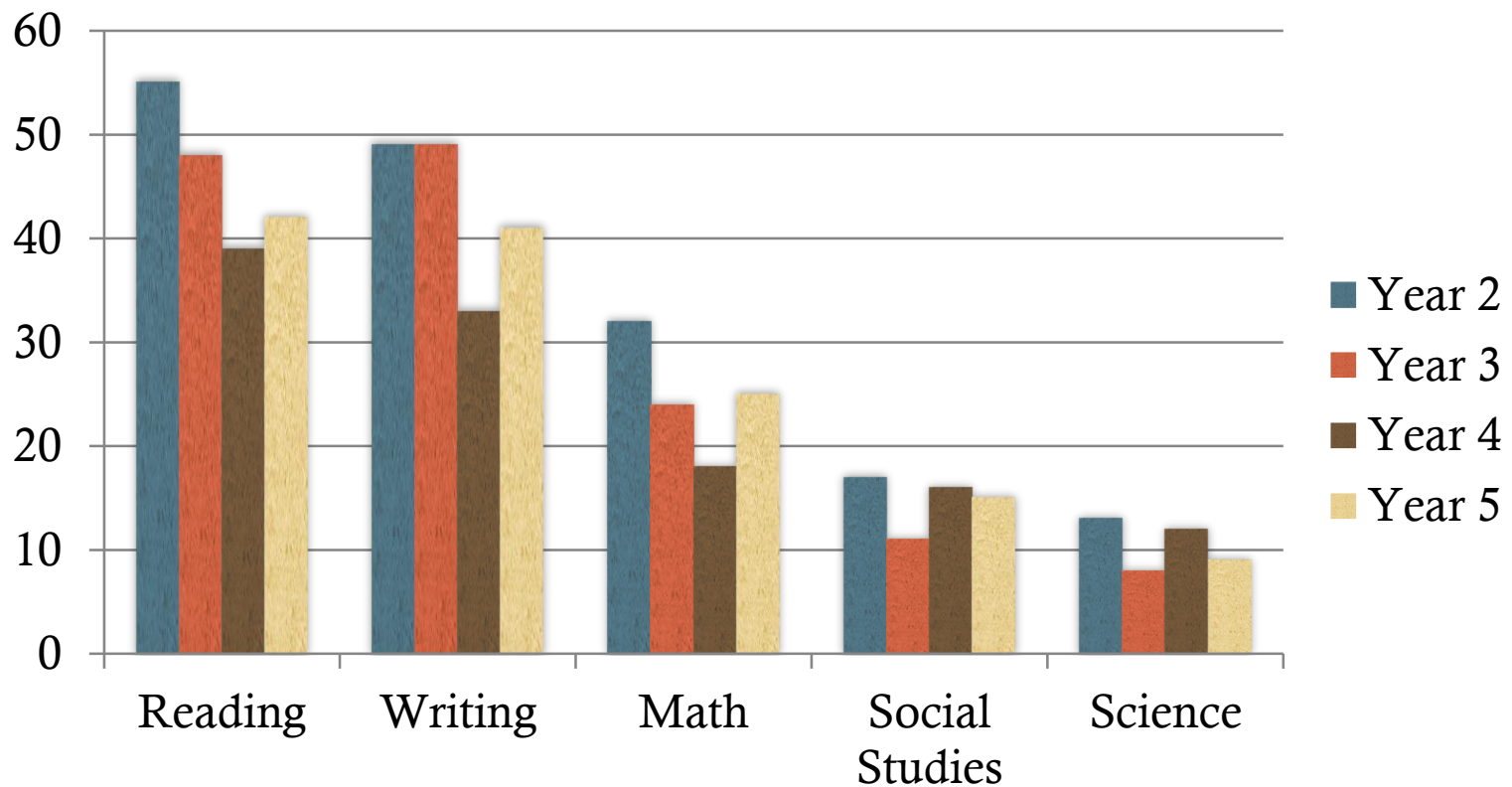


# Services provided

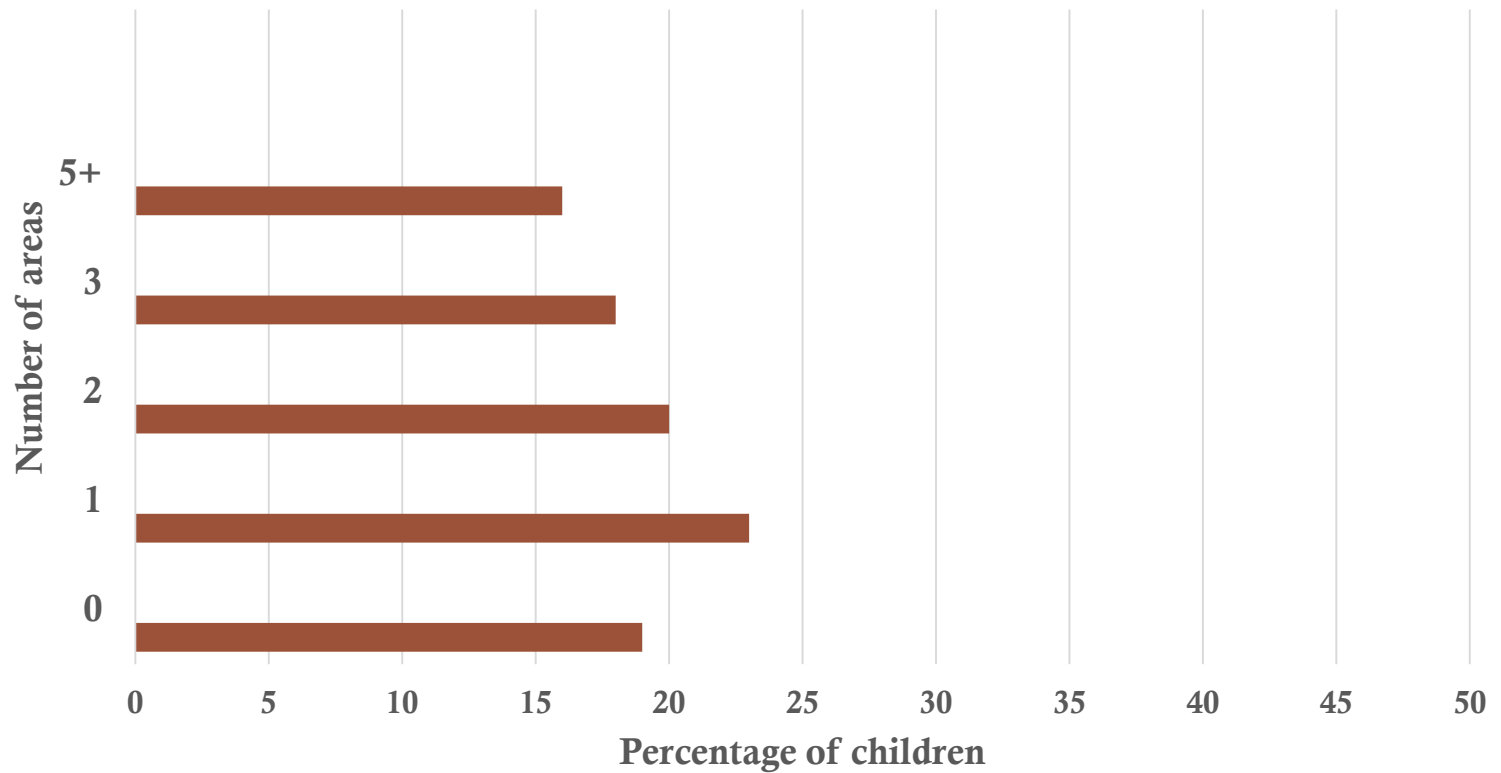
# Number of areas of academic instruction received from TOD



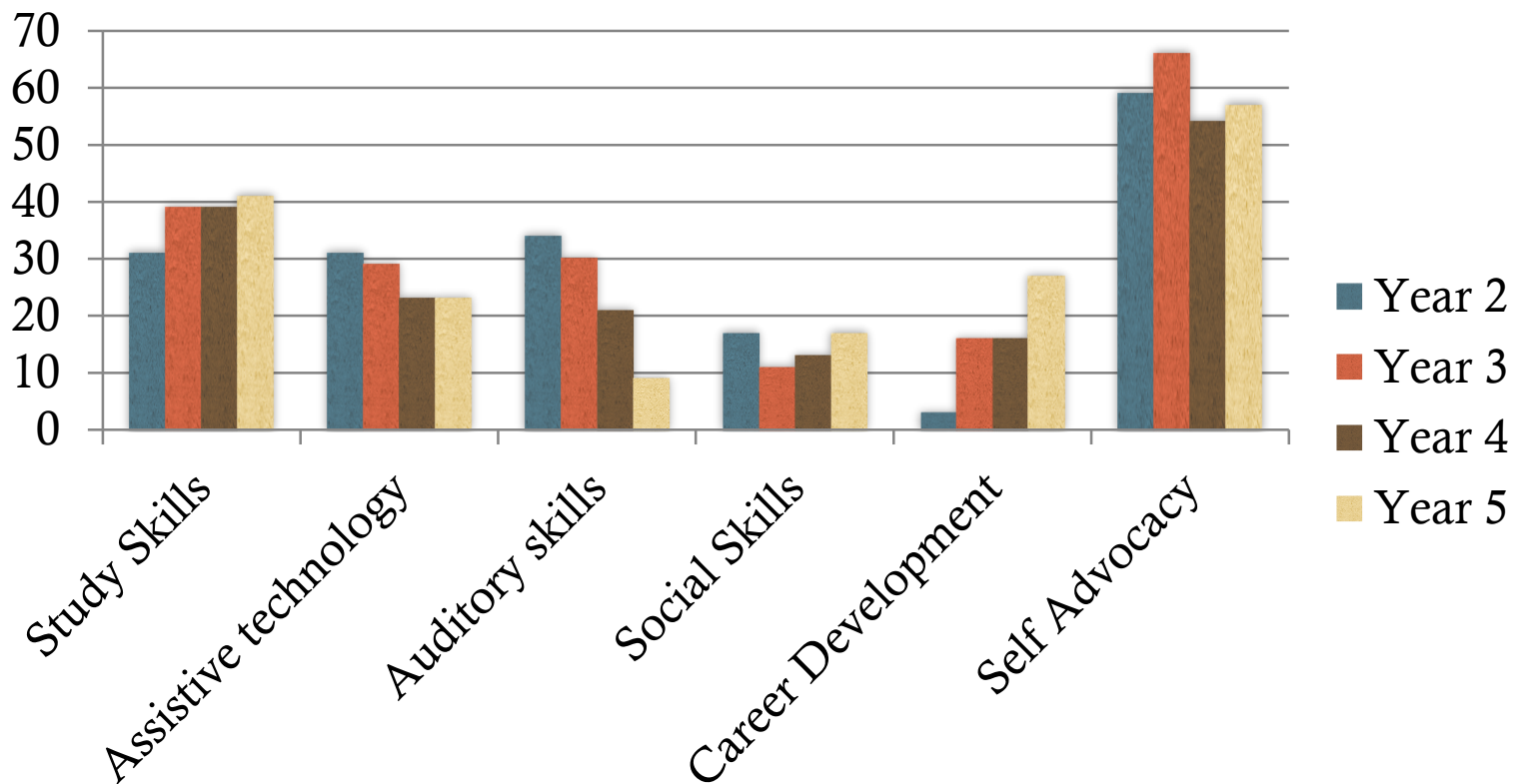
## Percentage of students receiving direct academic instruction by subject area



# Number of areas of non-academic instruction received from TOD



## Percentage of students receiving non-academic instruction by area and year

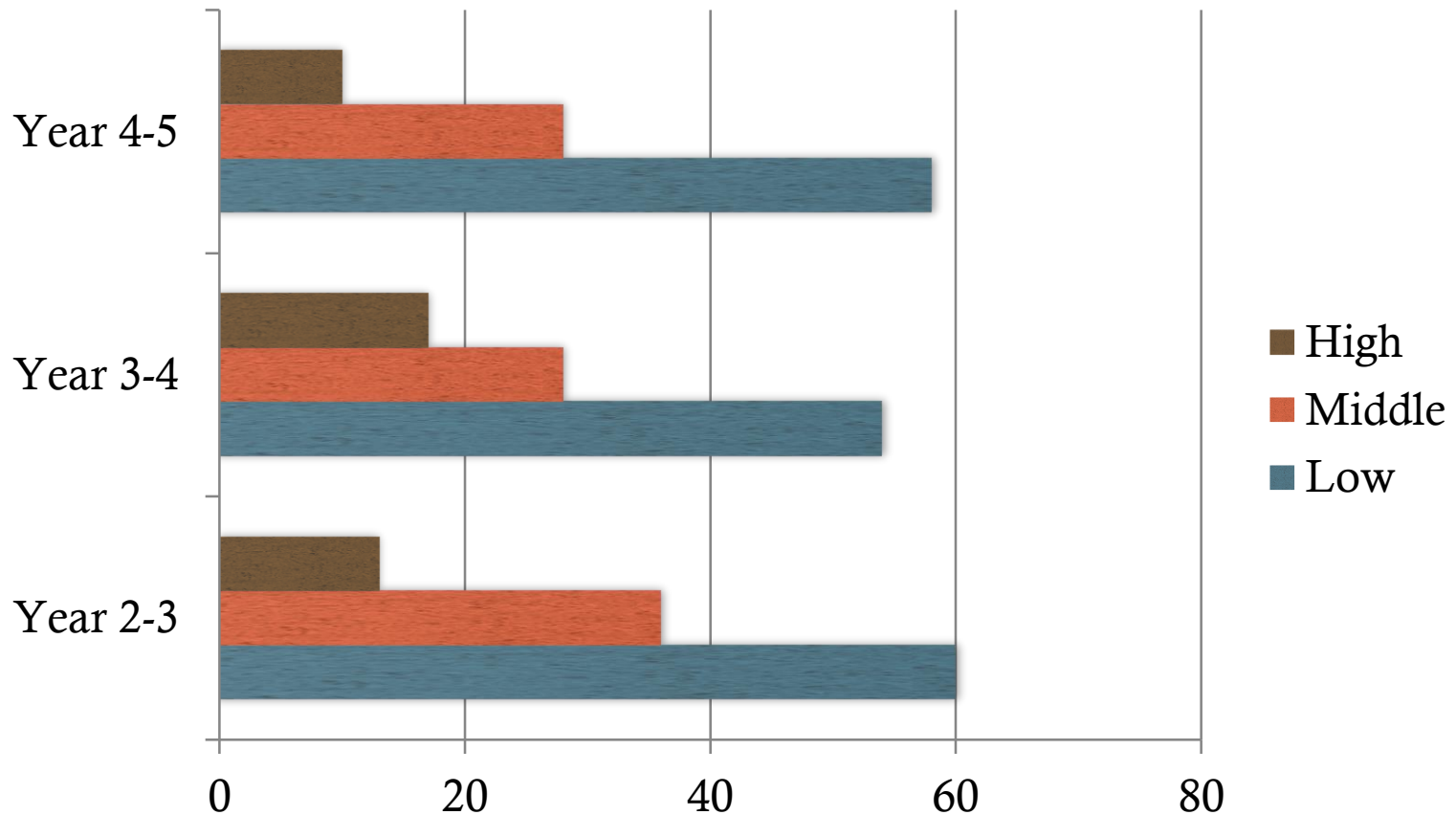


# Relationship between services provided and student achievement

# Relationship between academic scores and service provision

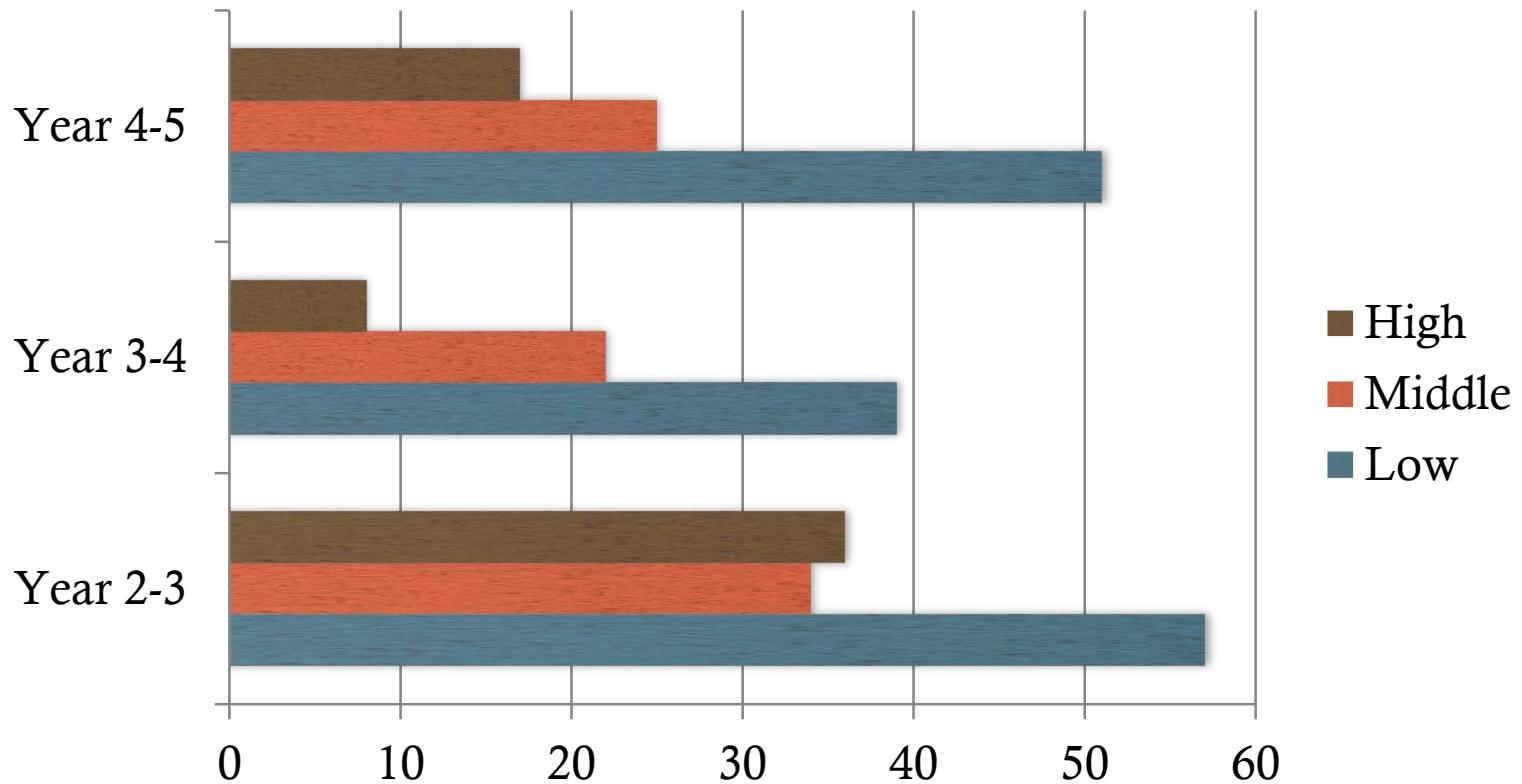
- We grouped students by their academic scores by year in reading and language/writing
  - Low = NCE less than 35
  - Middle = NCE 36-65
  - High = NCE greater than 65
- We then looked at the proportion of students *in the following year* receiving services in these areas

# Direct reading instruction by previous reading performance





# Direct language/writing instruction by previous performance



How were service time  
decisions made?

# Perceived student needs

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- These were based on
  - Standardized test results
  - Information from general education teachers
  - TOD observations

# Student age

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- Reduced direct services as:
  - Children got older
  - Became more adept at advocating for themselves

# Other reasons

- Student or parental request
- Student performance in the general education classroom
- Services provided by other professionals
- Transition

So what do we know?

# We know that:

- Teachers who support DHH students in public schools provide a large array of services both academic and non-academic
- The primary academic instruction provided is in literacy
- The primary non-academic instruction provided is in self advocacy

# We also know that

- There is a relationship between reading and writing performance and direct reading and writing instruction provided by a TOD
- A percentage of students who perform poorly are not getting direct academic instruction from a TOD
- Decisions about service are made on student needs, age, and requests.



What are effective  
services?

# Some analyses for academic outcomes

- Classified the NCE scores
  - Means of 40+ represent **low** or no risk
  - Means 31-39 represent **moderate** risk
  - Means below 30 represent **high** risk
- Selected variables that TODs can influence
  - Access to auditory information
  - Communication skills
  - Classroom participation

## Access to auditory information in the classroom

	<b>Students with good functional hearing AND consistent amplification use</b>	<b>Students with good functional hearing WITHOUT consistent amplification use</b>
Math	54	36
Reading	50	36
Language	50	33

# Implications for service

- Develop auditory skills as possible
- Teach students to monitor their own amplification
- As part of self-advocacy
  - Teach students about their own hearing loss
  - Demonstrate how their amplification can benefit them and in which situations
  - Teach them to be assertive about classroom auditory access
- Provide inservice to general education teachers about auditory access for the student in the teachers' classrooms.

# Receptive Communication

	Math	Reading	Language
Normal	Low	Low	Low
Mild problems	Moderate	High	High
Severe problems	High	High	High

# Expressive Communication

	Math	Reading	Language
Normal	Low	Low	Low
Mild problems	Moderate	High	High
Severe problems	High	High	High

# Receptive and Expressive Communication

- Functioning normally in both expressive and receptive communication is required to be at no risk for reading and language
- Students who have mild problems in EITHER receptive or expressive communication are at moderate risk
- Students who have mild problems in BOTH receptive and expressive communication are at high risk

# Classroom Participation

	<b>No Risk</b>	<b>Moderate</b>	<b>High</b>
Math	Almost Always (3.2 – 4.0)	Sometimes (2.3 – 3.1)	Seldom (2.2)
Reading	Always (3.8 – 4.0)	Almost Always (3.2 – 3.7)	Sometimes (3.1)
Language	Always (3.8 – 4.0)	Almost Always (3.0 – 3.7)	Sometimes (2.9)



## Direct academic services from teachers of Deaf/HH

	Math	Reading	Writing
No risk	0-1 subjects	0 subjects	0 subjects
Moderate	2-6 subjects	1 subject	1 subject
High		2-6 subjects	2-6 subjects

# Direct Non-Academic Services

- Students who receive service in 2 areas at no risk

BUT

- Students who receive NO services are at moderate risk
- Students who receive services in more than 7 areas are at high risk for reading and language

# Implications for services

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- TOD role is crucial for success of DHH students in general education classrooms
- Provide direct academic instruction in all areas of language and literacy including:
  - Vocabulary
  - English Syntax
  - Sign and spoken communication

# Implications for services

- Provide direct instruction in non-academic areas
- Make students independent learners
  - Teach learning strategies and study skills
  - Scaffold communication and study skills using content being taught in general education classroom
- Make sure student has, and can self-advocate for, auditory and visual access
- Develop social skills to interact appropriately with peers and adults

# Implications for services

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- Facilitate communication with peers and teachers directly and through an interpreter
- Work with general education teachers and hearing students to develop rules for classroom discussions

# Take away

Vocabulary and  
English Syntax

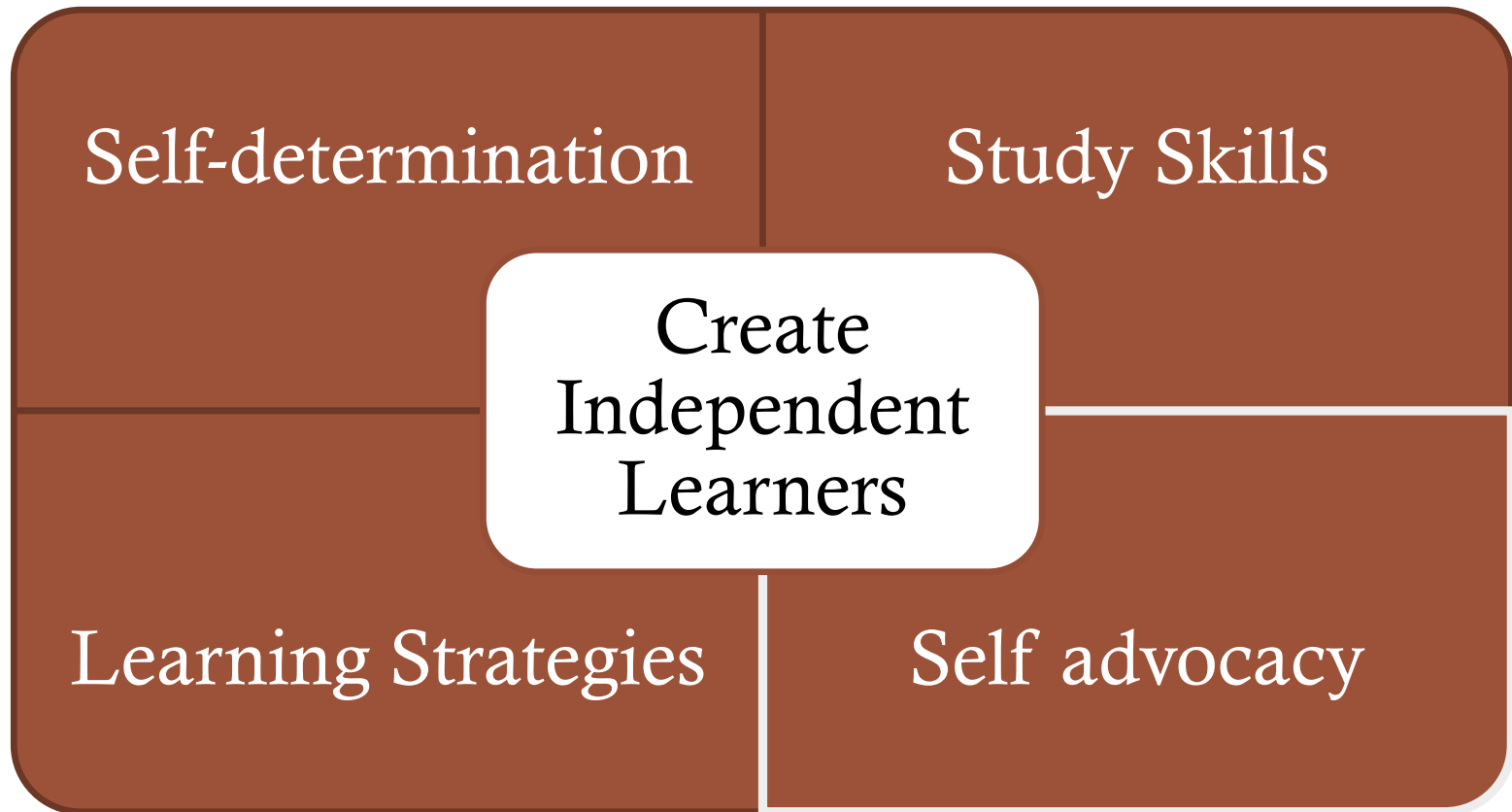
Direct systematic  
instruction

Facilitate  
Language and  
Communication

Communication  
participation in class

Using an interpreter

# Take away



# References

- Antia, S. D., & Rivera, M. C. (2016). Instruction and service time decisions: itinerant services to Deaf and Hard-of-Hearing students. *Journal of Deaf Studies and Deaf Education*, 21, 293-302. doi: 10.1093/deafed/enw032
- Antia, S. D. (2015). Enhancing academic and social outcomes: Balancing individual, family, and school assets and risks for Deaf and Hard-of-Hearing students in general education. In H. Knoors & M. Marschark (Eds.), *Educating deaf learners: Creating a global evidence base* (pp. 527-546). New York, NY: Oxford University Press.



# Contact information

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