



The Relationship between Reading Difficulties and Problem Behaviour

Center on Instruction

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This Webinar's Focus:

Four Questions
about Reading and Behaviour



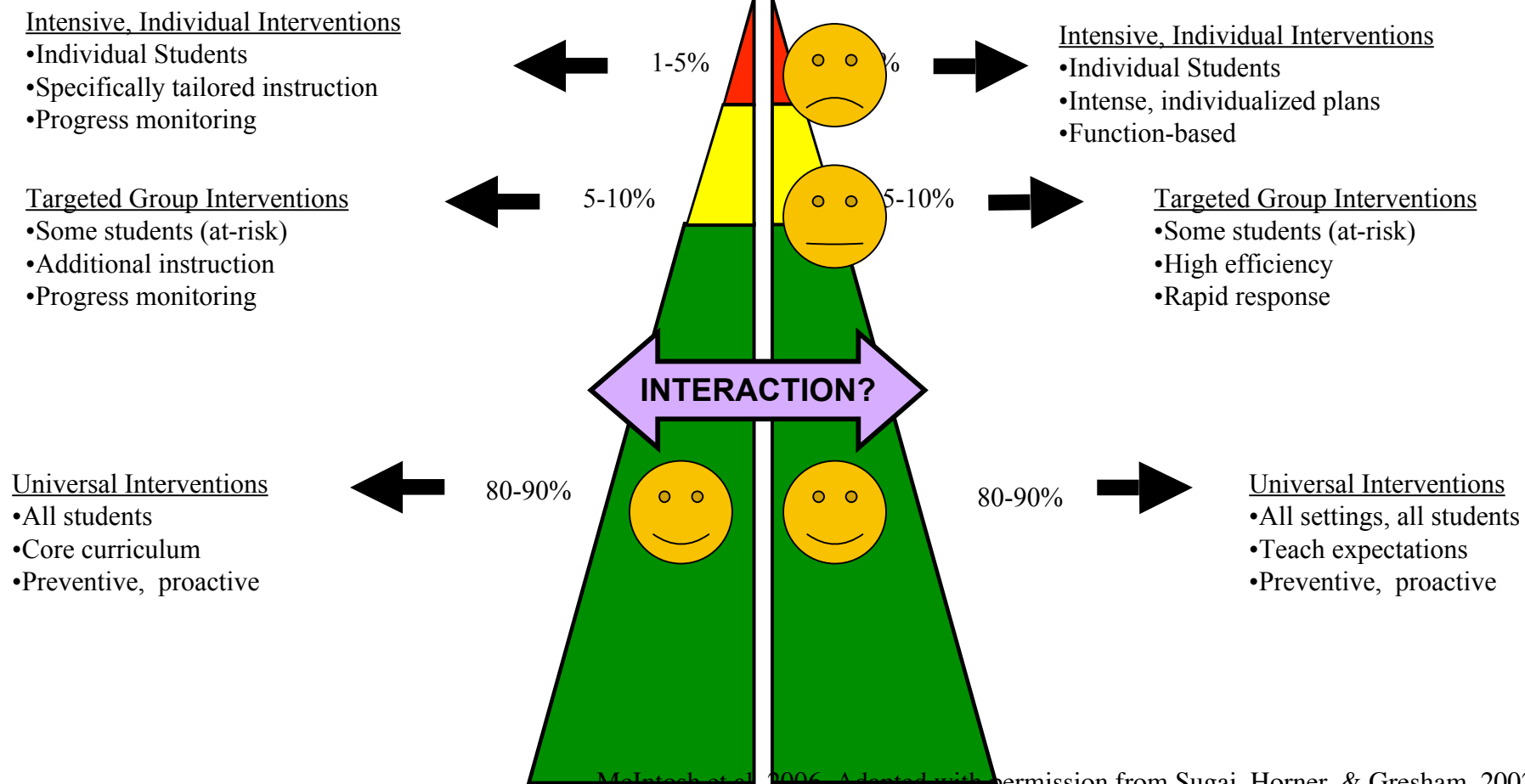
#1: What is the link
between reading and
behaviour?



Three Tier RTI Model of Academic and Behaviour Support

Academic Systems

Behavioural Systems





The Link Between Reading and Behaviour

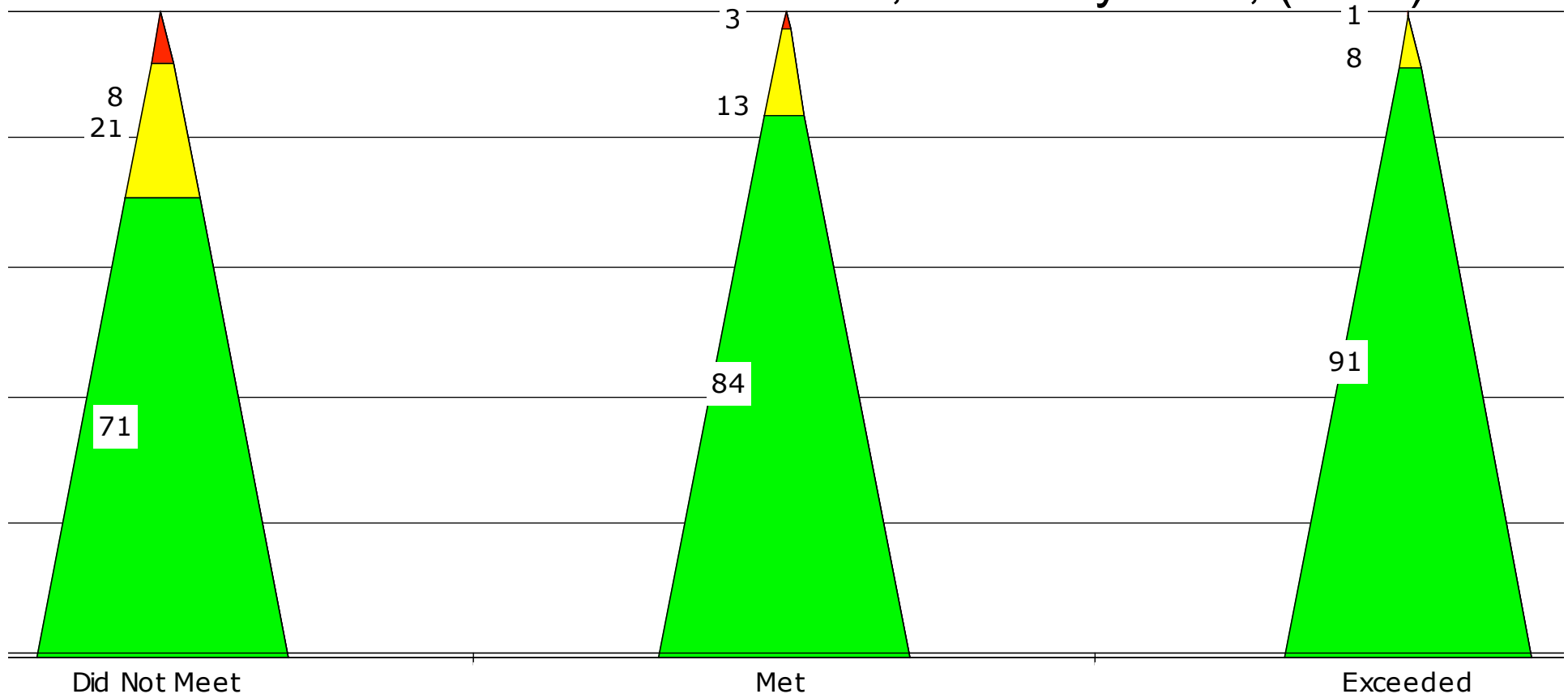
- The relationship increases as students progress through school
 - (Fleming et al., 2004; Morrison et al., 2001; Nelson et al., 2004; Roeser & Eccles, 2000)



Relation between grade 8 reading test and grade 9 ODRs

Proportions of Grade 9 Office Discipline Referrals by Grade 8 OSA Reading

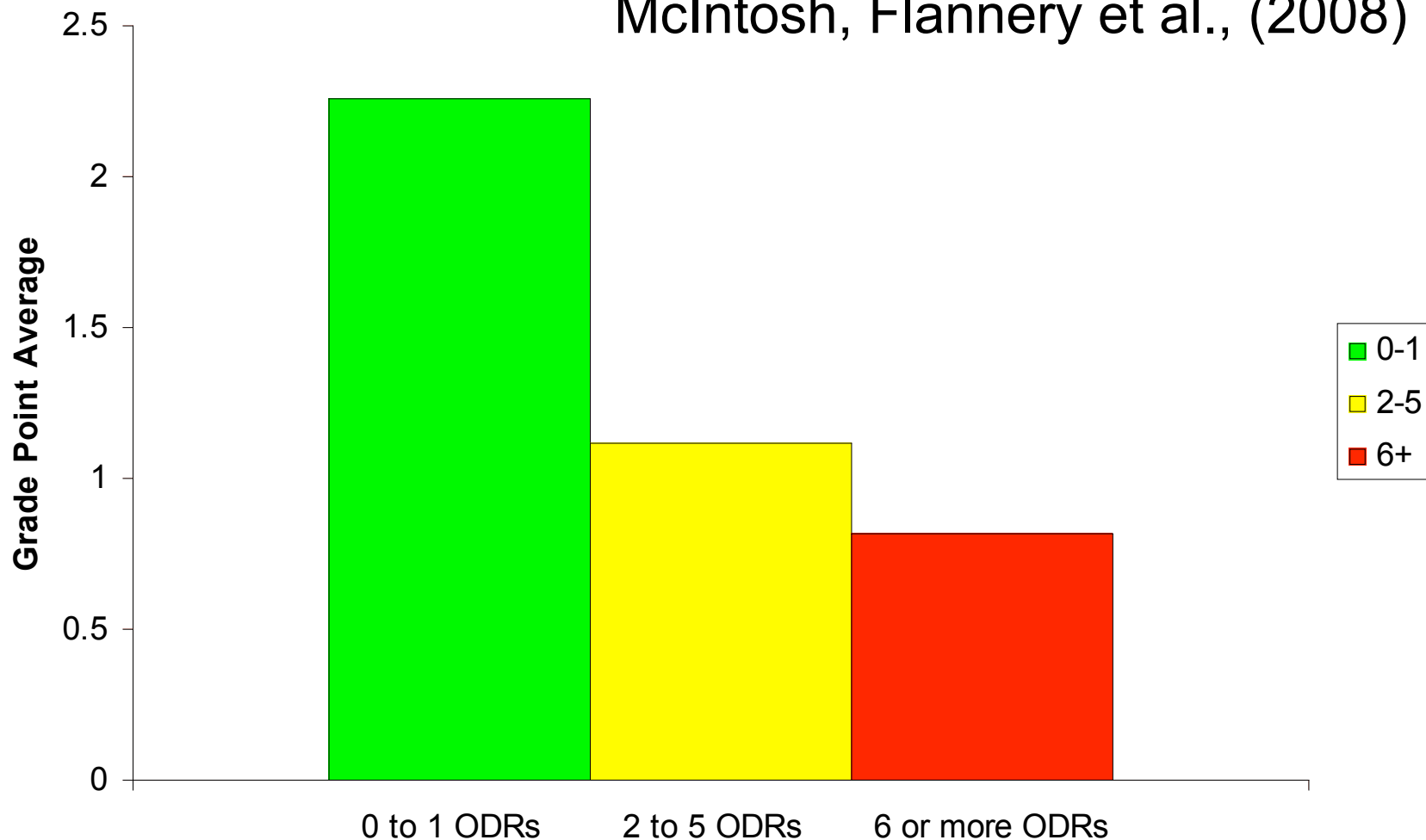
McIntosh, Flannery et al., (2008)





Relation between grade 8 ODRs and grade 9 academic marks

McIntosh, Flannery et al., (2008)





The Link Between Reading and Behaviour

- The relationship increases as students progress through school
 - (Fleming et al., 2004; Morrison et al., 2001; Nelson et al., 2004; Roeser & Eccles, 2000)
- The relationship is strongest for students with externalizing behaviour
 - (Kellam et al., 1998; Nelson et al., 2004)
- Students who experience problems in both areas have worst outcomes
 - (McKinney, 1989; Reinke, 2007)

OUTCOMES FOR STUDENTS ENTERING SCHOOL

	HIGH READING SKILLS	LOW READING SKILLS
HIGH SOCIAL SKILLS	POSITIVE SOCIAL OUTCOMES	AT RISK: READING (AND SOCIAL)
LOW SOCIAL SKILLS	AT RISK: SOCIAL (AND READING)	NEGATIVE SOCIAL OUTCOMES



Question #2:



Which came first?

- Do problems in academics lead to problems in behaviour?
- Do problems in behaviour lead to problems in academics?

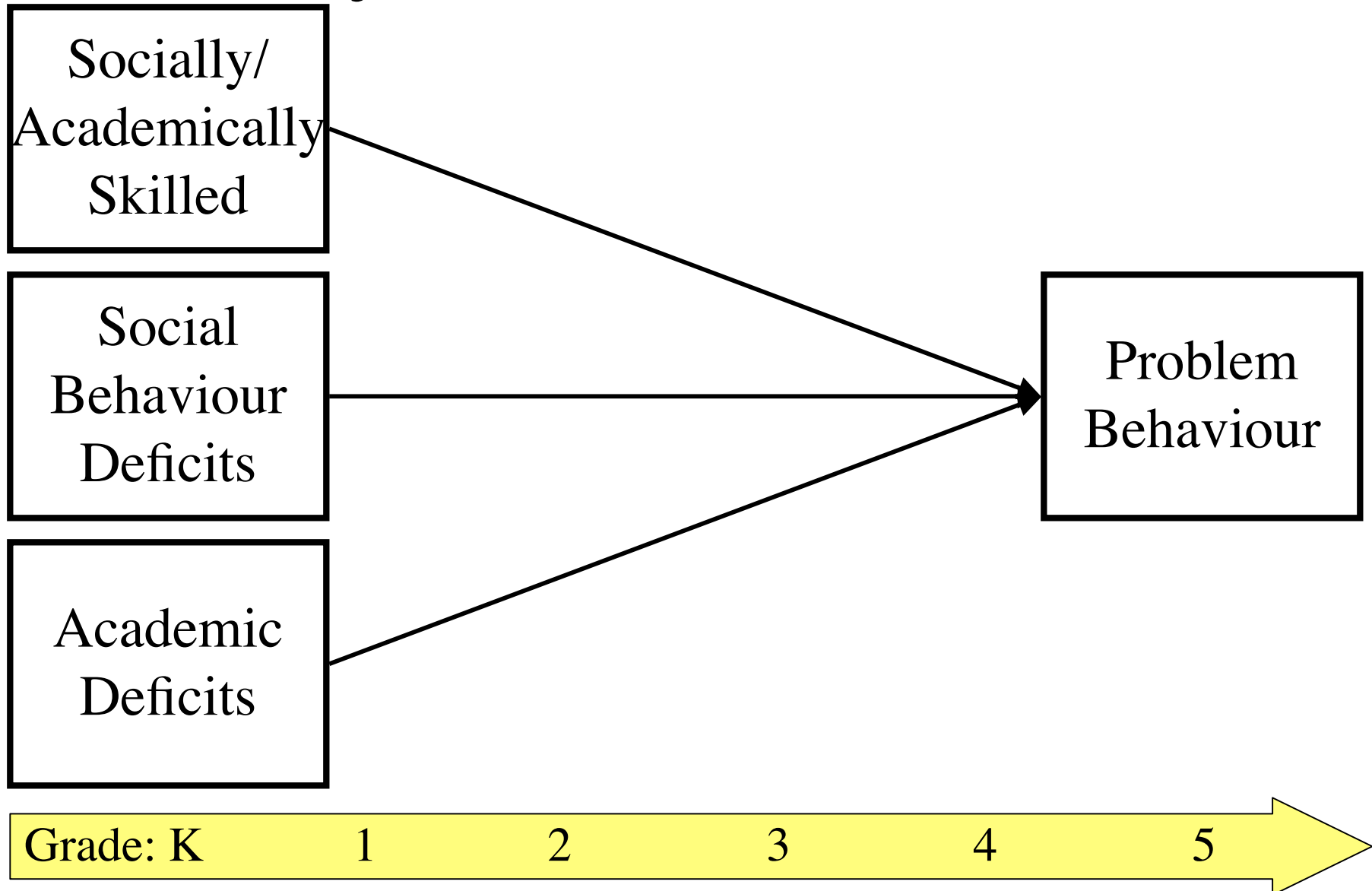


Pathways to Multiple Problems

- Social behaviour deficit model
 - Social skills problems may lead to academic problems (Dishion, French, & Patterson, 1995; Hinshaw, 1992; Reid and Patterson, 1991; Wehby, Lane, & Falk, 2003)
- Academic skill deficit model
 - Academic problems may lead to behaviour problems (Lee et al., 1999; Roberts et al. 2001)



Pathways to Problem Behaviour





Pathways to Behaviour Study

(McIntosh, Horner et al., 2006)

- 6-year longitudinal study exploring prediction of problem behaviour in grade five
- Primary Research Question
 1. What reading and behaviour screening measures predict multiple office discipline referrals in grade five?



Why is two or more office discipline referrals an important outcome?

- Signals need for additional support beyond typical behaviour support
- Effective discriminator based on standardized behaviour rating scales
 - *SSRS: Social Skills Rating Scale* (Walker et al., 2005)
 - *BASC-2: Behavior Assessment Scale for Children* (McIntosh, Campbell, Carter, & Zumbo, 2008)



Pathways to Behaviour Study

Method

- Setting
 - Small school district (5,542) in a mid-sized city
 - District-wide behaviour and reading support programs
- Participants
 - All K-5 students enrolled in the district from 1998-2004
 - Grade 4 $n = 425$, Grade 2 $n = 279$, Grade K $n = 194$
- Measures
 - Office Discipline Referrals (ODRs)
 - *Dynamic Indicators of Basic Early Literacy Skills (DIBELS)*
 - Curriculum-Based Measurement: Oral Reading Fluency (ORF)
- Data Analysis
 - Binary Logistic Regression



Data Analysis

■ Binary Logistic Regression

□ Backward Likelihood Ratio (LR) Method

- $\alpha = .01$ for significance, .05 for inclusion in model

□ Dependent Variable

- Receiving 2 or more major ODRs in grade 5

□ Predictor Variables

- Grade 4: ODRs and Oral Reading Fluency
- Grade 2: ODRs and Oral Reading Fluency
- Grade K: ODRs and DIBELS measures



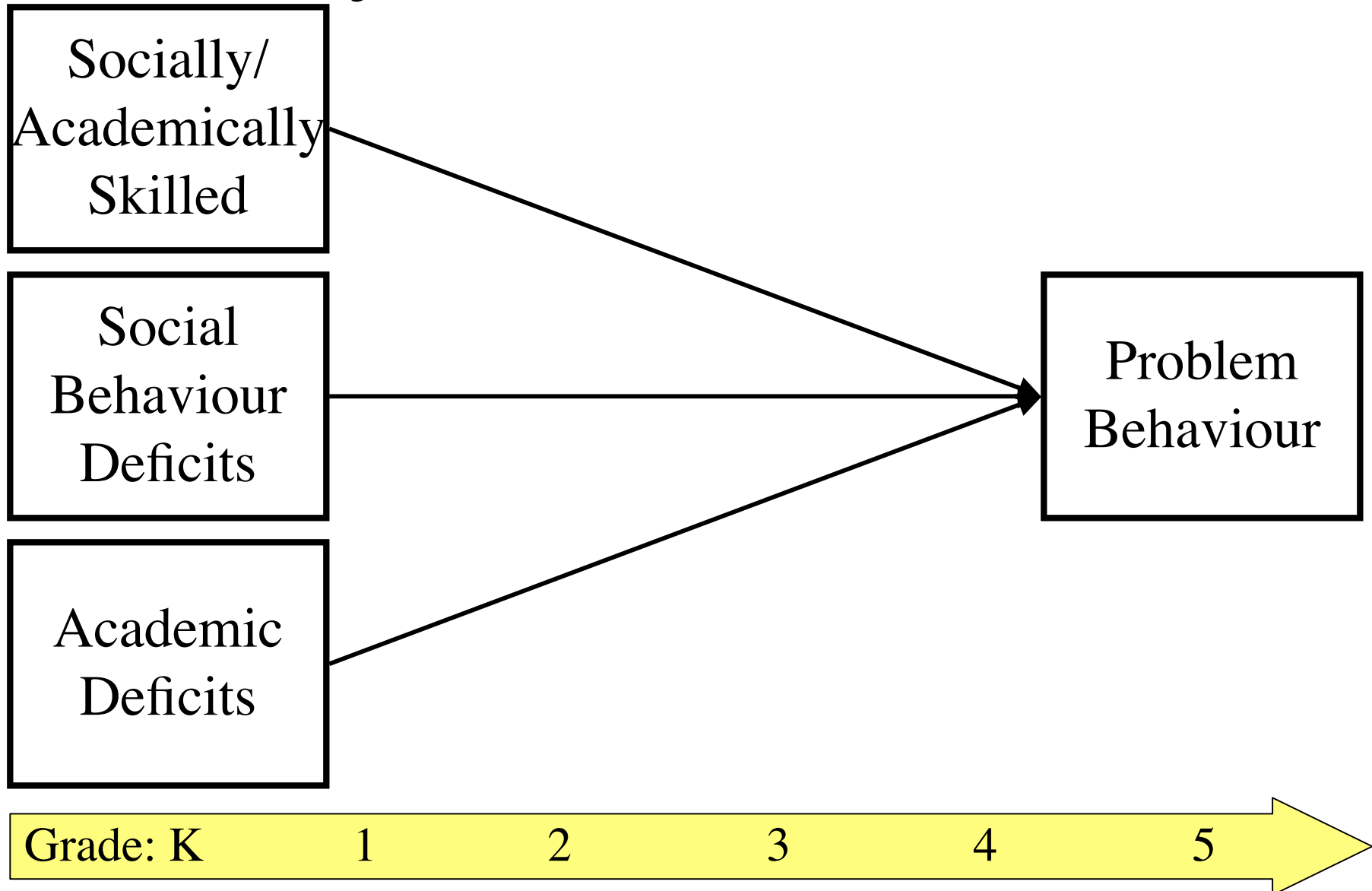
Pathways to Behaviour Study

Results: Significant Predictors

- Grade 4
 - ODRs ($p < .001$)
 - Oral Reading Fluency in winter ($p < .001$)
- Grade 2
 - Oral Reading Fluency in spring ($p < .001$)
 - ODRs ($p = .01$)
- Grade K
 - *DIBELS Phoneme Segmentation Fluency* in spring ($p < .001$)

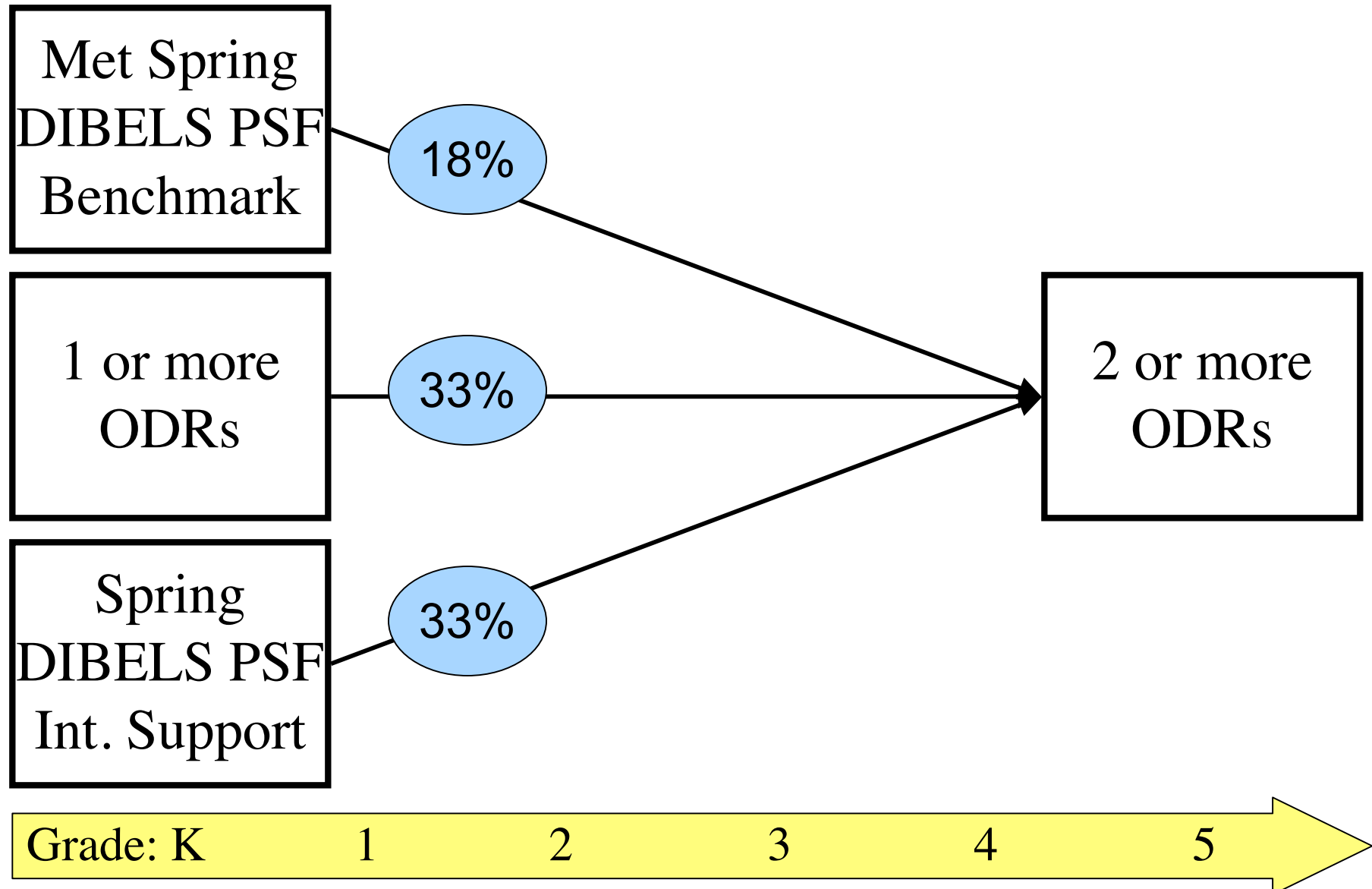


Pathways to Problem Behaviour





Conditional Probabilities





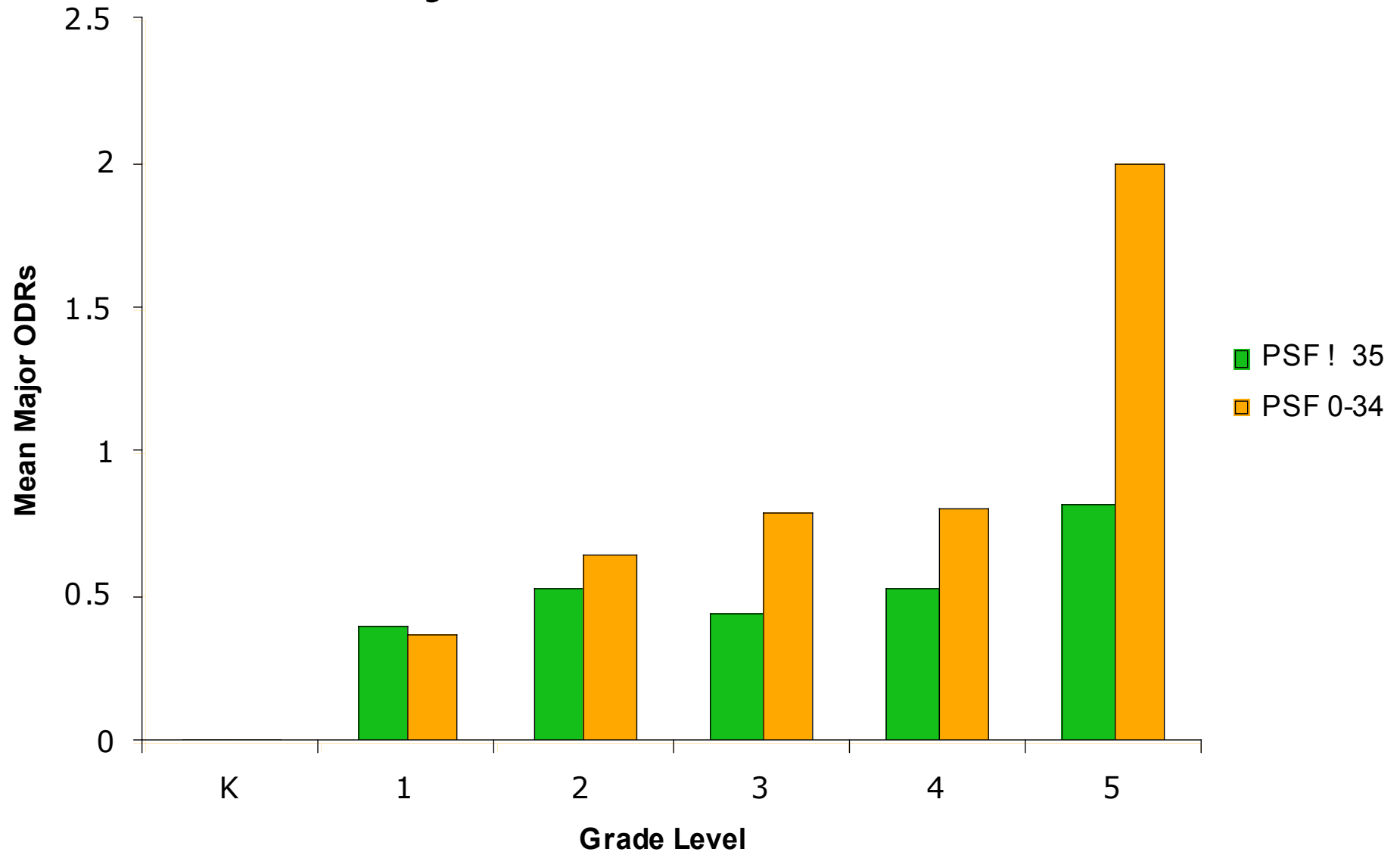
Pathways to Behaviour Study

Results

- Conditional Probabilities: *DIBELS Phoneme Segmentation Fluency* (spring) on ODRs
 - Probability when **established** (35+): 18%
 - Probability when **emerging** (10-34): 25%
 - Probability when **deficit** (0-9): 33%



ODRs by K *DIBELS* PSF Score





Pathways to Behaviour Study

Discussion

- Deficits in either area were independent risk factors
 - Provides support for both pathways
 - Problems in academics preceded problems in behaviour
- Skill deficits at the end of kindergarten accounted for more variance than skills at the start of kindergarten



Reading and Behaviour Lesson #2

- It is the chicken and the egg!
 - Academic problems often precede behaviour problems
 - Behaviour problems often precede academic problems



#3: What is the cause of this relationship?



What are the mechanisms?

Two Explanations



“Chaotic Classroom” Theory

- Access to instruction (Levy & Chard, 2001)



MEAP – Grade 4 Reading Assessment

29 Elementary schools in Michigan
(reading and behaviour support)

Over 55% of major
ODRs from classroom

Probability of scoring
below 75% proficiency:

.78

Under 55% of major
ODRs from classroom

Probability of scoring
above 75% proficiency:

.75

(Goodman, 2005)



What are the mechanisms?

Two Explanations

“Chaotic Classroom” Theory

- Access to instruction (Levy & Chard, 2001)

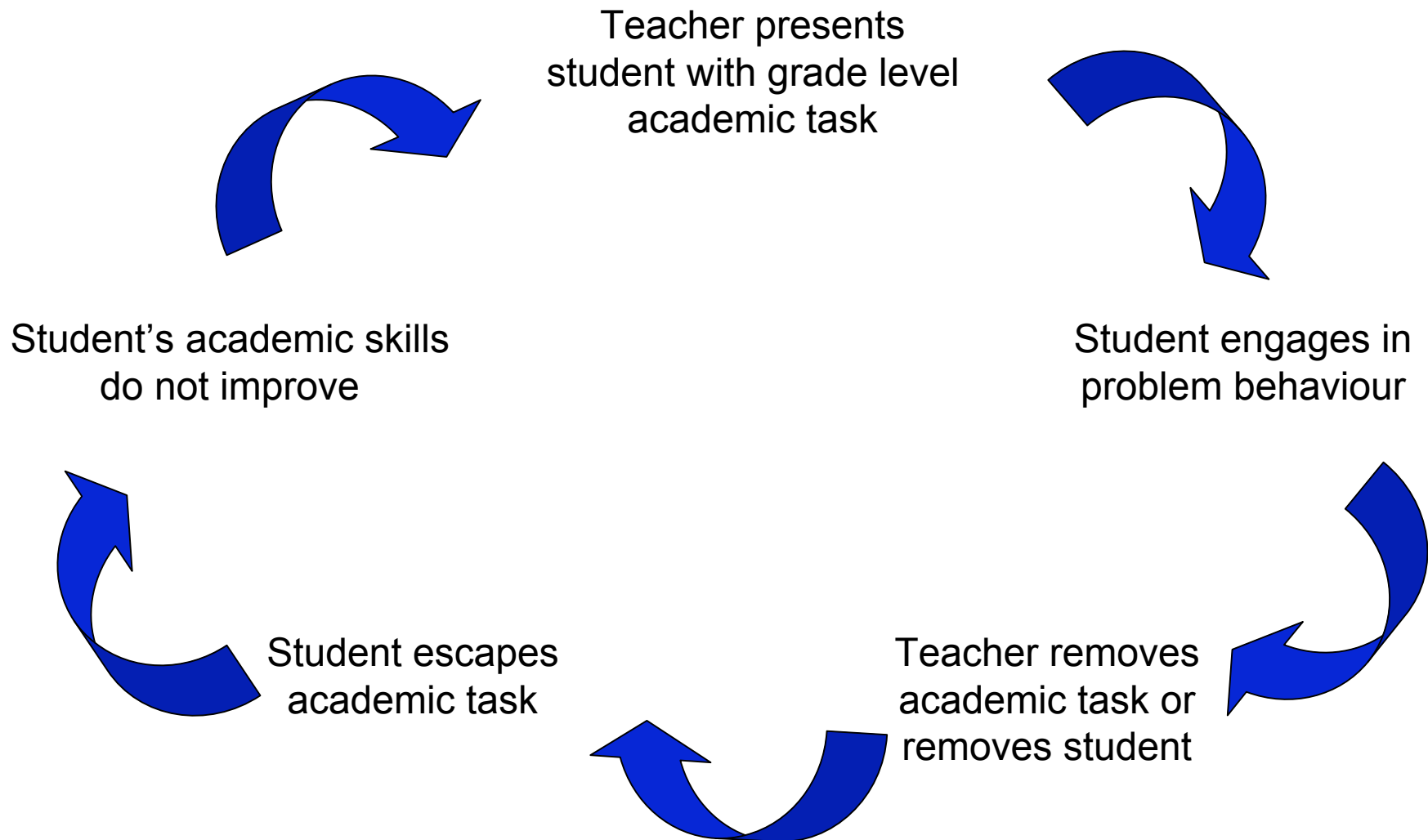
Response to Intervention Theory

- Repeated failure (McIntosh, Sadler, & Brown, 2008)
- Two responses (Merton, 1968)
 - Aggression
 - Withdrawal
- Coercive Cycle of Teacher-Student Interaction (Patterson, 1982; McIntosh, Horner et al., in press)



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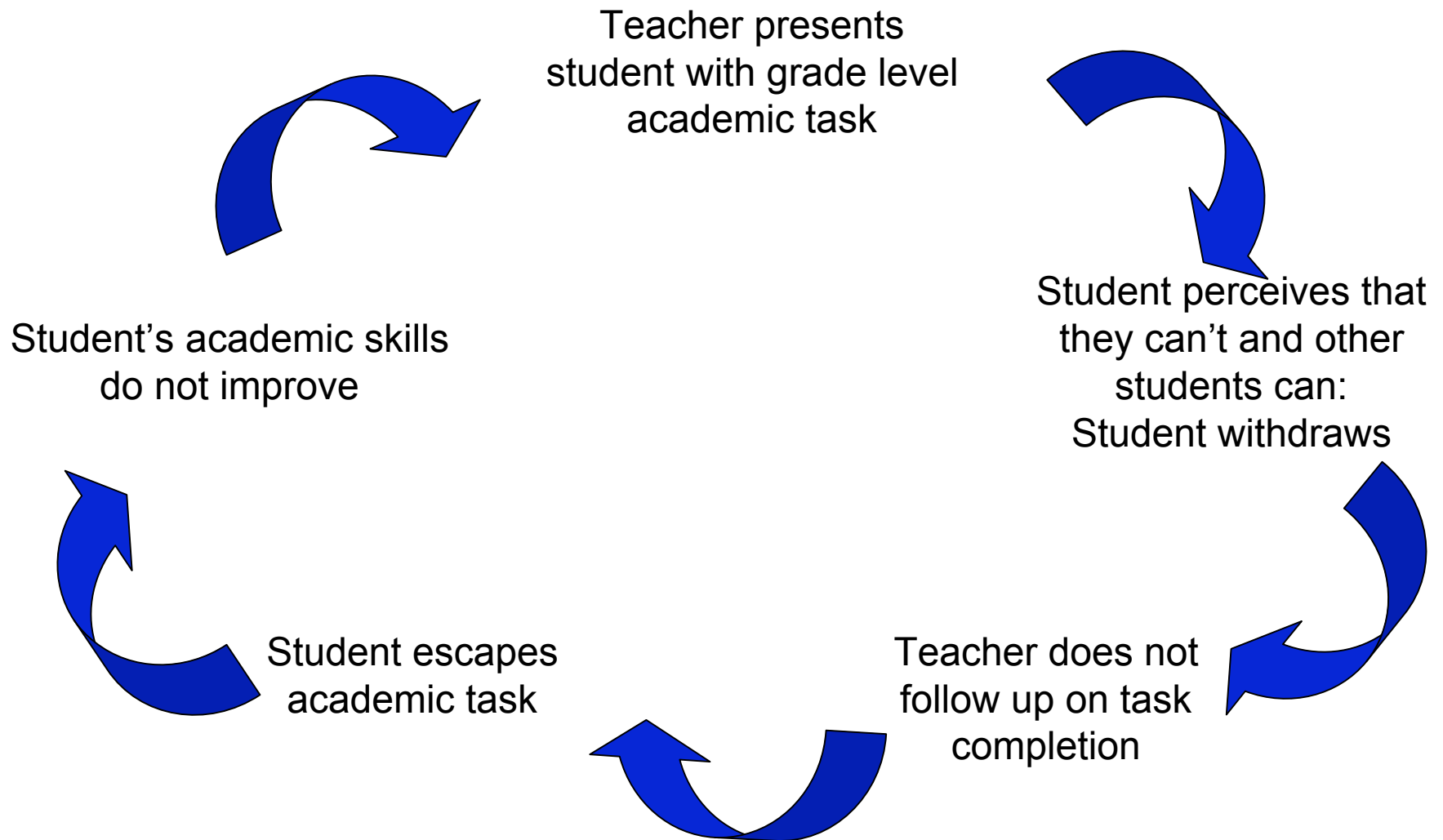
Cycle of Academic and Behavioural Failure: Aggressive Response





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Cycle of Academic and Behavioural Failure: Withdrawal Response





Reading and Function Study

(McIntosh, Horner et al., in press)

- Identifying function of problem behaviour for students with challenges in behaviour or behavior and reading
- Primary Research Question:

Are there significant differences in reading skills based on the indicated function of problem behaviour?



Reading and Function Study

Method

■ Settings

- Small school district (5,542) in a mid sized city
- Medium school district (17,878) in a mid sized city

■ Participants

- 47 students in grades 4, 5, or 6 with 2 or more ODRs in 2003-2004

■ Measures

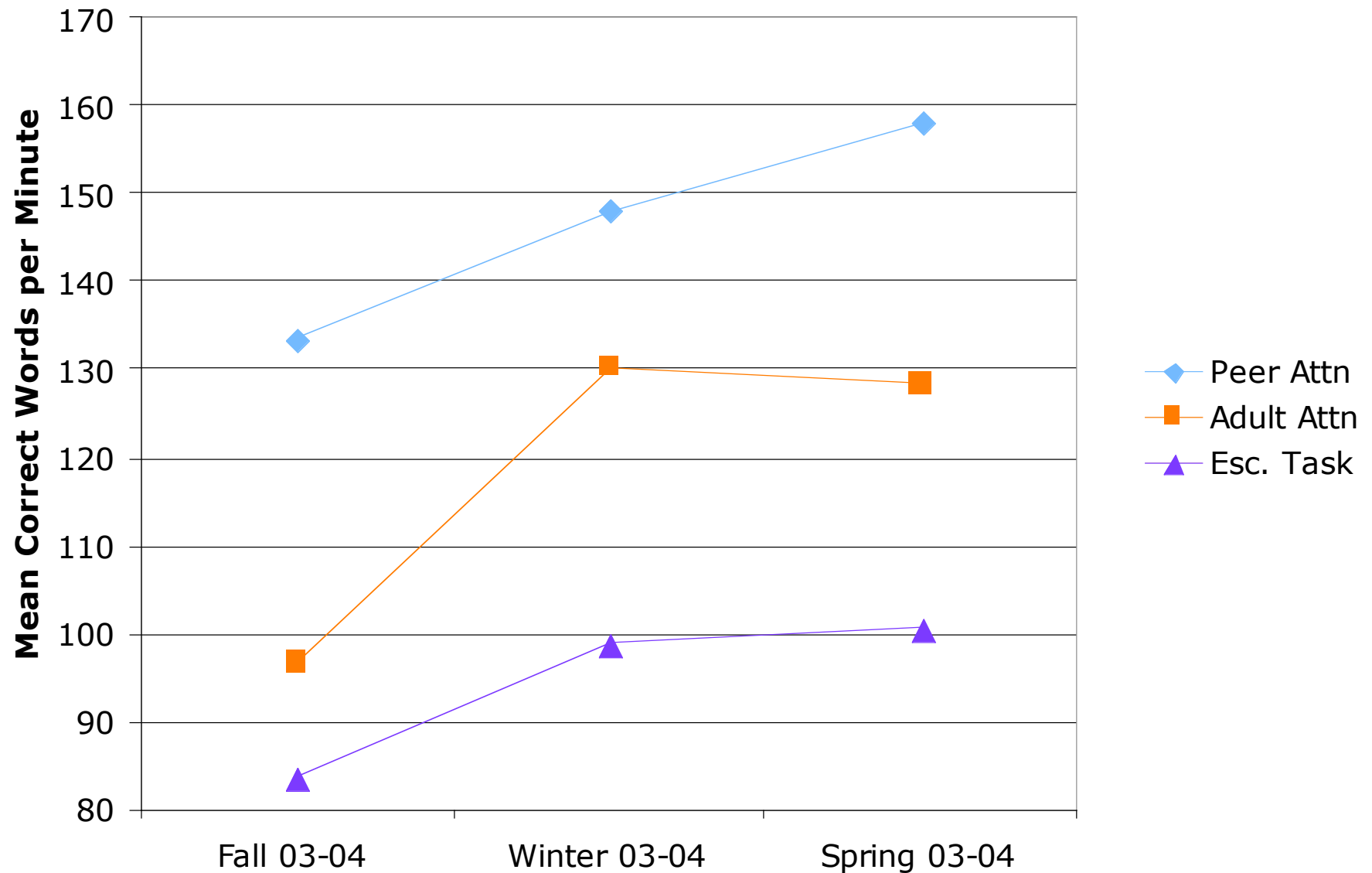
- Office Discipline Referrals (ODRs)
- Curriculum-based Measurement: Oral Reading Fluency (ORF)

■ Sources of Function Information

- Teacher FBA interview
- School-based FBA
- Trends in “motivation” provided in ODRs

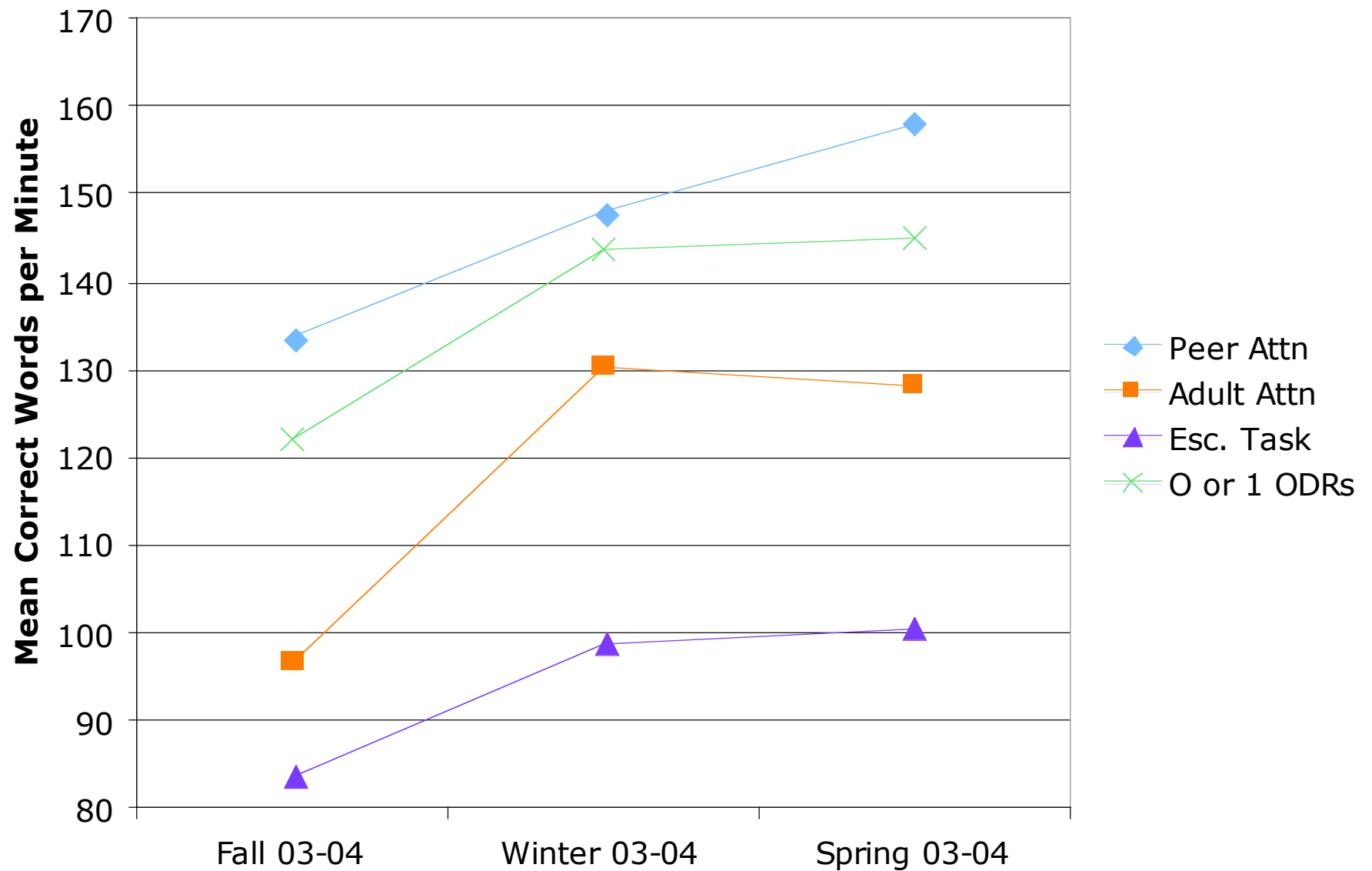


ORF Trajectories by Function Grade 5 (n = 24)





ORF Trajectories by Function Grade 5 (n = 24)





Reading and Function Study

Discussion

- Quantitative differences in reading skills based on function of problem behaviour
- Reading skills (for escape/avoid academic task) became more discrepant over time
- Indicates function is a critical variable in:
 - understanding the academic-behaviour link
 - selecting appropriate interventions
- Mechanism involved may be access to instruction



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A Second Walk along the Pathways to Behaviour Study

(McIntosh, Sadler, & Brown, 2008)

(see webinar to view results)



Implications: Student Level

- Teach and monitor phonological awareness (PA) skills early!
 - 90% of poor readers have PA deficits (Sindelar et al., 2002)
 - PA skills are the best predictors of reading development
 - For native English speakers (Stanovich et al., 1997)
 - For students learning English in school (Chiappe et al., 2007; Lesaux & Siegel, 2003)
 - PA skills are transferable across languages (Chiappe et al., 2002)



Implications: Systems Level

- Continued support for integrating reading and behaviour support systems
 - Evidence-based reading instruction can help prevent problem behaviour
 - School-wide behaviour support can allow quality reading instruction to take place
 - Outcomes are shared by both systems



#4: So...how can we use this information to help students?



Improve Support by Addressing Both Mechanisms

“Chaotic Classroom” Theory

- Create safe, positive classroom environments where instruction can take place

Response to Intervention Theory

- Provide evidence-based reading instruction to encourage success and prevent cycles of failure



Integrating Reading and Behaviour Systems

- Combining teams
 - school-wide and individual support (Stollar et al., 2008)
- Screening with both types of data
 - Students at risk in both areas receive more intensive intervention (Sadler & Sugai, 2008)
- Identifying and working toward shared, valued outcomes (McIntosh, Horner, & Sugai, in press)



Shared Features of Reading and Behaviour Support Systems

- Commitment to evidence-based practice
- Approach based on principles of effective instruction
- Data-based decision making
- Regular screening
- Universal core curriculum
- Continuum of support beyond universal systems
- Access to reinforcement for desired behaviours



Combined Approach Study

(McIntosh, Chard, Boland, & Horner, 2006)

- Descriptive study exploring effects of a combined approach to reading and behaviour support
- Primary Research Question:
- When effective three tier reading and behaviour support systems are in place, how many students need additional reading and/or behaviour support?



Combined Approach Study

Method

■ Setting

- Small school district (5,246) in a mid-sized city
- District-wide behaviour and reading support programs

■ Participants

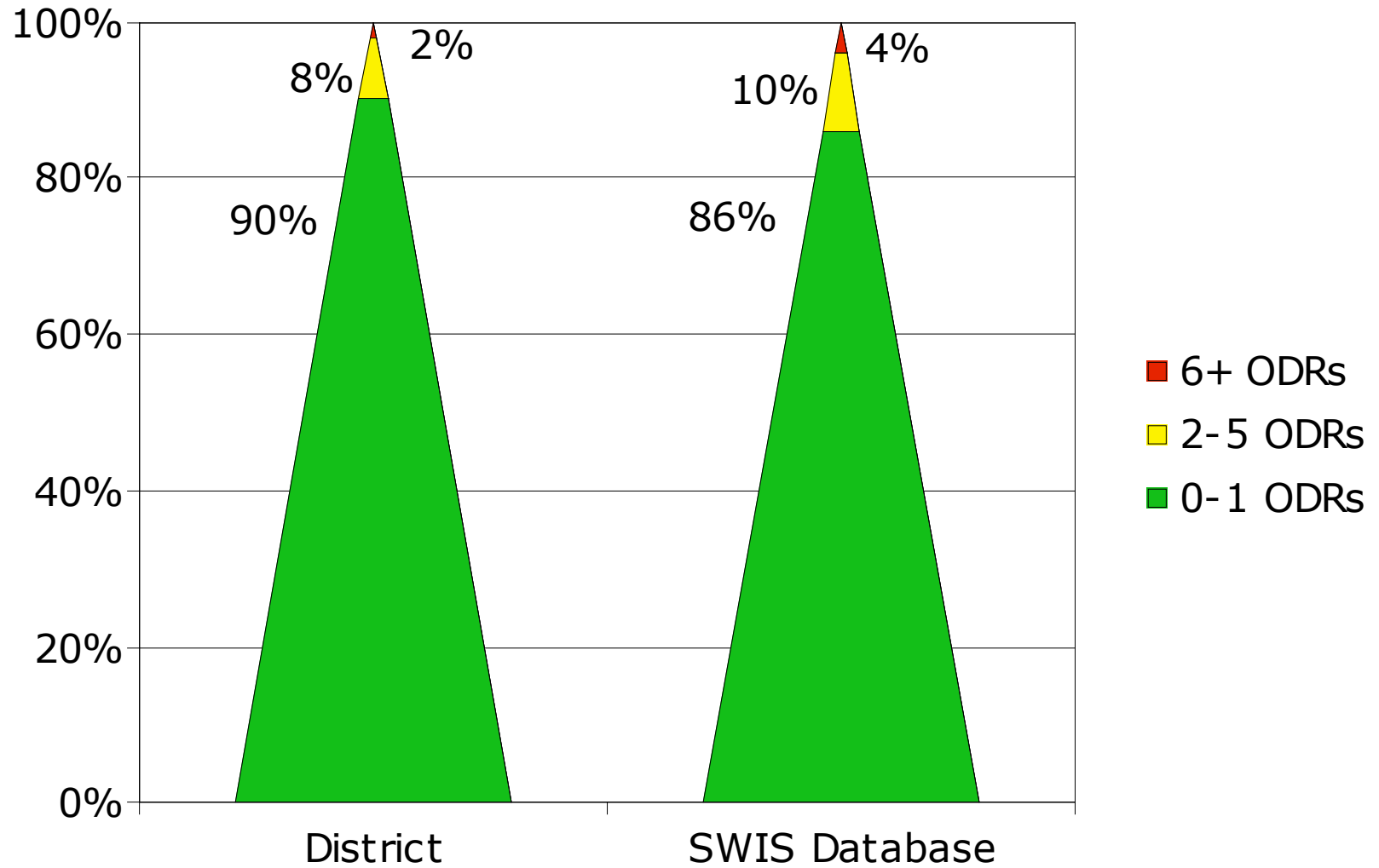
- All third grade students in 2001-2002 ($n = 442$)

■ Measures

- Office Discipline Referrals (ODRs)
 - Total number of major ODRs per year
- Curriculum-Based Measurement: Oral Reading Fluency (ORF)
 - *DIBELS* instructional recommendation in Spring



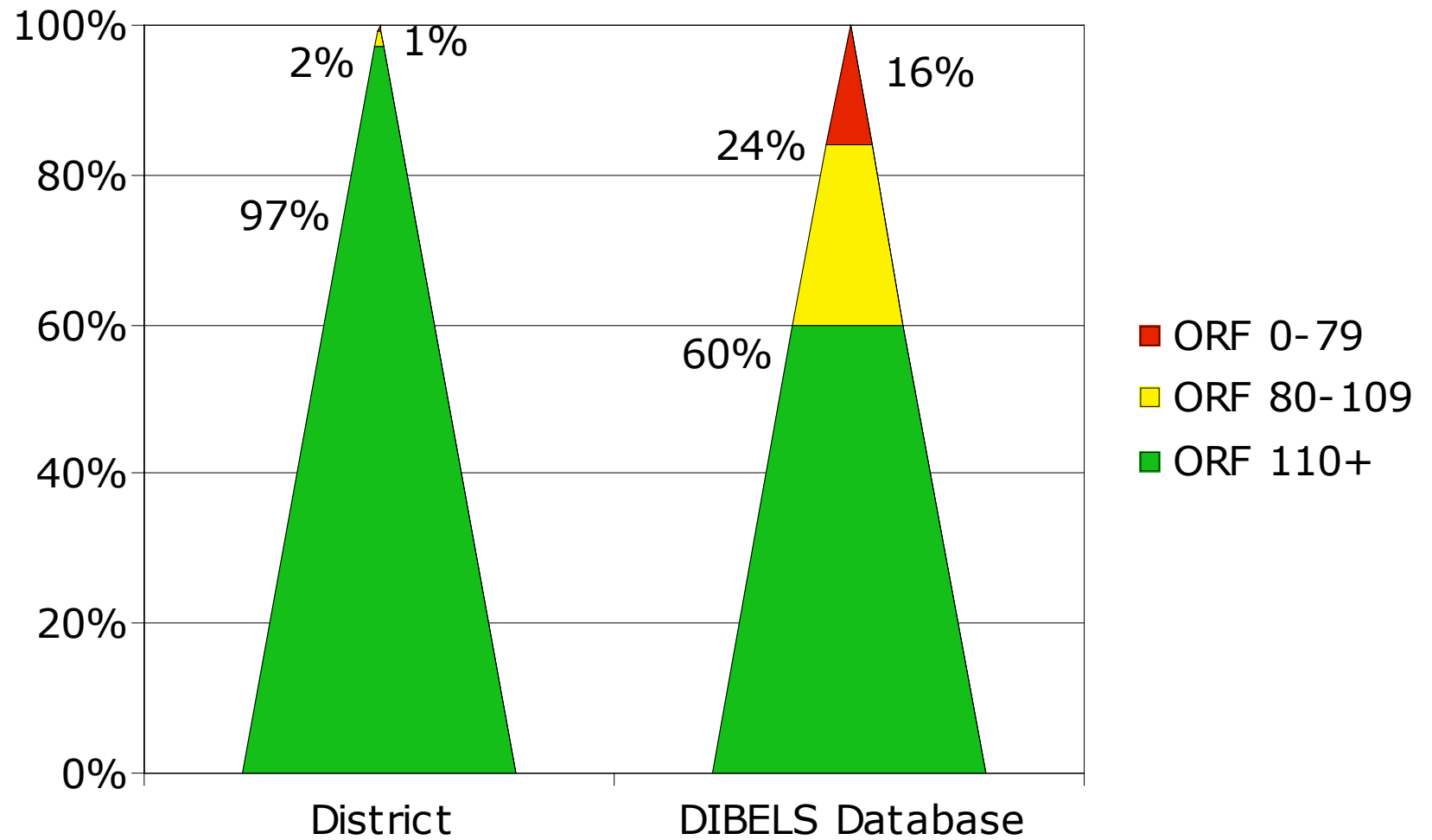
Proportions of K-5 Students by Number of ODRs (2001-2002)



(McIntosh, Chard, Boland, & Horner, 2006)



Proportions of Grade 3 Students by Oral Reading Fluency (2001-2002)



(McIntosh, Chard, Boland, & Horner, 2006)



Combined Approach Study

Results

- With school-wide reading and behaviour support programs in place, challenges in grade 3 were reduced to a manageable level.
 - Behaviour: 11% (10% compared to 14%)
 - Reading: 2.5% (compared to 40% nationally)



Integrating Three-Tier Reading and Behaviour Systems

- California
 - Lane & Menzies (2003)
- Michigan
 - Ervin, Schaughency, Goodman, McGlinchey, & Matthews (2006)
- Ohio
 - Stollar, Poth, Curtis, & Cohen (2006)
- Oregon
 - Sadler & Sugai (2008)



Supporting Students in Academics and Behaviour

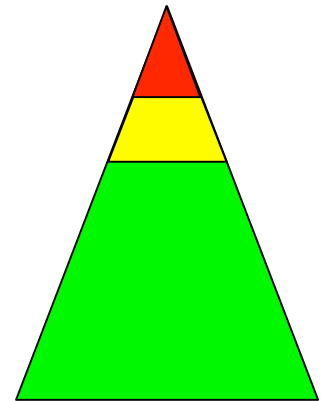


Provide **quality universal support** for all students in reading and behaviour



Provide **combined academic and behaviour support** for students who need additional support

- Functional Behaviour Assessment
 - Consider academic skills
- Monitor progress in both areas





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Selected References

- Dweck, C. S., & Wortman, C. B. (1982). Learned helplessness, anxiety, and achievement motivation: Neglected parallels in cognitive, affective, and coping responses. In H. Krohne & L. Laux (Eds.), *Achievement, stress and anxiety* (pp. 93-125). Washington, DC: Hemisphere.
- Goodman, S. D. (2005, October). *Implementation of reading and behavior support at the state level*. Paper presented at the 2005 PBIS Forum, Chicago, IL.



Selected References (cont.)

Merton, R. K. (1968). *Social theory and social structure*. New York: Free Press.

McIntosh, K., Chard, D. J., Boland, J. B., & Horner, R. H. (2006). Demonstration of combined efforts in school-wide academic and behavioral systems and incidence of reading and behavior challenges in early elementary grades. *Journal of Positive Behavior Interventions*, 8, 146-154.

McIntosh, K., Flannery, K. B., Sugai, G., Braun, D. H., Cochrane, K. L. (2008). Relationships between academics and problem behavior in the transition from middle school to high school. *Journal of Positive Behavior Interventions*, 10, 243-255.



Selected References (cont.)

- McIntosh, K., Horner, R. H., Chard, D. J., Boland, J. B., & Good, R. H. (2006). The use of reading and behavior screening measures to predict non-response to school-wide positive behavior support: A longitudinal analysis. *School Psychology Review*, 35, 275-291.
- McIntosh, K., Horner, R. H., Chard, D. J., Dickey, C. R., & Braun, D. H. (in press). Reading skills and function of problem behavior in typical school settings. *Journal of Special Education*.
- McIntosh, K., Horner, R. H., & Sugai, G. (in press). *Sustainability of systems-level evidence-based practices in schools: Current knowledge and future directions*. In G. Sugai, R. H. Horner, G. Dunlap & W. Sailor (Eds.), *Handbook of positive behavior support*. New York: Springer.



Selected References (cont.)

McIntosh, K., Sadler, C., & Brown, J. A. (2008).

Kindergarten Reading Skills and Response to Instruction as Risk Factors for Challenging Behavior. Manuscript in progress.

Patterson, G. R. (1982). *Coercive family process.* Eugene, OR: Castalia Publishing.

Stollar, S. A., Schaeffer, K. R., Skelton, S. M., Stine, K. C., Lateer-Huhn, A., & Poth, R. L. (2008). Best practices in professional development: An integrated three-tier model of academic and behavior supports. In A. Thomas & J. P. Grimes (Eds.), *Best practices in school psychology V* (pp. 875-886). Bethesda, MD: National Association of School Psychologists.