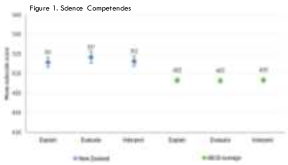
EXPLORING STUDENTS' SRL STRATEGIES FOR A CLASSROOM SCIENCE ASSESSMENT

Maansa Bajaj, PhD Student
Dr Valerie Sotardi
Associate Professor, Misty Sato
University of Canterbury

PISA FINDINGS (2015)

NZ 's top performing students in science score above average among OECD countries [1]



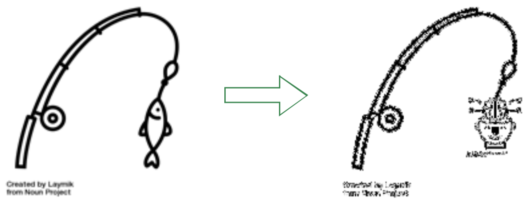
On average Pākehā/European and Asian students scored above the OECD average in science, reading and mathematics [1]

OVERARCHING QUESTION

What are students' learning approaches and motivational beliefs for a science classroom assessment?

SELF-REGULATED LEARNING (SRL)

"Give a man a fish, you feed him for a day. Teach a man to fish, and you feed him for a lifetime"



SELF-REGULATED LEARNING (SRL)

Zimmerman (1989) proposed social cognitive perspective of self-regulated learning[2]

SRL
- Cognition
- Meta-cognition
- Motivation

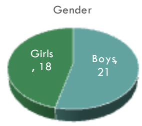
Forethought → Performance ↔ Self-Reflection → Forethought

RESEARCH QUESTIONS

1. What are the self-regulated learning approaches students demonstrate for a science classroom assessment?
2. Do self-regulated learning processes predict student performance?
3. Are there group differences between students' self-regulated learning practices based on gender and class groups?

METHODS

39 secondary students from one school in Christchurch, New Zealand.



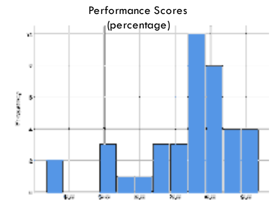
Instruments:

1. SRL: Microanalysis Protocol[3]

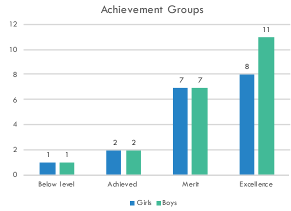
Forethought Phase	Self-Reflection Phase
• Before the assessment • Task analysis & Motivation: 7 questions	• After assessment • Self-evaluation & Self-Reaction: 6 Questions

E.g. As you begin preparing for your assessment do you have a goal mind?

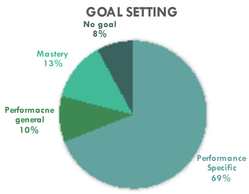
PERFORMANCE OUTCOMES

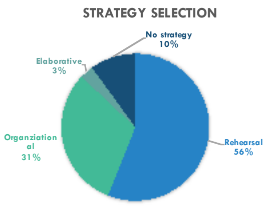


M = 73.9; S.D = 13.87; N = 39



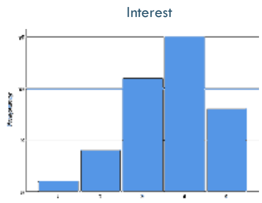
STUDENTS' SRL STRATEGIES & MOTIVATION: AN OVERVIEW





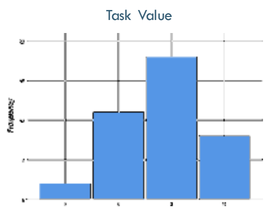
STUDENTS' SRL STRATEGIES & MOTIVATION: AN OVERVIEW

M = 3.9; S.D = .55; N = 39

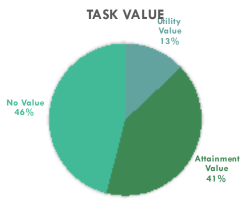


M = 3.64; S.D = 1.01; N = 39

STUDENTS' SRL STRATEGIES & MOTIVATION: AN OVERVIEW



M = 3.82; S.D = .82; N = 39



KEY TAKEAWAYS

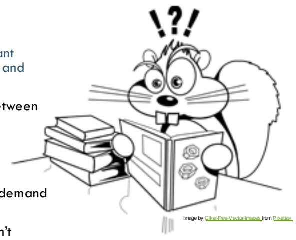
Further analyses revealed no statistically significant relationships between forethought SRL processes and students' performance

There was a statistically significant difference between boys and girls on strategy selection

What's interesting about these findings?

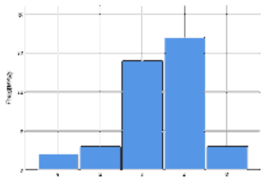
Inconsistent with existing literature[4] – why?

1. Does the design of the classroom assessment demand for students to set goals
2. Perhaps, the structure of the assessment doesn't require students' to demonstrate a multitude of strategies that might aid their preparation.

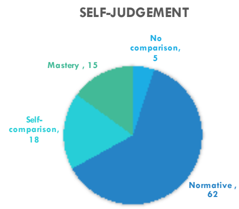


STUDENTS' SRL STRATEGIES & MOTIVATION: AN OVERVIEW

Self-evaluation



M = 3.41; S.D = .93; N = 39



STUDENTS' SRL STRATEGIES & MOTIVATION: AN OVERVIEW

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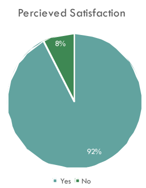
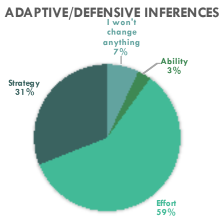




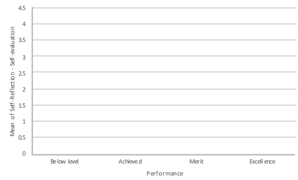
SELF-REFLECTION ANALYSES

A significant correlation between students' perceived task value and their self-evaluation

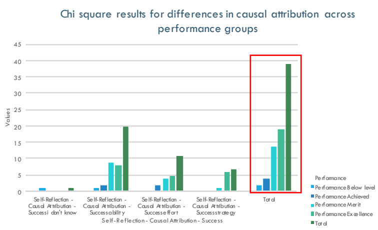
		Percentage score	Self-Reflection - Self-evaluation
Percentage score	Pearson Correlation	1	.463**
Task value	Pearson Correlation	0.244	.439**

**. Correlation is significant at the 0.01 level (2-tailed).

ANOVA revealed significant differences between performance groups on the self-evaluation measure



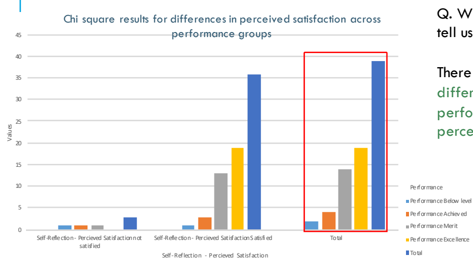
Chi- square Results



Q. What does the graph tell us?

There are significant differences between performance groups on causal attribution

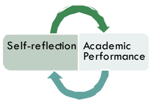
Chi- square Results



Q. What does the graph tell us?

There are significant differences between performance groups on perceived satisfaction

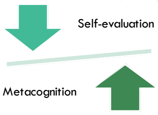
KEY TAKEAWAYS



higher performers held high SRL standards, attributing performance to self-regulatory strategies, and are more satisfied with their performance measure.

Image by Clker-Free-Vector-Images from Pixabay

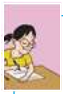
Correlation between students' performance and their perceptions of how well they prepared may be indicative of students' being aware of the direct link between their preparation and their performance – this could indicate metacognitive monitoring



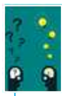
CONCLUSION

This is one of the few studies measuring students' self-regulatory standards for an academic task

It might be likely that students didn't need to go any further in their self-regulation because it was a low-stakes classroom assessment



Although this study doesn't indicate significant differences, it does provide us with how higher performing students approach a classroom assessment.



Future research focusing on a larger sample size that includes a range of student performances may provide more evident relationships

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THANK YOU! ☺

Maansa Bajaj

Email: maansa.bajajprakash@pg.canterbury.ac.nz