

Webinar: Ka Ora, Ka Ako: What is the evidence that free school lunches are worth investing in?

Impact of hunger on NZ students' learning : Evidence from large-scale international assessments

Pippa McKelvie-Sebileau, PhD

Research Fellow, Te Kura i Awarua

Eastern Institute of Technology, Te Pūkenga, Hawke's Bay

National
Science
Challenges

A BETTER
START

E Tipu e Rea



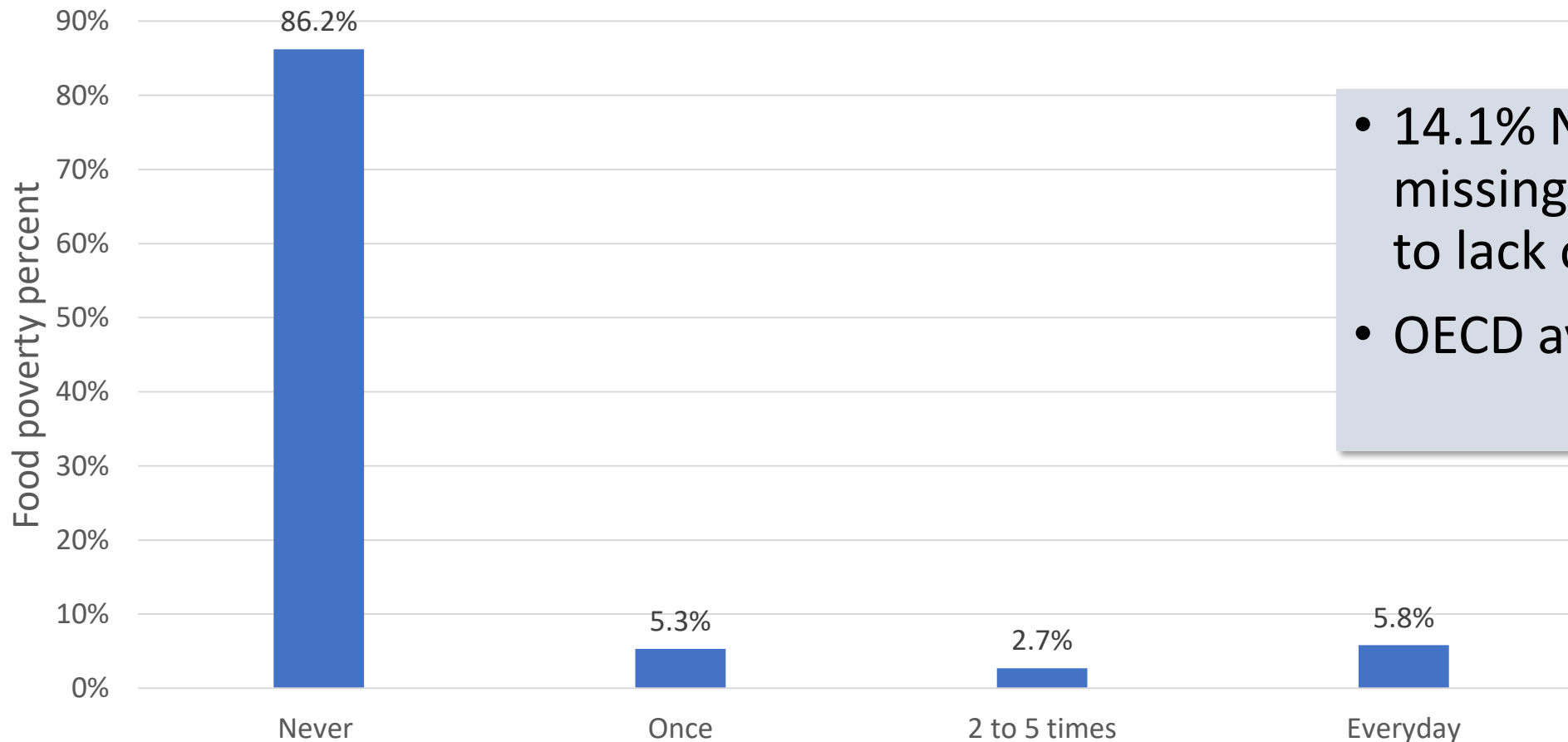


Programme for International Student Assessment

- 90 countries
- Every 3 years since 2000
- 15-year-olds
- Maths, Reading and Science
- Country ranks, OECD rank
- PISA Aim: to be a policy tool, share what works for learning, real-world problems
- 2022 – **For the first time** students were asked: How many times per week do you miss meals due to not enough money?

PISA 2022 - NZ had second highest rate of food poverty in OECD

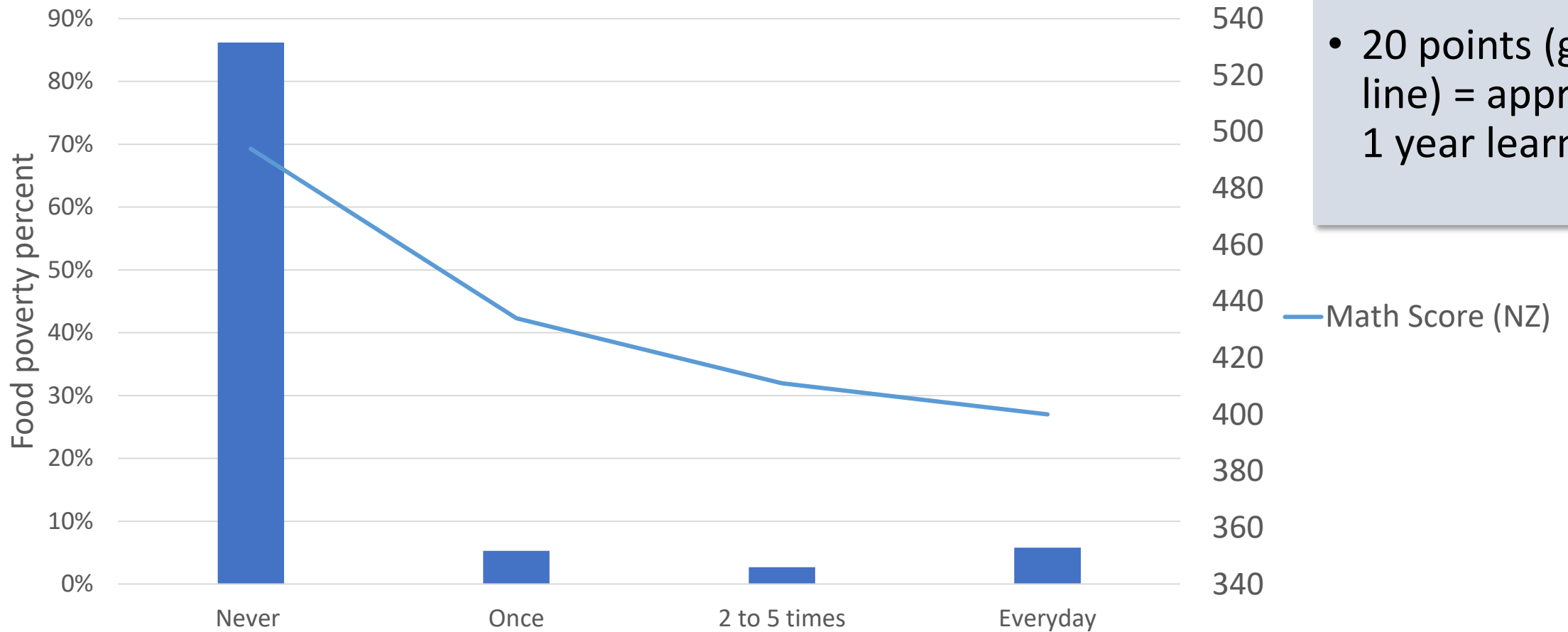
Number of times per week NZ students did not eat because there was not enough money to buy food



- 14.1% NZ students missing meals due to lack of \$
- OECD average 8.2%

Too hungry to learn?

Number of times per week NZ students did not eat because there was not enough money to buy food



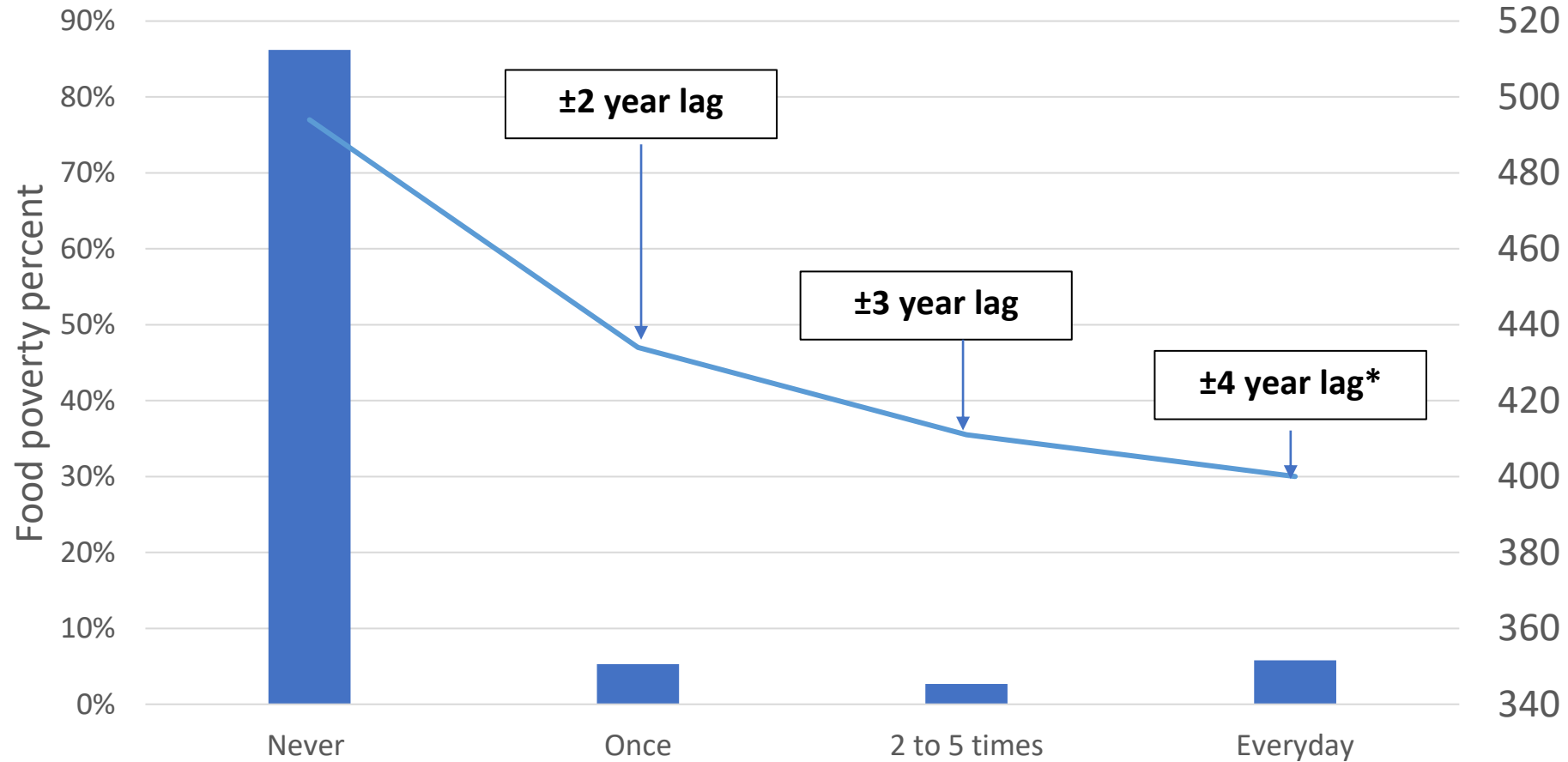
PISA scale

- Standardised
- 20 points (grid line) = approx. 1 year learning

— Math Score (NZ)

Too hungry to learn?

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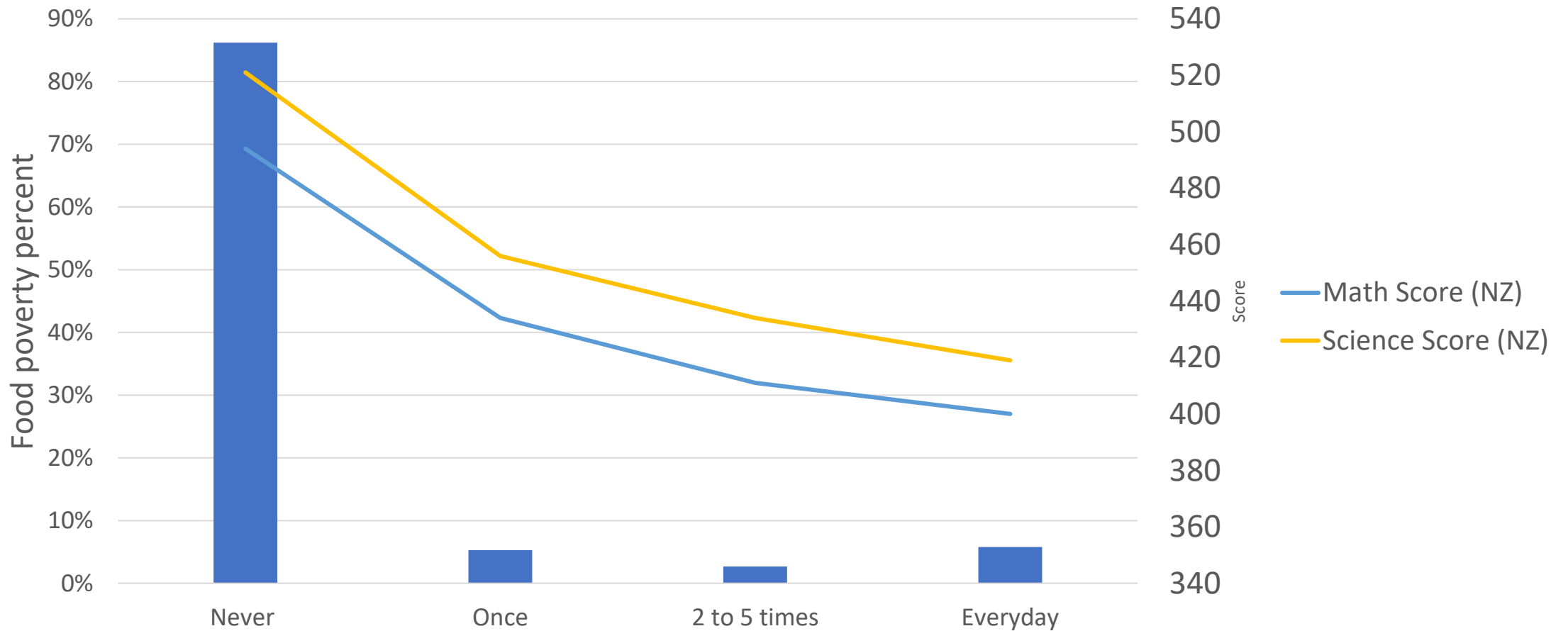
**after regression analysis*

— Math Score (NZ)

Students in NZ who **miss meals due to lack of money** are **2-4 years behind** in maths achievement, compared to their peers who never miss meals, even **after socioeconomic deprivation is taken into account.**

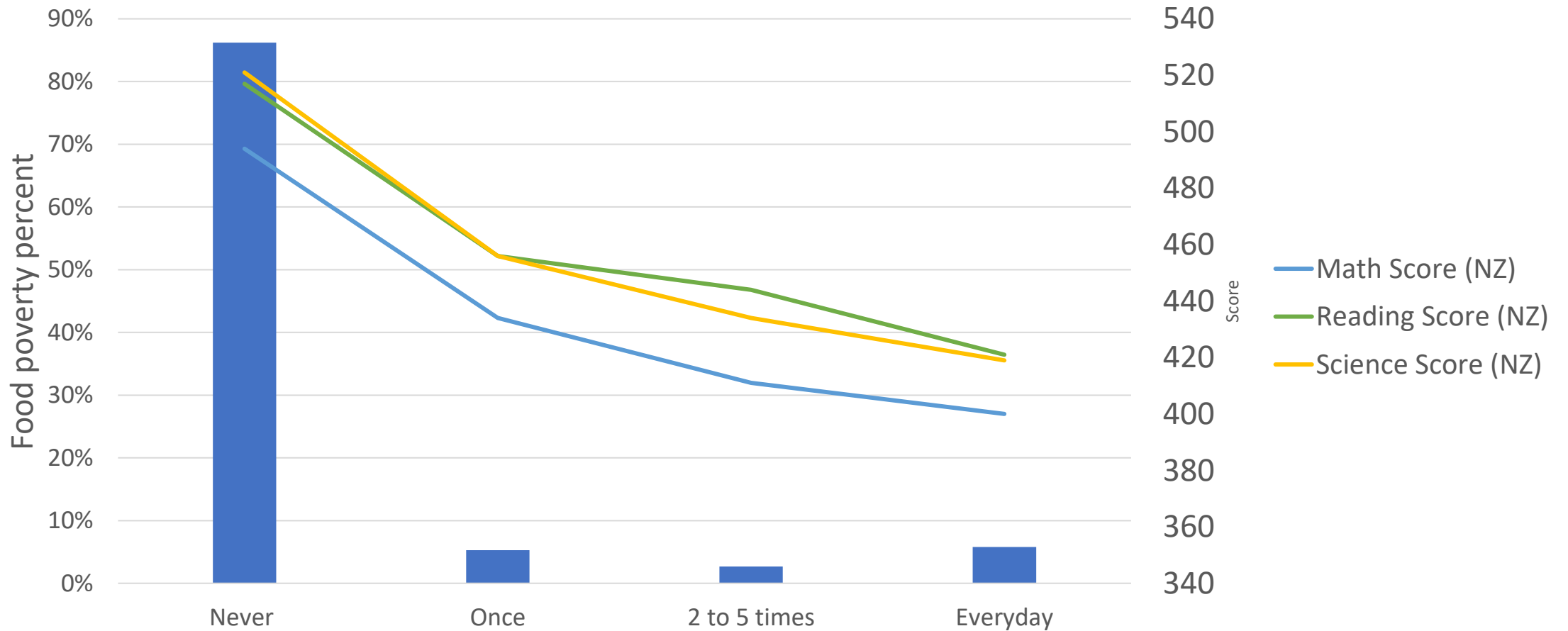
Too hungry to learn?

Number of times per week student did not eat because there was not enough money to buy food, over the last 30 days



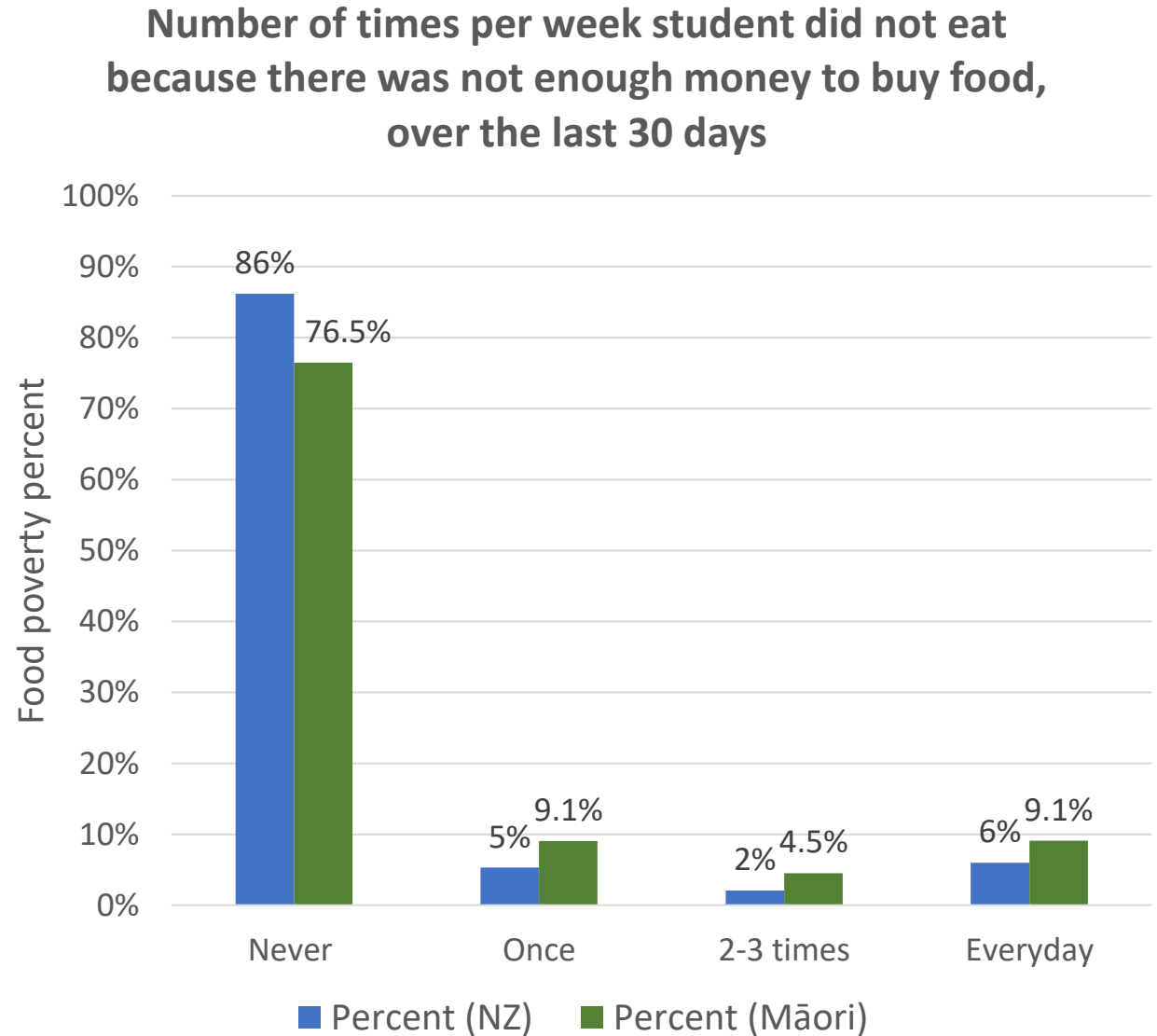
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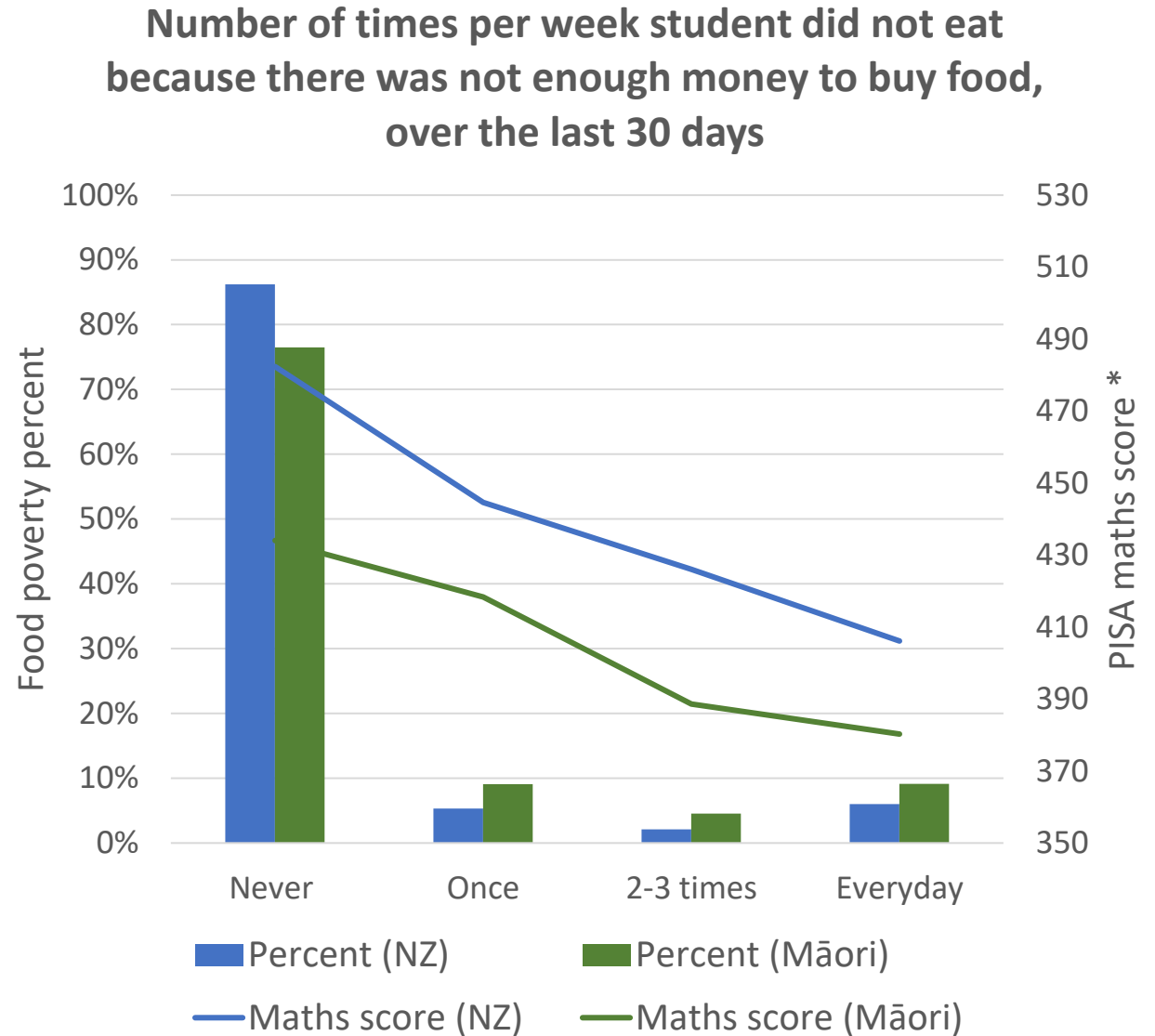
Ākonga Māori in PISA 2022

- 1 in 4 missing meals at least once a week
- 1 in 10 missing meals everyday due to lack of \$



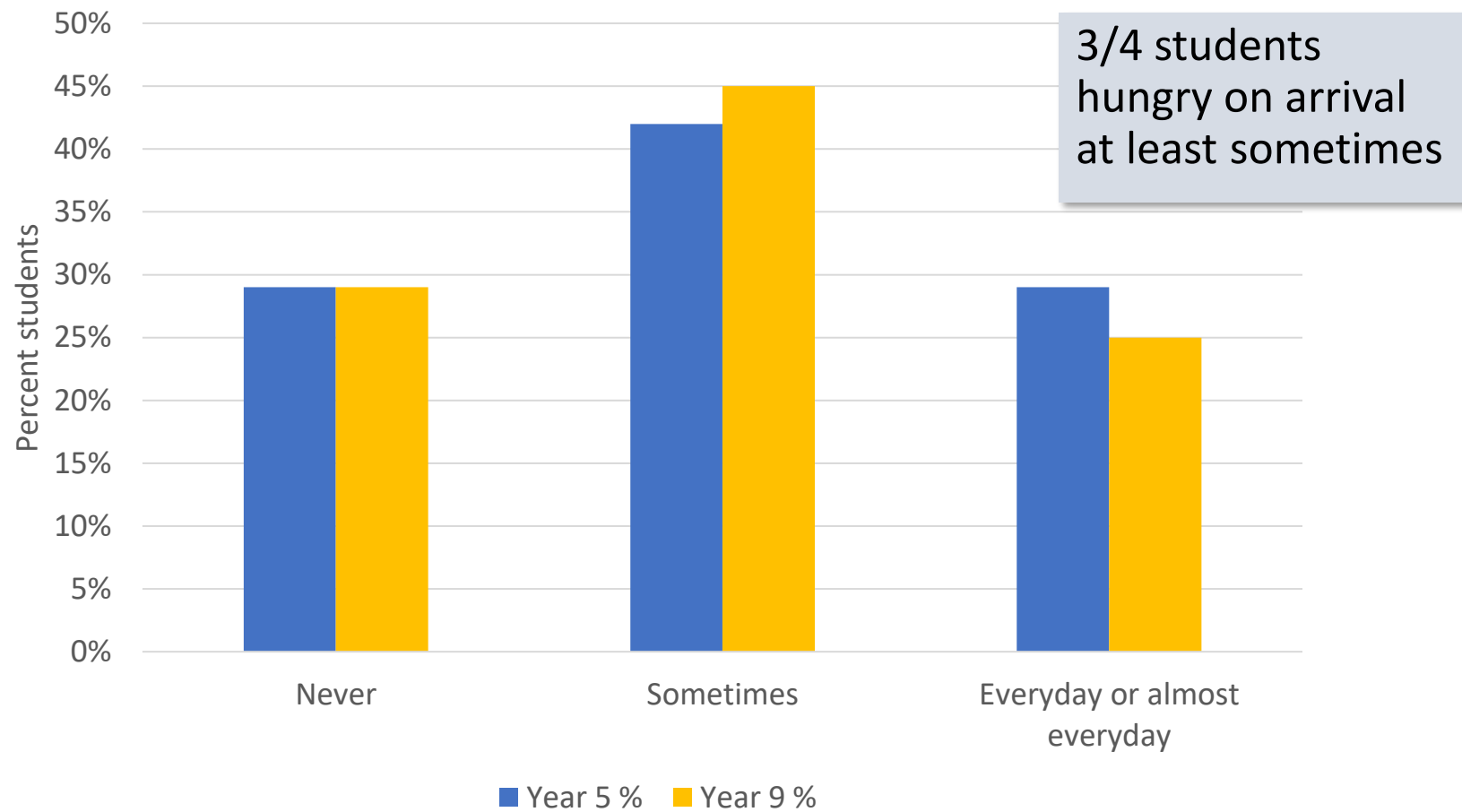
Ākongā Māori in PISA 2022

- Lower overall achievement (50 point difference on average)
- Lower achievement further reduced by high food poverty hunger (even after socioeconomic deprivation taken into account)



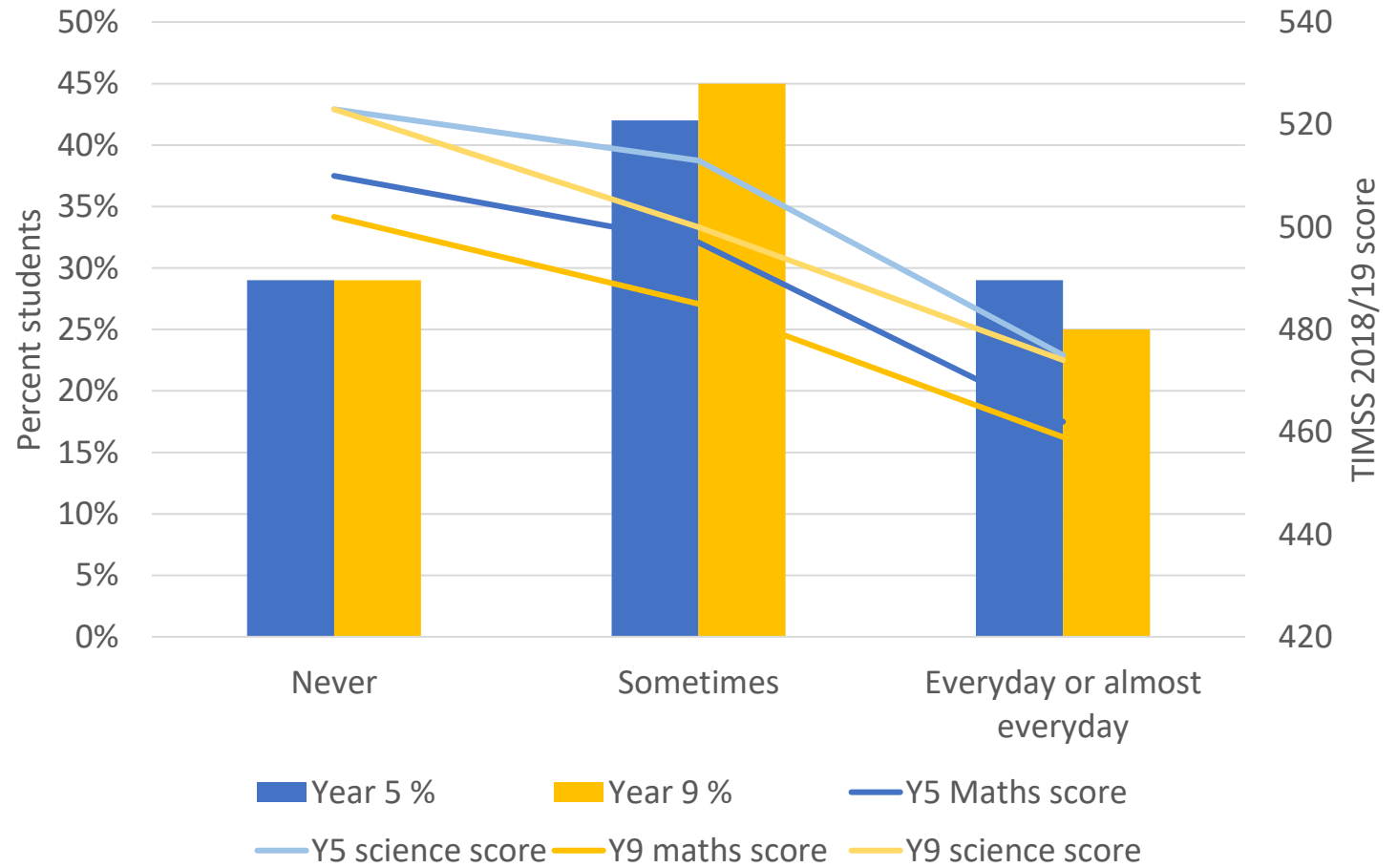
Trends in
International
Maths &
Science
(TIMSS
2018/19)

NZ students feeling hungry on arrival at school

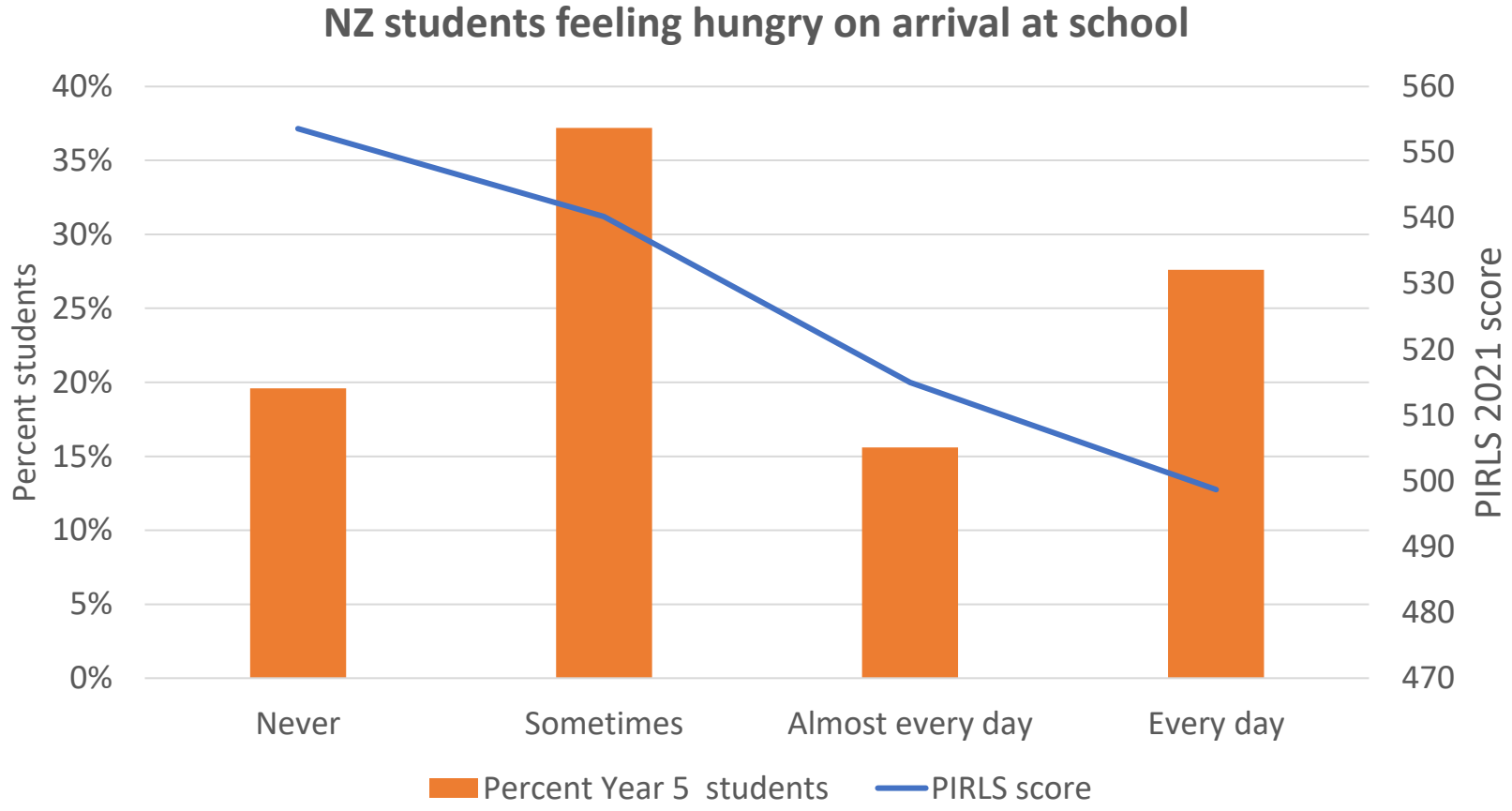


Trends in International Maths & Science (TIMSS 2018/19)

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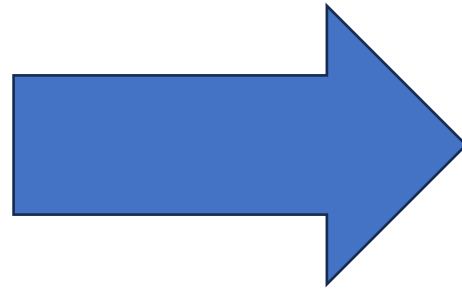


Progress in Reading Literacy (PIRLS 2021)



Summary - Impact of hunger on learning

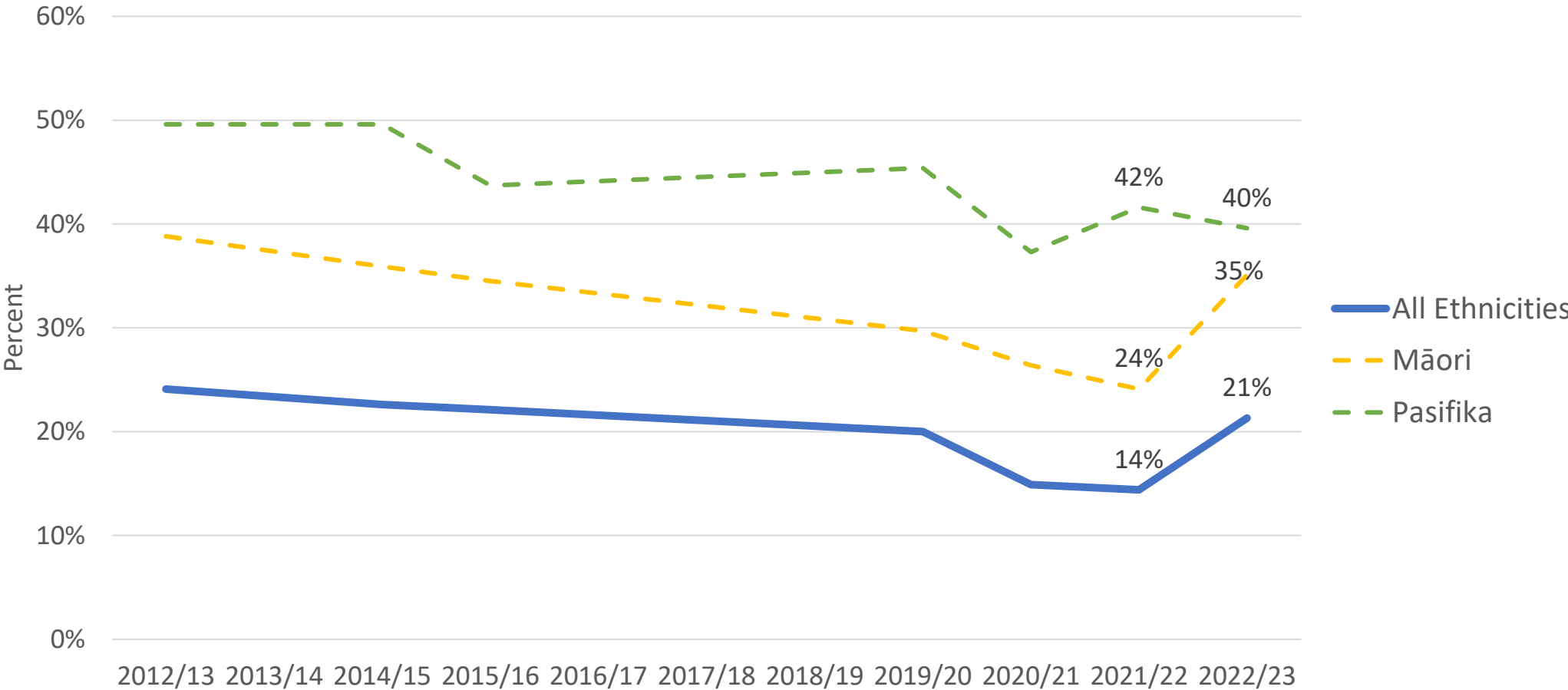
- Same pattern across 3 large-scale international assessments
- Two age groups
- Two food poverty measures
- Three subject areas



- Achievement drops off steeply due to hunger
- Even for students with intermittent food insecurity
- Even after socioeconomic deprivation taken into account

Largest increase in food insecurity in a decade

Percent of children (0-14yrs) living in household that ran out of food 'sometimes' or 'often' in the last year (NZ Health Survey).



Conclusions

Hunger is a significant barrier to learning

Food insecurity rising across the globe

NZ - largest increase in food insecurity in 2022/23 (NZ Health Survey); high rates compared to OECD

Ka Ora, Ka Ako removes barrier to learning

Ngā mihi

Nourishing Hawke's Bay:
He wairua tō te kai team

A Better Start National
Science Challenge

Analysts from Educational
Measurement and
Assessment team,
Ministry of Education