

An entertaining approach

Analysing the effectiveness of the Cha-Ching financial education curriculum developed around high-energy music videos

With thanks to Prudence Foundation and Junior Achievement Asia Pacific

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Background

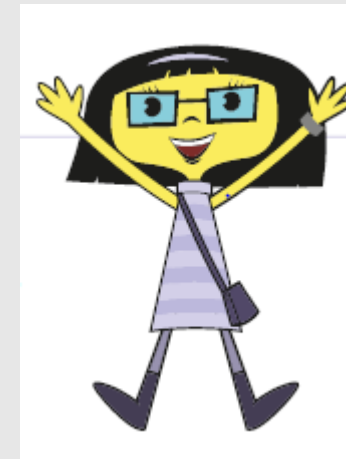
- What is Cha-Ching
- The review process

Analysis and results

- The data
- Results from teacher data
- Results from student data

Concluding observations

CONTENT OF MY PRESENTATION

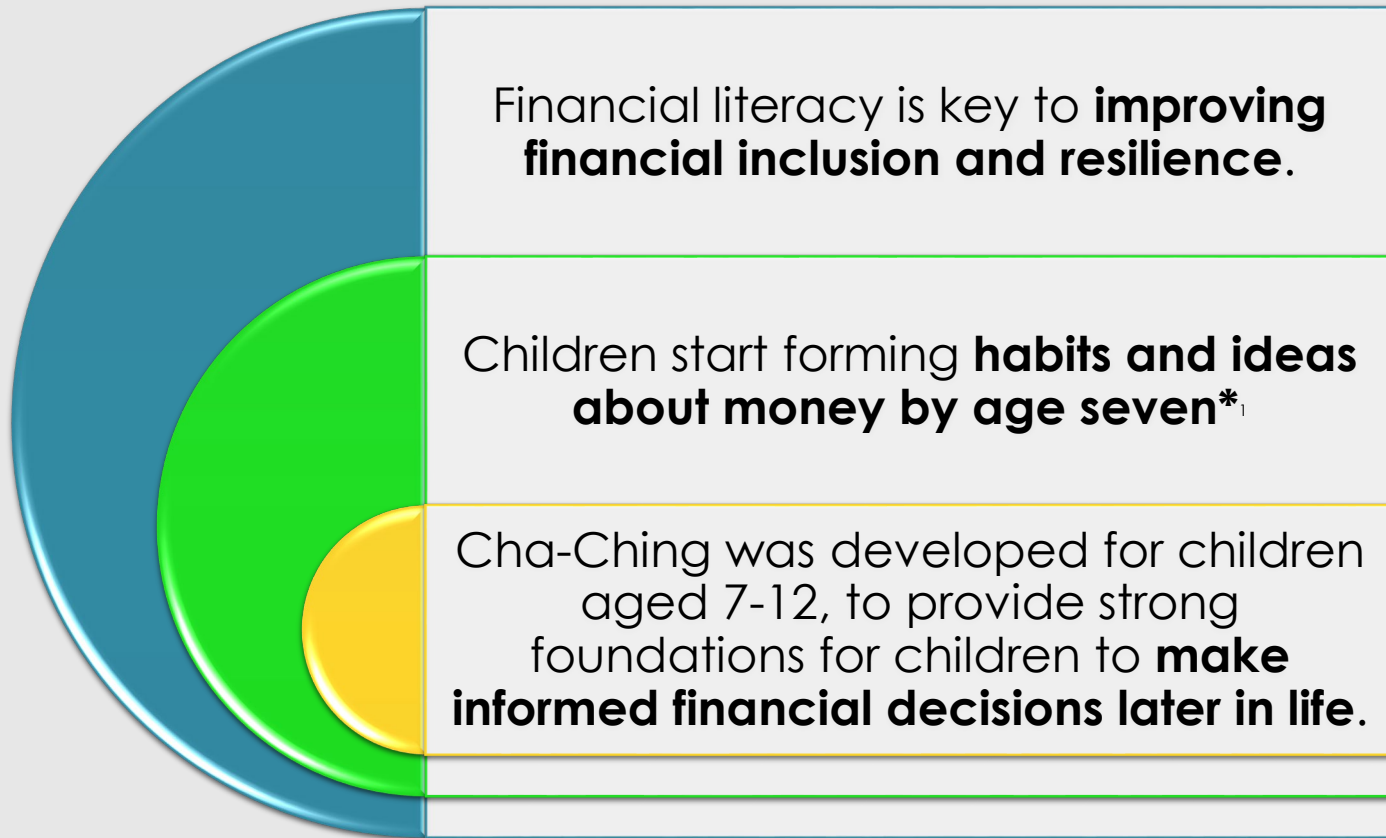


Countries covered: Indonesia, Malaysia, Philippines, Thailand and Viet Nam

BACKGROUND



A SPOTLIGHT ON CHA-CHING



Cha-Ching is **Prudence Foundation's** flagship financial education programme for children. It has been running for 10 years.

Prudence Foundation is the community investment arm of Prudential plc in Asia and Africa. Their mission is to make communities safer, more secure and resilient by addressing key issues in education, health and safety.

**Dr. David Whitebread and Dr. Sue Bingham, "Habit Formation and Learning in Young Children" (University of Cambridge, May, 2013)*



CHA-CHING IS A CURRICULUM AND MORE

18 educational cartoons

- Broadcast to **35 million** households every day across Asia.
- Developed in partnership with Cartoon Network and educational psychologist Dr Alice Wilder.

School curriculum

- Developed in partnership with Junior Achievement Asia Pacific. Teacher-led model, with over 15,000 teachers trained and over **800,000 students** taught in school since 2016.

Additional parent resources

- Home learning and an upcoming online educational game.



For more information please visit:
www.prudencefoundation.com
www.cha-ching.com

Cha-Ching Curriculum™

THE CHA-CHING VIDEO DESIGN

Each of the videos has a standalone story in a set format: introduction, action, conclusion

- Stories about decision-making and strategies to achieve positive financial outcomes
- Some predictability makes it possible for students to foresee the positive outcomes

Music, catchy lyrics and repeated chorus lines help the students to stay engaged and remember the key messages

The characters illustrate that everyone can learn new skills or adapt their behaviours

- In some videos the band members make mistakes and then learn ways to do things better
- Other times they are guided by their friends to make wise choices from the beginning

THE CHA-CHING CURRICULUM DESIGN

Designed primarily for teachers of students aged 7-12, and aims to **engage** students; **improve** knowledge; and **increase** awareness

Teachers receive training on how to use the curriculum (typically over 2 days), and an accreditation process has been developed

Materials include:

- Lesson plans based on 6 videos (+backup comics)
- Activity cards and practical items for class use
- Student booklets; Take-home activities; Pre and Post tests for students

Lessons follow a consistent approach:

- Introduction
- Watch/read the story (video/comic) and participate in a class discussion
- Group activities
- Summary of key lessons learned and introduction to home-based activity



EARN

Receive income for work or services



SAVE

Keep money now for later use so as to realize short-term goals (e.g. buy a candy) or long term goals (e.g. go to university)



SPEND

The use of money to buy things or services



DONATE

Give time, items and/or money away freely in order to help others

THE CURRICULUM
IS DESIGNED
AROUND 4
CONCEPTS

These are the definitions
used in the current
materials

THE REVIEW PROCESS



The review was designed to look at current practices and make recommendations for the future. It focused on 4 aspects:



THE
DOCUMENTATION:
MATERIALS, LESSON
PLANS AND VIDEOS



THE **TOPICS**
COVERED
(CURRICULUM
CONTENT)



TEACHER **TRAINING**
AND
ACCREDITATION



QUANTITATIVE
ANALYSIS OF
STUDENT OUTCOMES
AND **IMPACT**

A range of approaches were taken to see the programme from all angles



Review of classroom materials and the literature



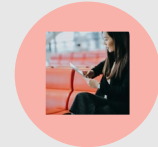
Discussion with implementing partners and detailed read of annual reports



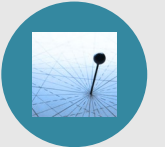
Emersion in the stories, videos and transcripts



Preparation and analysis of matched student records, teacher data, including verbatim comments



EMERSION



CONTENT ANALYSIS



DATA ANALYSIS

ANALYSIS AND RESULTS

With the introduction of curriculum Cha-Ching, students know how difficult it is to get money.



It helps children develop their skills and helps them understand how to save, earn, spend and donate.

STUDENT DATA



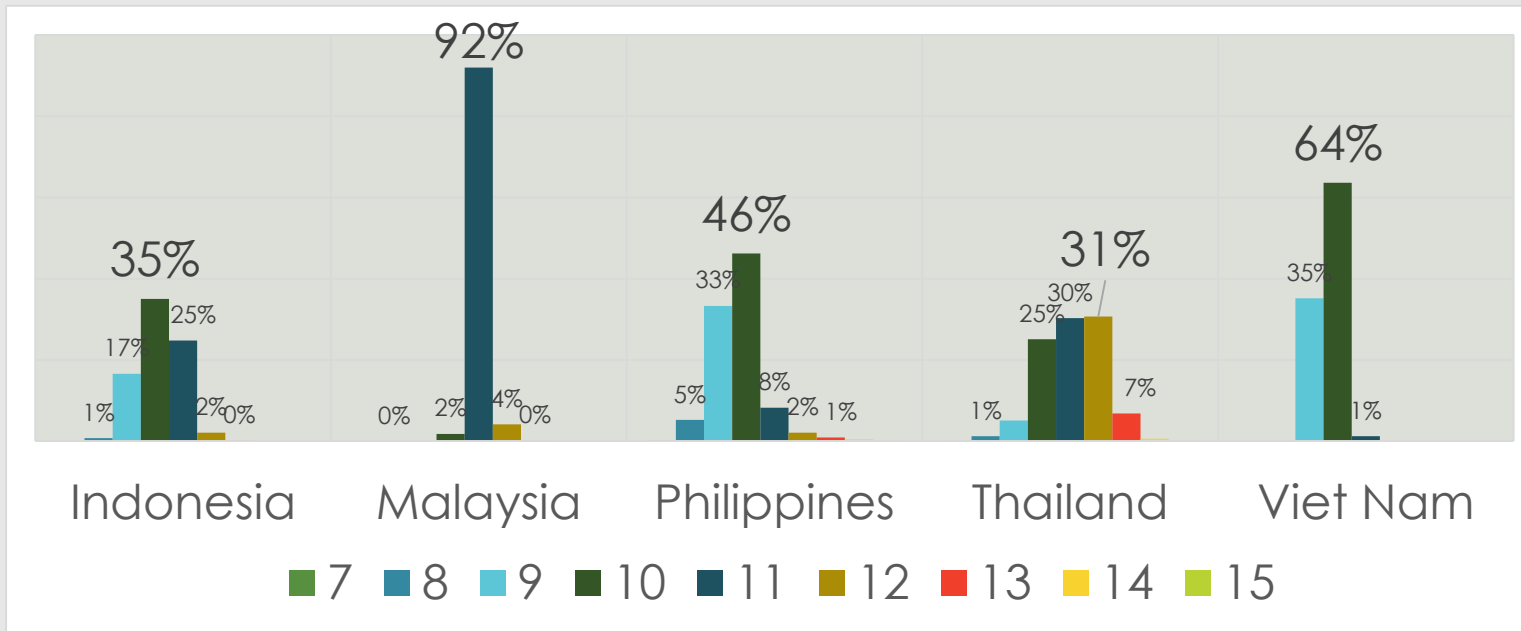
NUMBER OF STUDENTS IN DATASET

Data for each student includes date of birth, gender, school and school year, matched pre- and post-test scores, general feedback

	2017	2018	2019	2020	Total
Indonesia		53976	6006	12094	72,076
Malaysia	12967	17420	6535	6303	43,225
Philippines	15002	36043	6000	5856	62,901
Thailand			11894	9783	21,677
Viet Nam			6299	7336	13,635
Total	27,969	109,457	38,753	43,392	213,514

Notes: Relatively few missing data points once data were cleaned. Smaller samples reflect changed data entry approach, not necessarily fewer participants. Data from Thailand reflects two waves of implementation started in 2019. The data have been split to reflect final implementation dates, so wave 1 is 2019 and wave 2 is 2020. However, the materials used were all for 2019.

STUDENTS' AGES AND GRADES



Indonesia: Age 9-12
94% in grade 3

Malaysia: Age 10-12
96% in grade 5

Philippines: Age 8-13
98% grade 4

Thailand: Age 8-13
83% grade 4

Viet Nam: Age 9-11
100% grade 4



ANALYSES UNDERTAKEN ON STUDENT DATA

% of students giving correct responses before and after participating in each country (pre and post test)

Differences by key characteristics

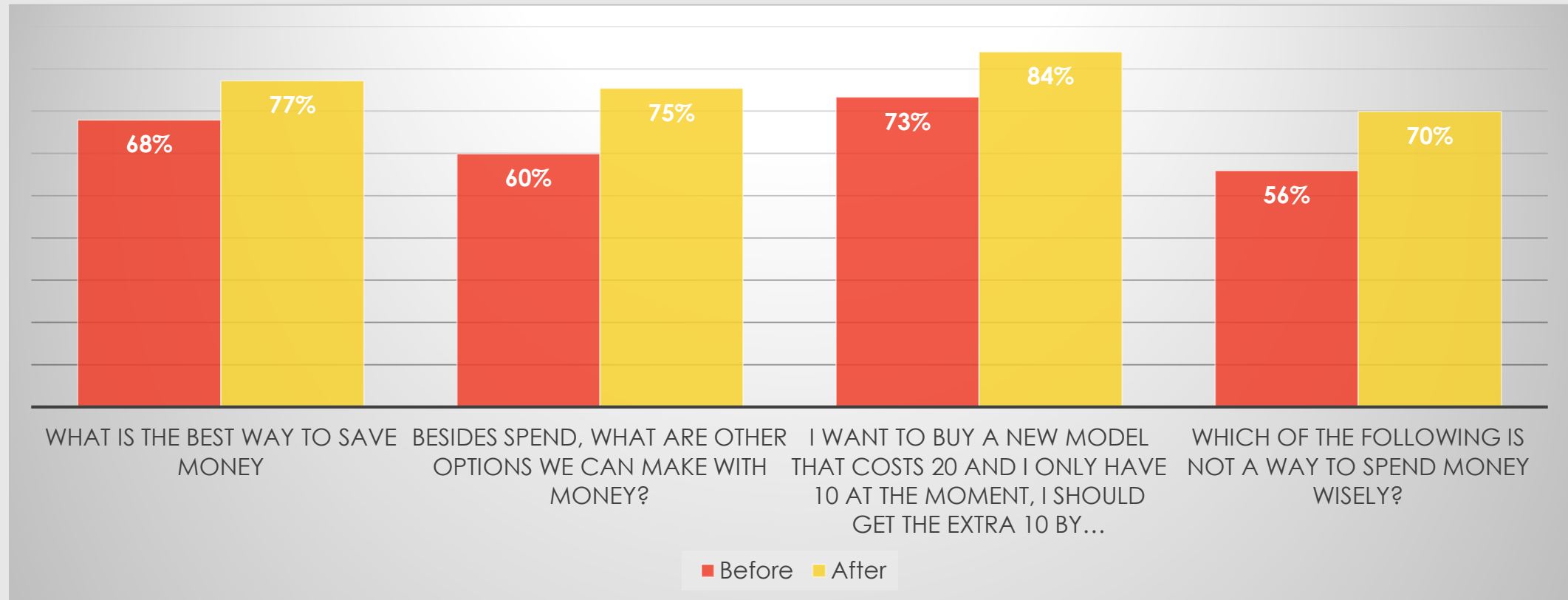
Composite measures of knowledge, behaviour and attitudes, combining responses to relevant questions asked across countries and years

Regression analysis of post-test scores(controlling for pre-test score)

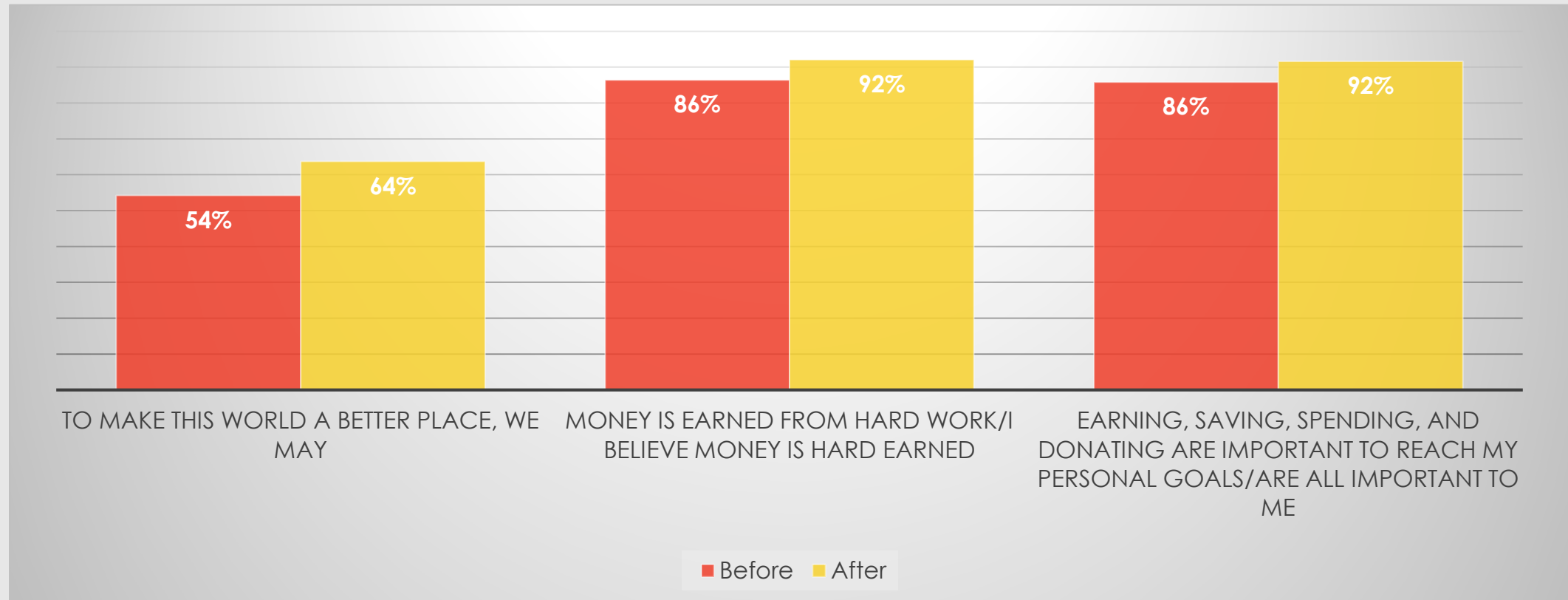
Creation of a pseudo control group, modelling outcomes for students in the absence of participating

Calculation of effect sizes

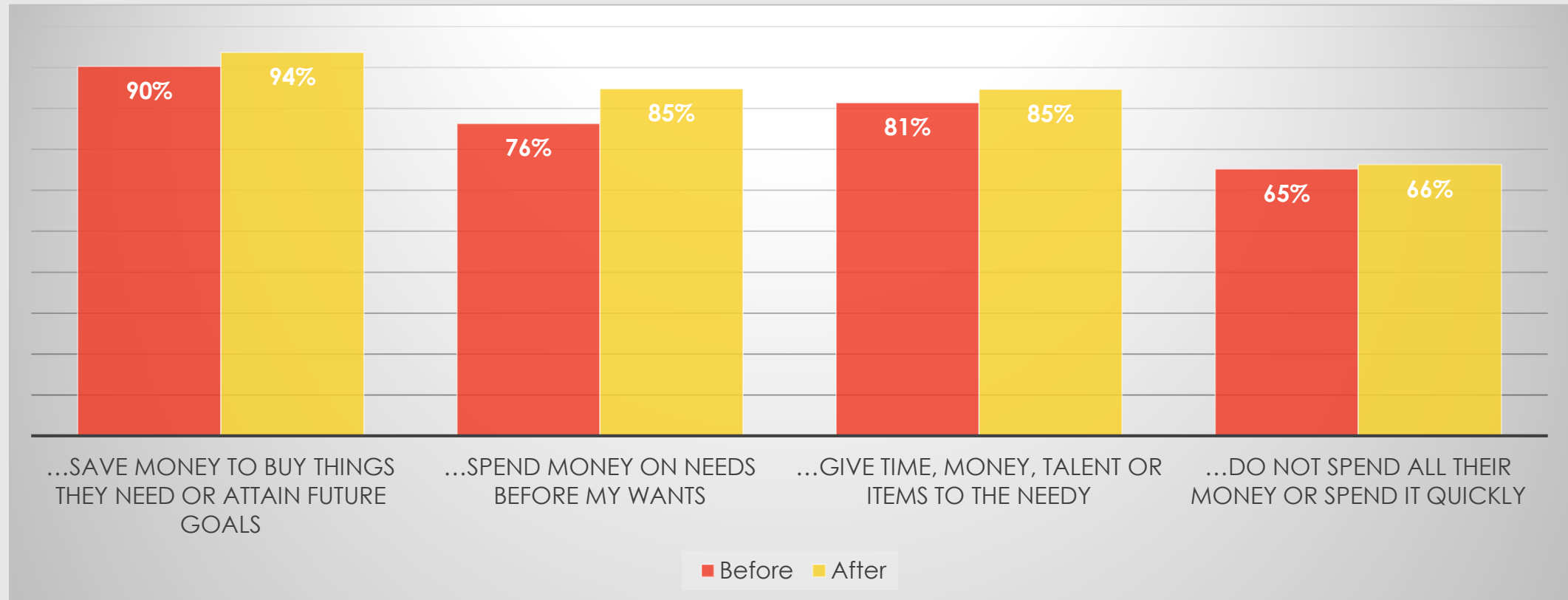
KNOWLEDGE



ATTITUDES



BEHAVIOURS



SELF-REPORTED BEHAVIOUR CHANGE

- Students were asked if they had made certain behaviour changes after participating in Cha- Ching
- There was very little difference in the % reporting such change by gender, but large differences across countries.
- Students in Indonesia and Philippines, Thailand and Viet Nam were typically more likely to say they had changed.

Range: students became careful about spending:

- 32% (girls and boys) in Indonesia
- 74% (girls) 72% (boys) in Viet Nam

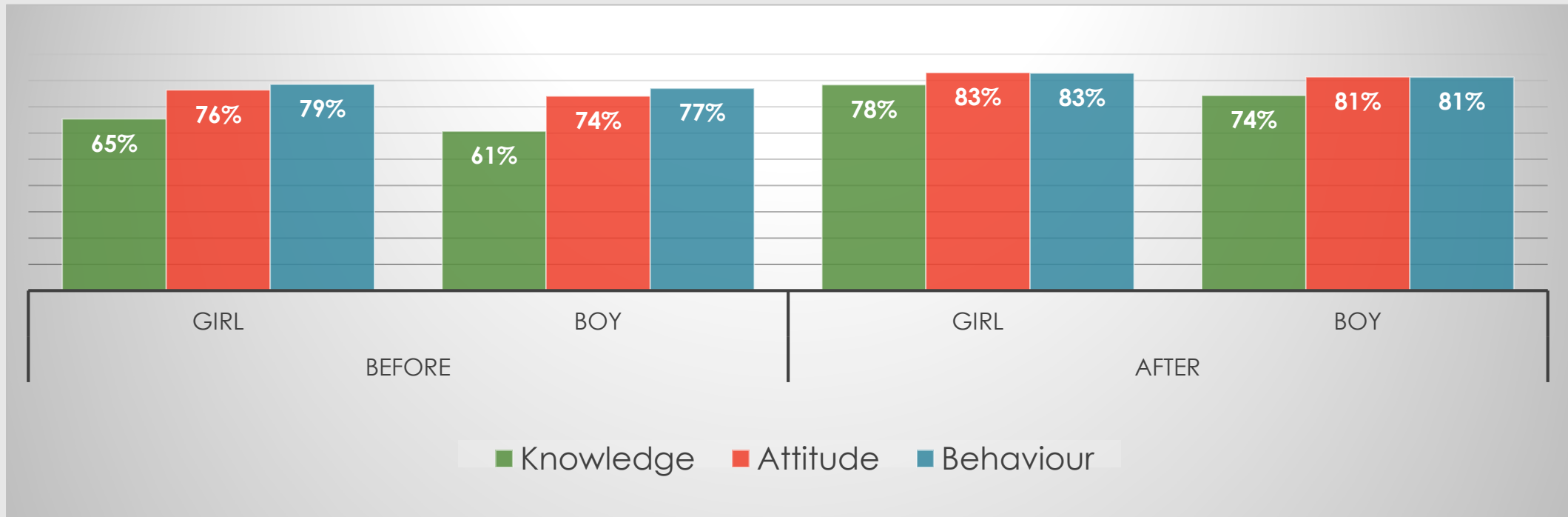
Range: students looked for ways to earn

- 32% (girls) 31% (boys) in Malaysia:
- 71% (girls and boys) in Viet Nam

Range: students saving more money

- 30% (girls and boys) in Indonesia
- 72% (boys) 71% (girls) in Philippines

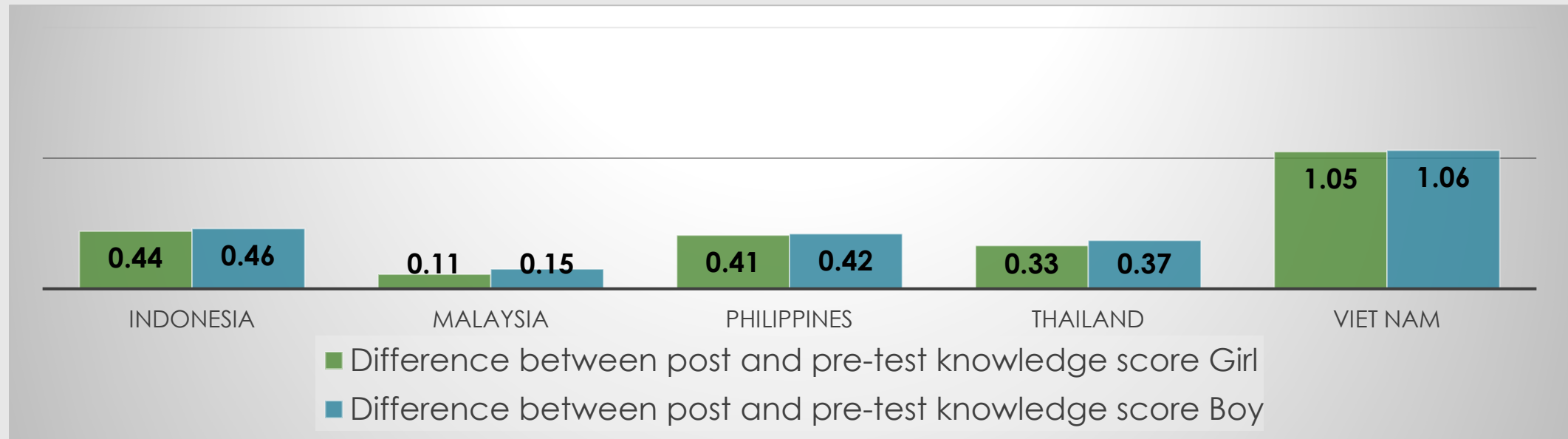
KNOWLEDGE, ATTITUDE AND BEHAVIOUR SCORES BY GENDER



Scores are simple count of correct/positive responses to three knowledge, 3 attitude, and 4 behaviour questions, represented as a score out of 100

Diff. in knowledge scores by gender stat sig in MLY and THY, no sig diff attitudes; behaviour sig dif in IDN and MLY

PRE & POST SCORE DIFFERENCE BY GENDER AND COUNTRY (out of 3)



Scores are simple count of correct/positive responses to three knowledge questions.

Diff. in knowledge scores by gender stat sig in MLY and THY. Note that there was a sig dif in IDN, MLY, PHP and THY in the pre-test, showing that the gap was reduced.

SOME CURRICULUM-RELATED RESULTS

Earn:

- One attitudinal question asks students how much they agree that money is earned from hard work. Overall, there was an increase in students agreeing with this statement after participating in Cha-Ching, but there was a decrease in Indonesia

Save and Spend:

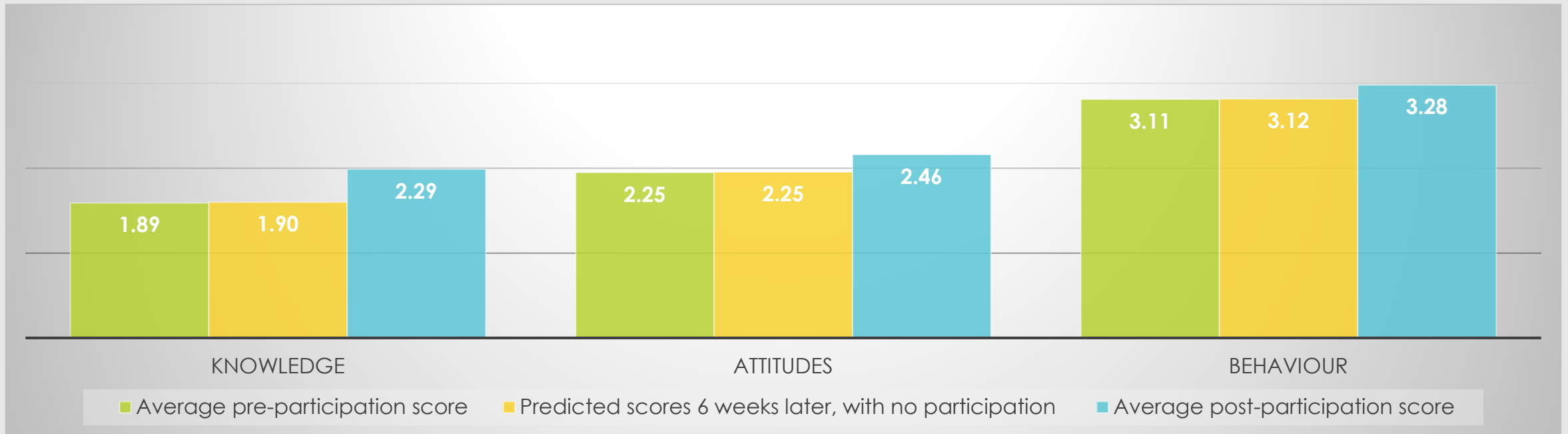
- The vast majority of students in Malaysia could answer questions on spending and saving before participating in Cha-Ching

Donate:

- There was a larger increase in understanding of this concept in 2020 – possibly because of wider awareness due to COVID-19?

ANALYSIS WITH A PSEUDO-CONTROL

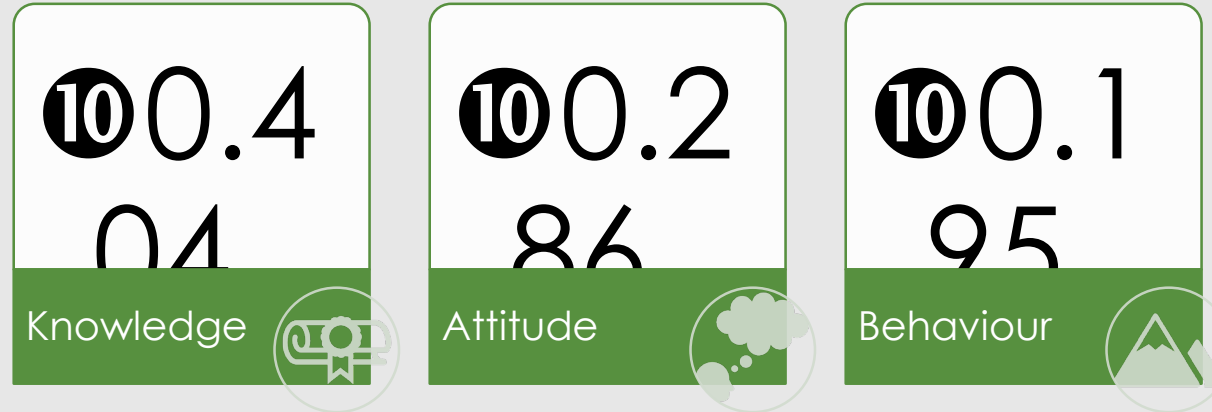
Average scores before and after participating in Cha-Ching, and predicted scores for the same students at the end of the curriculum period, if they had not participated.



The predicted scores are based on unweighted regressions controlling for age in months, gender and country. Age in months is significant and positive in all regressions.

EFFECT SIZES

Effect sizes compare favourably with the recent paper from Kaiser and Menkhoff (2020) Financial education in schools: A meta-analysis of experimental studies: report that: **We find that effect sizes on financial knowledge are significantly larger in developed economies (0.39 SD) relative to developing economies (0.14 SD).**



An effect size of 0.5 is equivalent to a one grade leap at GCSE (UK grades)
[John Hattie's 'Effect Sizes' | LOOK OUT FOR LEARNING \(wordpress.com\)](https://www.wordpress.com/look-out-for-learning)

INSIGHTS FROM REGRESSIONS

Knowledge

Post-test knowledge scores increased most in recent years; more for girls than boys; and more for older students than younger ones

Attitudes

Post-test attitude scores increased most in recent years; more for girls than boys; and more for younger students than older ones

Behaviour

Post-test behaviour scores increased less in recent years; increased more for girls than boys. Age was not significant

Adjusted R² Knowledge 0.13; attitude 0.09; behaviour 0.14. Sig results at 0.01. Controls included pre-test scores on knowledge, attitudes and behaviours.

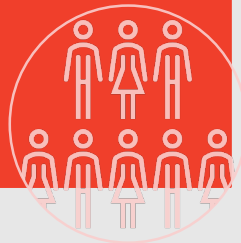
TEACHERS AND SCHOOLS



INSIGHTS FROM THE TEACHER SURVEYS

- Data includes age, gender, ratio of trained teachers to students, delivery method (team teaching, weekly sessions etc) and a survey on various aspects of the curriculum and the teaching experience

Detailed dataset



- Younger teachers, and those who taught in teams were most likely to want to teach the course again.
- No sig diff by number of kids taught, individual or combined sessions, or teacher gender

Enthusiasm
associated with
age of teacher



- No more than 4% of teachers felt the materials were inappropriate for their students. Those who did were in countries delivering Cha-Ching to younger students.

Material
appropriate for
most students



Analysis of individual records from 3,420 teachers: Indonesia (1,636), Malaysia (626) Philippines (800), Thailand (195) and Viet Nam (163) participating in 2019-20. Findings in 2nd box from a logistic regression.

Students achieve more in the post-test **knowledge** score when they are in a school with a higher average age, more boys and higher average pre-test knowledge scores. Average pre-test behaviour scores are also significant, but attitudes are not.

Students also achieve more on their post-test **attitude** score in schools with more participating students. Average age is not significant. More boys is positively associated with outcomes, as are average pre-test attitudes and behaviors.

Student post-test **behaviour** scores are higher amongst those in schools with more participating students, older students, more boys and higher average pre-test behaviour scores.

Controlling for total number of participating students, their average age and the standard deviation of their age, the gender balance, and average pre-test knowledge, attitude and behaviour scores; plus student level data.

INSIGHTS FROM INCORPORATING SCHOOL-LEVEL INFORMATION

The characteristics of the school are associated with student outcomes.

These results suggest that students have higher post-test scores when they are being taught among more boys.

There is a general advantage for students to be in schools with more participants.

CONCLUDING OBSERVATIONS



KEY INSIGHTS

This comprehensive approach to incorporating financial literacy into schools, using a combination of entertainment and pedagogy is effective

6 lessons covering 4 topics is sufficient to improve knowledge and have some impact on attitudes and behaviour

The approach works across countries, and for both boys and girls

GENERAL OBSERVATIONS

This programme has gone far beyond most in terms of data collection

The outcomes for participating students are positive, and the materials cover topics widely considered to be relevant

The importance of effective partnerships should not be overlooked – Prudence Foundation's achievements are due to their own foresight, but also come from developing stakeholder relationships with Ministries of Education, Junior Achievement, academics etc.



THANK YOU

QUESTIONS ARE WELCOME

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