



2021 Cha-Ching Curriculum Review: Full Report

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This report was written by Dr Adele Atkinson, a senior independent consultant specialising in the preparation of high-quality research and policy guidance around financial literacy, financial inclusion and financial resilience.

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Executive Summary

Prudential, through its charitable arm, Prudence Foundation, has developed various financial education tools aimed at entertaining and informing children and youth. These are built around 18 high energy cartoon music videos lasting around 3 minutes each.

Building on the success of this approach, in 2016, Prudence Foundation partnered with JA Asia Pacific to develop a financial education package for schools. The resulting 'Cha-Ching curriculum' offers teachers structured lesson plans built around 6 of the cartoon music videos and a '360 degrees' support package. The support package provides teachers and students with access to additional online materials via websites, video streaming, and social media. The curriculum materials also include take-home activities, games and comics to engage students and their parents and family members. The curriculum draws on good practices and international guidance, including the G20/OECD Core Competencies on Financial Literacy for Youth. It is developed around four fundamental money decisions: **EARN, SAVE, SPEND, DONATE.**

Cha-Ching follows good practices in terms of evaluation. It was designed with monitoring and evaluation in place and uses a consistent method across countries and schools to ensure comparability. As a result, Prudence Foundation now holds usable matched data from 213,514 students, providing an unparalleled opportunity to explore student learning. This dataset is further enriched with feedback from teachers and information about the participating schools.

This report provides an external perspective to review the Cha-Ching curriculum. It considers the extent to which the Cha-Ching curriculum covers key aspects of financial literacy and reports in-depth analysis of the evaluation data to see whether participating students have improved their financial knowledge, attitudes and behaviour.

The review confirms that the curriculum is largely aligned with other good practice programmes aimed at similar age groups. The topics covered aim to ensure that students have the opportunity to think about common decisions and choices such as finding ways to earn money, putting money aside for the future, spending on needs or wants, and offering support to those in need.

Teacher training ensures that the curriculum is taught by teachers who understand the topics and the recommended approach and are motivated to improve their students' financial literacy. The findings are impressive. Students who participate in Cha-Ching achieve higher scores on knowledge, attitude, and behaviour at the end of the 6 lessons than they did at the beginning. Comparisons with other research suggest that the impact on financial knowledge is higher than what is typical for developed economies. The impact on attitudes and behaviour is also positive. Tests to make sure that the improvements are not simply a result of the students maturing indicate that students achieved more than could be predicted based on ageing alone.

This review suggests some modifications to make sure that Cha-Ching continues to be relevant across countries in the rapidly changing financial landscape, including an increased focus on a) numeracy, b) taking care of personal possessions and c) digitalisation. In addition, it offers ideas for updating the teacher materials, implementing the lessons, and collecting the evaluation data.

Introduction

Prudential, through its charitable arm, Prudence Foundation, has developed various financial education tools aimed at entertaining and informing children and youth. These are built around 18 high energy cartoon music videos lasting around 3 minutes each.¹

Building on the success of this approach, in 2016, Prudence Foundation partnered with JA Asia Pacific to develop a financial education package for schools. The resulting 'Cha-Ching Curriculum' offers teachers structured lesson plans built around 6 of the cartoon music videos and a '360 degrees' support package. The support package provides teachers and students with access to additional online materials via websites, video streaming, social media and mobile applications. The curriculum materials also include take-home activities, games and comics to engage students and their parents and family members.

The curriculum draws on good practices and international guidance, including the G20/OECD Core Competencies on Financial Literacy for Youth. It is developed around four fundamental money decisions:

EARN, SAVE, SPEND, DONATE

The curriculum and a video overview are available online Cha-Ching Financial Literacy for Kids | Master List (www.cha-ching.com); Cha-Ching Financial Literacy for Kids | Teacher (www.cha-ching.com). These show the breadth of resources available to teachers and the coverage of the curriculum.



¹ Cha-Ching: Financial Literacy for Children | Prudence Foundation – Prudential plc (prudentialplc.com)

Cha-Ching has considerable reach. Approximately 870,000 students have been taught the Cha-Ching curriculum in schools, and several million have seen episodes of the televised cartoon series.²

Data has been collected on the progress of students using the Cha-Ching Curriculum in schools across five countries in Asia (Indonesia, Malaysia, the Philippines, Thailand, and Vietnam). The data includes information about the students, teachers, and schools. Short student tests were implemented at the beginning and end of the curriculum period (described in this report as pre-test and post-test for brevity) to monitor improvements in knowledge, attitude and behaviour. This makes it possible to review the Cha-Ching curriculum, measuring outcomes and potential (short-term) impact and suggesting any fine-tuning that may be beneficial moving forward.



² The episodes air on Cartoon Network channels across multiple countries including Hong Kong, Indonesia, Taiwan, Malaysia, the Philippines, Singapore, Thailand and Vietnam, reaching 35 million households each day in 2021. Cha-Ching is also aired on Cambodia's free-to-air TV network CTN.

The five participating countries

The curriculum has been endorsed by the Ministries of Education of each participating country.

The countries are at different stages in terms of implementing financial literacy at a national level.

Indonesia has had a National Strategy on Financial Literacy since 2013.³ The most recent version is broad, covering topics such as Sharia financial literacy, financial inclusion, digital financial services and financial planning. School students are identified as a target group in the strategy.

Malaysia has had several strategies on financial education. Most recently it launched a five-year National Strategy for Financial Education in 2019. Strategic Priority 1 of this is to nurture financial resilience from childhood, with the intended outcome that 'young Malaysians understand and are able to apply basic financial knowledge, skills and values when making financial decisions.'

Philippines has a National Strategy for Financial Inclusion that incorporates financial education and consumer protection. The Department of Education has various financial literacy initiatives, including modules for primary students covering topics such as needs and wants, and more complete content incorporated in economics classes.⁴

Thailand has a Committee on Financial Education.⁵

Vietnam launched a National Financial Inclusion Strategy in 2020 which incorporates financial education across the whole population and businesses.⁶ This includes integrating financial literacy content into the National Curriculum.

³ 2019 Financial Education in APEC Economies [PDF] (oecd.org)

⁴ Financial Inclusion and Consumer Empowerment in Southeast Asia [PDF] (oecd.org)

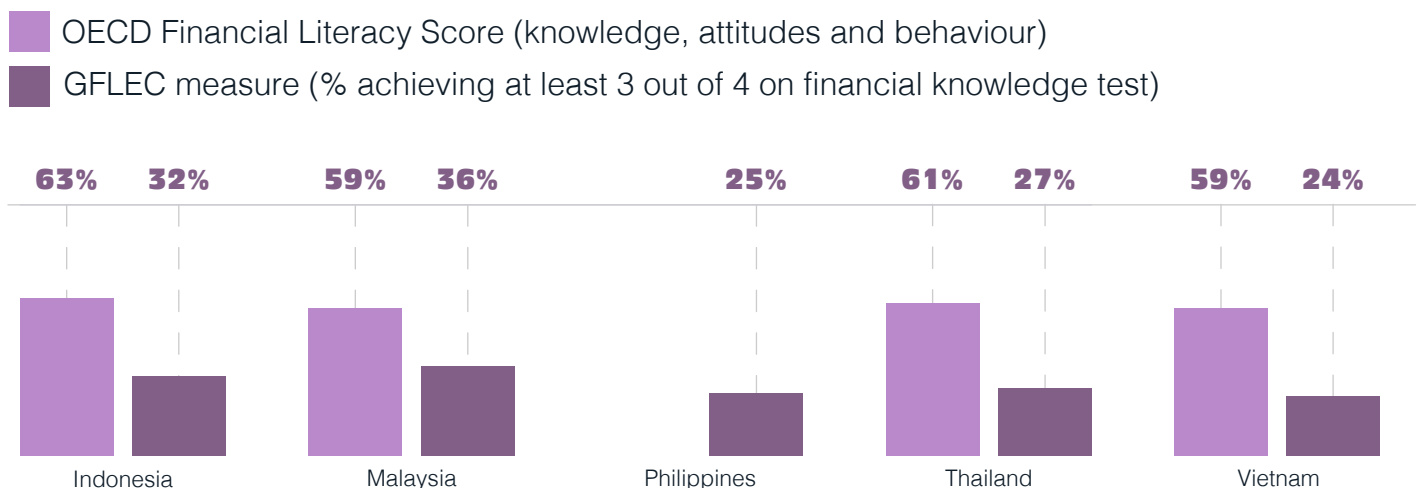
⁵ Financial Education Policies in Asia and the Pacific [PDF] (asiawomen.org.sg)

⁶ Financial Education, Financial Consumer Protection and Financial Inclusion Policies and Strategies in Cambodia, Laos, Myanmar & Vietnam 2021 [PDF] (oecd.org)

The five countries have slightly different levels of financial literacy among adults (Figure 1). Data is available from two sources, although it should be noted that it was not all collected at the same time. The first is a survey instrument developed by the OECD, whilst the second is an international study focused on financial knowledge, initiated by GFLEC. The OECD measure, which takes into account knowledge, behaviour and attitudes, indicates that adults in Indonesia have the highest overall level of financial literacy (although there is no data available for the Philippines), whilst the GFLEC data indicates that more adults are able to answer financial knowledge questions correctly in Malaysia than in the other participating countries.



Figure 1
Levels of financial literacy among adults in participating countries



Sources - OECD data (% relates to score out of 21; for example 63% is equivalent to a score of 13.23 out of 21):
 Indonesia: <https://www.oecd.org/financial/education/oecd-infe-2020-international-survey-of-adult-financial-literacy.pdf>
 Malaysia: [2019-financial-education-in-apec-economies.pdf](https://www.oecd.org/financial/education/2019-financial-education-in-apec-economies.pdf) (oecd.org)
 Thailand and Vietnam: [Financial-inclusion-and-consumer-empowerment-in-Southeast-Asia](https://www.oecd.org/financial/education/financial-inclusion-and-consumer-empowerment-in-southeast-asia.pdf) (oecd.org)
 No OECD data from the Philippines.
 GFLEC data: [3313-Finlit_Report_FINAL-5.11.16.pdf](https://www.gflec.org/3313-Finlit_Report_FINAL-5.11.16.pdf) (gflec.org)
 (% correctly answering three out of the four questions asked).

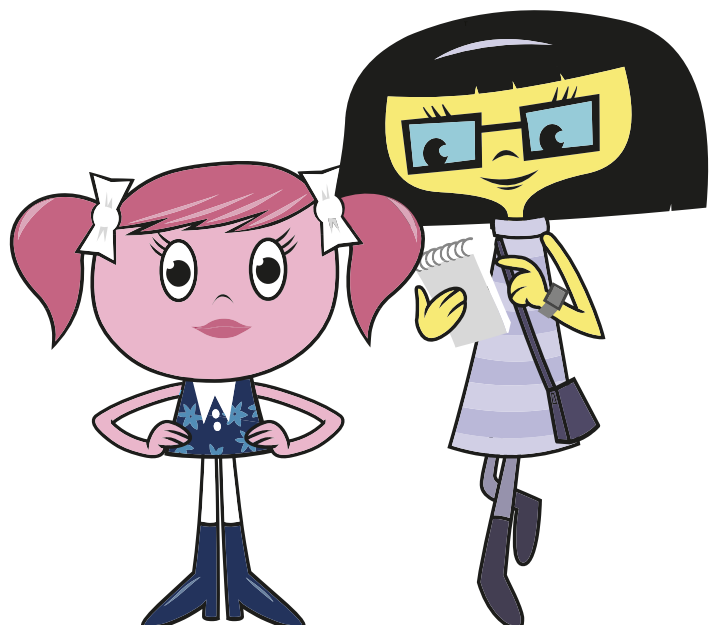
THIS REPORT

This report seeks to explore the extent to which the Cha-Ching Curriculum, teacher guidance and accreditation meet the financial literacy needs of today's students. The review offers an external perspective on the curriculum, and offers suggestions for future revisions and modifications. The final decision for any changes will remain with Prudence Foundation and their implementing partners.

Section 1 analyses the supporting materials and the preparation of teachers. The content of the curriculum is also assessed and compared with other curricula with similar target audiences.

Section 2 presents quantitative analysis of teacher and student data. Several graphs present student outcomes and more in-depth analysis is used to describe the possible impact of the Cha-Ching Curriculum.

The report also offers practical suggestions for the future of Cha-Ching in **Section 3** and draws conclusions in **Section 4**.



Section 1. The Cha-Ching curriculum and materials

What Is The Cha-Ching Curriculum

The Cha-Ching curriculum is a comprehensive package of lesson plans and supporting materials, designed to instil money-smart skills in children aged approximately 7-12. Designed by education experts, it uses an activity-based approach that appeals to students and teachers alike. It is age sensitive and supports different learning styles.

Teacher feedback

A curriculum to encourage children to save

“Children become passionate about saving” (IND)

“Through the Cha-Ching curriculum program students can understand the meaning of saving” (IND)

“This program should consider economic status of their recipients” (PHP)

Teaching effective money management

“It can educate pupils on how to manage their money wisely” (PHP)

“It helps children develop their skills and helps them understand how to save, earn, spend and donate” (PHP)

“Recommend friends and family because this program is very good at learning and understanding how to manage money well” (IND)

The stated goals of Cha-Ching curriculum are to:

Engage

- Provide engaging, academically enriching, and experiential learning sessions in economic education.

Improve Knowledge

- Help the students discover four choices in using money: Earn, Save, Spend and Donate.
- Discover the benefits of saving and means of saving.

Increase Awareness

- Enhance students' awareness of the cost of different items and the need to earn money to support one's daily expenses.
- Increase the students' understanding of the difference between needs and wants before one spends.
- Heighten students' awareness of how donation can make this world a better place and enhance their understanding of various kinds of donations.⁷

Reviewer observations

The curriculum incorporates elements of **economics** such as utility, scarcity and opportunity costs and aspects of **social studies** such as understanding how society functions and the role of charity in a child friendly way.

With a focus on **finance**, the topic allows teachers to cover basic **mathematics**, and the activities incorporate planning budgets and analysis of available options. The curriculum may also nudge teachers to think about their own financial situation.

The Cha-Ching curriculum is likely to appeal to subject teachers seeking new ways to help young people to learn about money matters.



⁷ Headings and groupings are reviewer's own interpretation

Each of the six lesson plans follows the same basic structure of Introduction; Video/Comic; Class discussion; Group activities; Summary of key take-aways. The overall programme is also designed with evaluation in mind; pre- and post-participation questionnaires to test students' knowledge, attitude and behaviour (described in the report as pre- and post-tests).

The lessons are based around short cartoon videos. Each storyline depicts a real-life scenario focusing on decision-making and strategies to achieve positive financial outcomes. Music and catchy lyrics are used to help the students to stay engaged and remember the key messages.

Teacher Feedback

"This program will encourage us as teachers, and pupils the important concept about money" (PHP)

"With the introduction of curriculum Cha-Ching programs, children know how difficult it is to get money, so children are eager to save so that what they want is achieved" (IND)

"Cha-Ching curriculum helps students to manage finances early by prioritizing needs rather than desires" (IND)



Introducing the characters

The Cha-Ching curriculum is brought to life through the stories of the 6 key characters. Each has a unique and complex personality. They all have a role in the Cha-Ching band, and they take it in turns to take centre stage within the storylines. Teachers are not specifically encouraged to discuss the characteristics of the band members in the teaching materials, although they are introduced in the first video, comic and student workbook, and on the website.



Justin

Fun-loving,
entrepreneurial,
energetic



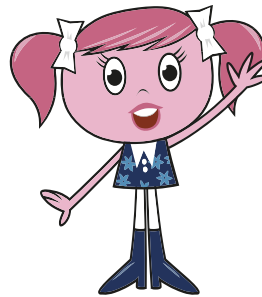
Zul

Sensible, determined,
knows he needs
to learn to save



Bobby

Gentle, tall,
not street-smart,
lacks self-control,
not good with money



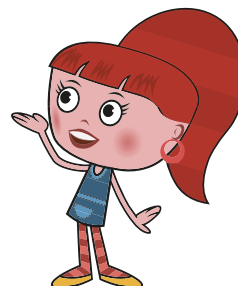
Charity

Sharing, sweet,
loving, looks for
ways to help out



Prudence

Wise, has a
savings habit



Pepper

Careless spender,
shopaholic, wants
everything she
sees immediately

Each of the videos has a standalone story in a set format: introduction, action, conclusion. The story is told through action and song. The chorus or repeated lyrics provide useful repetition in a natural way. Typically, the story revolves around how one or more of the band members deals with financial challenges related to some aspect of the four key components of the curriculum. Some storylines also introduce additional financial literacy content, such as credit and card payments. Sometimes 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. The conclusion is always presented as a positive outcome, showing how careful money management can lead to better results.

The stories have a certain amount of predictability which is likely to be appealing and reassuring for children. This approach is also a useful learning aid, as it helps them to imagine the positive outcomes even before they happen, thus helping them to learn problem solve realistic scenarios and identify financially literate behaviours.



Reviewer observations

Each of the characters has strongly identifiable attitudes, behaviours, habits, skills and preferences. They are all likeable, and they each add value in the stories. As every character manages to improve their money management styles irrespective of their initial attitudes and skills, students can learn that everyone who takes the time to learn and understand can be a successful money manager. This is very powerful message, put across in an appealing and entertaining way.

The characters illustrate that everyone can learn new skills or adapt their behaviours where necessary to achieve positive outcomes.

What does Cha-Ching cover?

The teacher guide describes the curriculum as follows:

'Cha-Ching curriculum encompasses economics curriculum for students in primary 2 to 6. The programme emphasises economic and social studies content while providing a strong focus on finance, mathematics, planning and analytical skills. Students are encouraged to use divergent and critical thinking to make decisions on how they manage their money applying the four concepts, Earn, Save, Spend and Donate in their daily life which support positive attitudes as they explore and enhance their money-management skills.'

The Cha-Ching curriculum is organised around Earn, Save, Spend, Donate. The basic premise is that these four elements are 'choices' that are necessary to reach goals.



EARN

Receive income for work or services



SAVE

Keep money now for later use so as to realise 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

Reviewer observations

The four concepts used in Cha-Ching (Earn, Save, Spend and Donate) are often discussed in financial education programmes aimed at children.

The additional words that are defined in the teacher guides appear to have been chosen because they're relevant to the stories in the videos and may appeal to subject teachers, including financial literacy specialists. For example, the word mint is relevant in economics, and the word Government is relevant in both economics and social studies. The other words are commonly used in financial education, although delayed gratification is a technical term typically used in behavioural economics literature, and might be difficult for young students to understand as neither of the words are likely to be familiar.

The four concepts are fundamental to the understanding of money matters. Some of the others may be useful for subject teachers.



The teacher materials indicate that the lessons within the curriculum may develop various skills. These are listed as Analysing; Brainstorm; Designing; Decision-making; Goal-setting; Listening; Mathematics; Observation; Planning; Presentation; Reflection; Teamwork. The skills appear to relate to general learning goals, rather than the Cha-Ching curriculum. In addition, other financial literacy concepts and related words are defined in the teacher guide, as follows:

Mint:

A place where money notes and coins are made by the government.

Resources:

Resources refer to something of value that takes care of a need. If LIMITED, then not all needs will be satisfied.

Goal:

Things you want to work hard for/to get within a period of time.

Government:

A group of people who manage our cities, states and nations.

Afford:

Have enough money to pay for something.

Short-term goal:

An achievement one aims to obtain over a short period of time.

Want:

Something you would like to have but not a must (e.g. toy, decorations, snacks, etc.).

Long-term goal:

An achievement one aims to get over a long period of time.

Need:

Something you must have in your daily life (e.g. water when you are thirsty, clothes, etc.).

Delayed gratification:

The ability to resist the temptation for an immediate reward and wait for a later reward.

Compare:

Checking for similarities or difference.

Ensuring a consistent approach to teaching the curriculum

The classroom programme is designed around 6 music videos starring 6 cartoon characters. The storyline of each video is delivered as a song, and the lyrics are provided as subtitles. Each of the 6 three-minute music videos is aimed at children aged 7 to 12 and is available in 10 languages.

Teachers have access to supporting materials to teach 6 lessons of around 45 minutes each. These include:

Teacher guides

Comics (to replace videos where necessary)

Activity cards, cut-outs and other practical items for class use

Take-home activities

Questionnaires to students

Students are provided with an illustrated workbook to use in class and at home, and those that complete all the lessons are also issued graduation certificates.

There is also a website with additional resources, such as games to reinforce the messages in the music videos, activities for parents to initiate with their children, and apps that helps children track their money cycle and practice what they have learned.

The online comics and games are presented in a way that is likely to appeal to the students and are described with text that is clearly aimed at parents or teachers. For example, the description of the comics reads 'Enjoy these fun and exciting Comics that are designed based on the concepts of Earn, Save, Spend and Donate. These educational Comics are also part of the Cha-Ching curriculum with engaging activities included at the end of each Comic strip.'

There is a section of the website described as 'Stage Pass', which describes the band members. It provides more information than the teacher notes or video, making the site appear to be a little like a fan zone. This may add to the enjoyment.

In addition, there are additional videos which are aired on TV. In total, the Prudence Foundation has developed 18 educational videos using the Cha-Ching band members to tell stories related to Earn, Save, Spend or Donate, maintaining the consistent messaging across the whole programme. Those videos that are not included in the current curriculum cover entrepreneurship (2 videos), having a back-up plan or rainy-day savings, learning self-control, deciding how to use a windfall, sticking to a budget, 'invisible money' in the form of credit, investment, avoiding spending on passing trends, learning to work towards goals patiently and passionately, and shaping the future. Most cover at least two of the concepts Earn, Save, Spend, Donate, and some also touch on other topics such as credit and electronic payments.

Reviewer observations

The breadth of materials is impressive. Teachers have a fully comprehensive teaching package, designed to make sure that they apply good practices in each lesson. Students have the opportunity to further develop their skills through a variety of activities at home and access to additional resources, including more videos. The materials include various questions designed to encourage students to think about the topics in the lesson and model answers. This allows consistency in the overall teaching approach and helps to ensure that important elements of the lesson are not overlooked during the discussion.

The materials are clear and attractive and written in simple language that is appropriate for teachers from a range of disciplines and backgrounds. They encourage the teachers to prepare well for each lesson and learn the definitions of each of the key concepts.

Teacher feedback on the curriculum

Pros

“Very satisfying Program” (INS)

“I want to have this project every year” (TH)

“It is a good programme” (MLY)

“Recommend friends and family because this program is very good at learning and understanding how to manage money well” (IND)

“The learning materials were very attractive that caught the interest of pupils that lead on a successful result” (PHP)

Cons

“This course it’s hard for primary school” (TH)

“Simplify the Take Home Activities” (MLY)

“The game design is flawed, the concept is good though” (PHP)

“Hard to play games” (TH)

A SPOTLIGHT ON EACH OF THE LESSON PLANS

The lessons are designed to be taught in order, starting with lesson 1 which provides a general introduction, and ending with lesson 6 which reviews the whole curriculum. The teacher guide describes the intended outcome of each session. It is envisaged that students accomplish these outcomes through watching and understanding the videos, contributing to classroom discussion and participating in individual and group activities. Class discussion concentrates on understanding the content of the video and applying the lessons to real life.

This section analyses each lesson and its objectives.

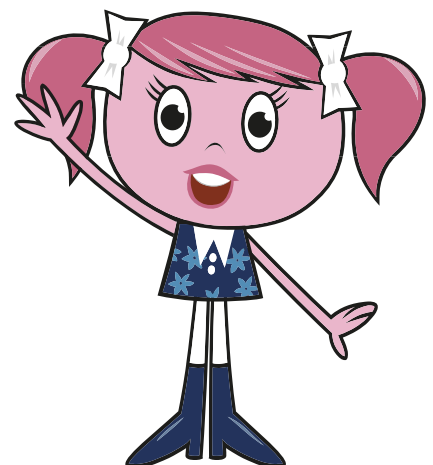
LESSON 1. EARN, SAVE, SPEND, DONATE

STATED OBJECTIVES:

Be introduced to the concept of Earn, Save, Spend, Donate.

Understand spending is not your only option: These are the 4 choices that you have to make with your money.

Learn when and how to make these choices to reach your goals.



The teacher guide recommends that teachers ask the following questions before showing the video (the answers reported below are drawn from those provided in the guide):

- When it comes to money, what choices do you have?
(Answer: Earn, Save, Spend and Donate.)
- Where does money come from?
(Answer: Mint.)
- Once it is printed at the printing press, where does money go?
(Answer: After the money goes to the bank, it will be available for people to Earn, Save, Spend and Donate.)
- What does Earn / Save / Spend / Donate mean?

Additional questions are asked afterwards:

- What happened in the video?
- Where did the money come from?
(Answer: Printing Press)
- What did you see the money do?
Give some examples
- What does Earn / Save / Spend / Donate mean?
- Is Spend our only money option?
(Answer: No. We can also earn, save and donate.)
- Why is it important to know that these are the four choices you have with your money?
(Answer: Once we know that these are the choices, we can reach our goals.)



There is also a class activity, where student teams work together to earn ‘money’. The team then decides how to use the money. The activity introduces various concepts that are not discussed in the video. For example, earnings are paid using play-money of different denominations, showing that each coin or note has its own value. Students also count-up their overall earnings, introducing an element of numeracy.

Figure 2 illustrates the percentage of students that correctly answered a question on the four concepts discussed in lesson 1, before participating in the classroom lessons, and again at the end of the six lessons.

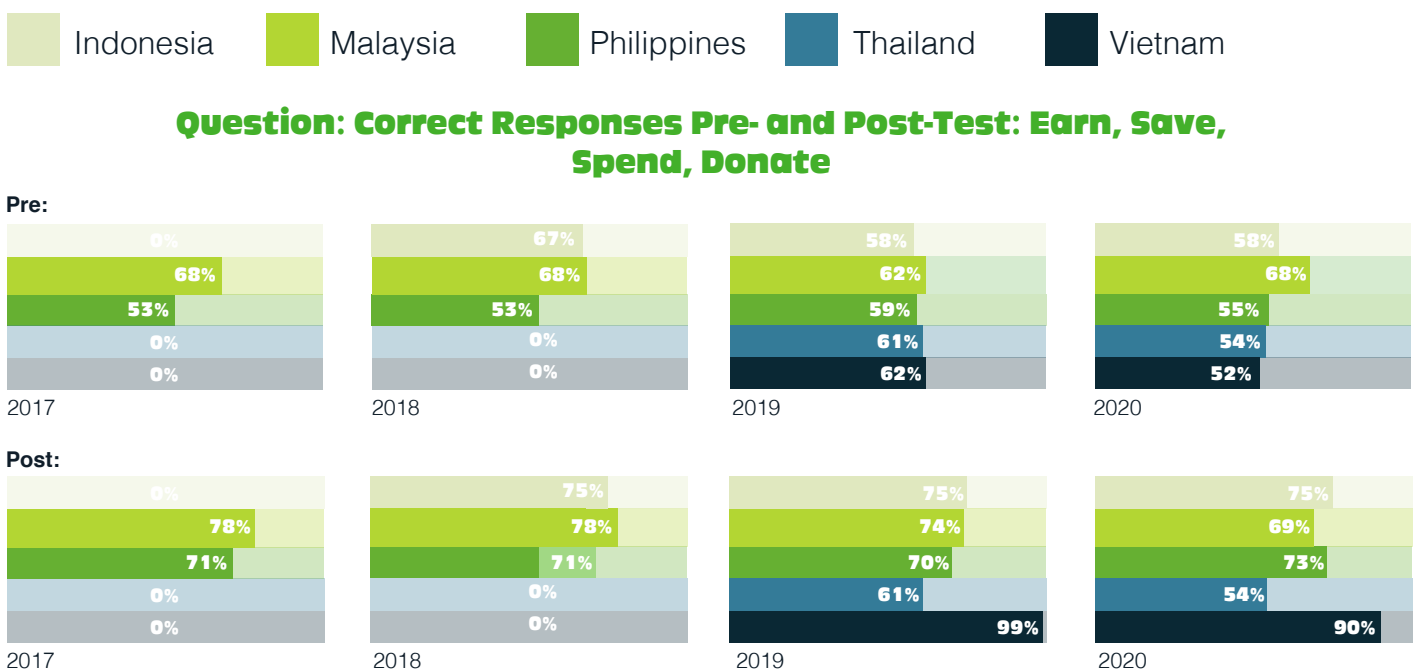
Students in Malaysia were most likely to be aware of the concepts before participating, but there is still a significant increase in their understanding at the end of the programme. The largest increase is observed in Vietnam, where almost all students could answer the question by the end of the six lessons.

Differences across year of implementation show how the initial level of understanding varies across cohorts of students, as well as differences in outcomes.

The pre- and post-tests in Thailand do not show a significant improvement. This may reflect difficulties in the initial stages of implementation.

Figure 2

Correct Responses Pre- and Post-Test: Earn, Save, Spend, Donate.



(Correct answer: Earn, Save and Donate)

Lesson 1

Reviewer observations

The video is fast-paced and highly entertaining. It is impressive how many transactions are illustrated in such a short film.

The classroom activity is also high-energy, and provides the students with an opportunity to discuss among themselves as they complete the tasks, thus benefiting from peer learning.

There is no discussion of ways of paying. This keeps the overall message simple, but many students will already be aware of electronic and digital payment methods, and may ask questions about how these relate to the Mint and the flow of money. Teachers may need to be prepared to answer more in-depth questions`.

Meeting the objectives:

The video meets the first objective by showing how money flows as spending, change, savings, earnings, ad donations, and the questions reinforce this by encouraging the students to discuss money decision.

The second objective relates to the choices that people can make in relation to money. Before watching the video, the teacher asks about the choices available, and is prompted to provide the answer if necessary. The students may therefore interpret the different scenarios in the video as options but this isn't made explicit.

The third objective is ambitious for this first lesson. It is unlikely that students will pick up ideas about when and how to make choices to meet their own goals from the video or questions. The video shows scenarios in which money is used. The activity is likely to reinforce the idea of money being earned and to indicate that there are instantaneous, and there is no opportunity to go back to earn more to meet a specific goal.

The lesson is a high-energy introduction to the Cha-Ching curriculum. The objective are ambitious, and it seems unlikely that all will be achieved during this first 45-minute session. Even so, by the end of the curriculum, more students gave the correct answer to a question on the four concepts in all countries except Thailand.

LESSON 2.

EARN

STATED OBJECTIVES:

Everything costs money.

If you would like something, you need money to buy it.

Money is hard earned.

We have to work and earn by understanding and doing what we are good at.

The teacher guide recommends that teachers ask the following questions before showing the video (the answers reported below are drawn from those provided in the guide):

- How does someone get money to buy something?
Like your Mom and Dad, where do they get money from?
(Answer: Work to get money.)
- Do your Mom and Dad go to work?
- Why do they work? (Answer: To earn money in order to buy things.)
- What does the money your Mom and Dad make get used for? (Answer: Groceries, food, transportation, school / course fees, etc.)
- When you like to have something, does your Mom or Dad buy it for you?, and
- Other than your Mom or Dad, how would you get money?



Additional questions are asked afterwards:

- What happened in the video?
- Zul saw a toy car advertisement on TV and liked to have that car. What did his parents say?
(Answer: They said “No”.)
- Why did his parents say no? Prompt: why was everything in the house labelled with a price tag?
(Answer: Because that car was not free and it cost money.)
- So what did Zul have to do to get the car?
(Answer: Work and earn money.)
- How did he earn the money for the car?
(Answer: He sold apples / fruits.)
- Was making that money easy or hard to do?
(Answer: Hard. Reasons: Zul had to pick fruits from trees, transport them for selling, etc.)
- Why do people need money?
(Answer: To pay for their own things.)
- How do people earn money?
(Answer: To work.)
- Is it easy to earn money?
(Answer: No. People need to work hard for that.)
- What can you do to earn money?
(Answer: To do things that we are good at.)
- Would you like to earn money by doing things that you like or are good at? Why? Why not?

The class activity looks at the price of everyday things by asking about the cost of things in the kitchen and bathroom. The teacher writes prices on the items in a picture of a typical kitchen. The teacher is also encouraged to ask “Where did the money come from that bought these things?” and to check whether the students were surprised about the fact that all the items cost money. A large part of the activity revolves around guessing prices individually, in class and at home.

The charts below illustrate how many students responded to statements about earning money in a way that is consistent with the objectives of the curriculum.

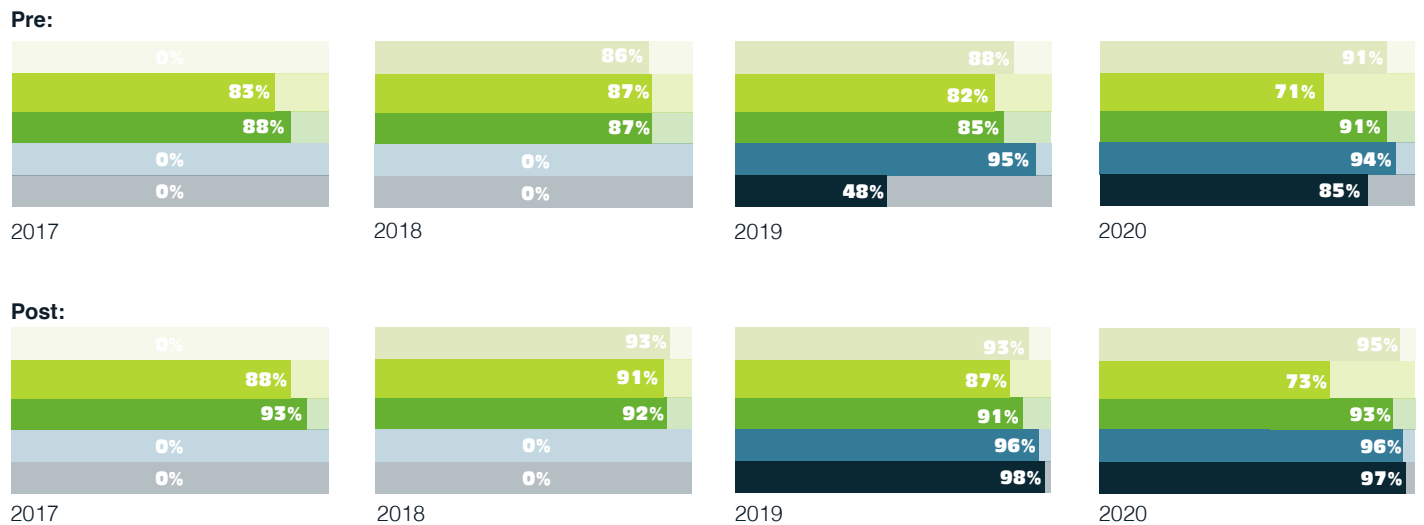
Figure 3 looks at whether students agreed that they understood that money comes from hard work. With the exception of students in Vietnam in 2019, the majority of students felt that this was the case before participating in the Cha-Ching curriculum. A small increase in positive attitudes can be seen in Indonesia and the Philippines and a larger one in Vietnam.

Figure 3

Pre- and Post- Test By Year: Agrees That Money Comes From Hard Work



Question: Please check the box under the answer that applies to you 'Money is earned from hard work'.



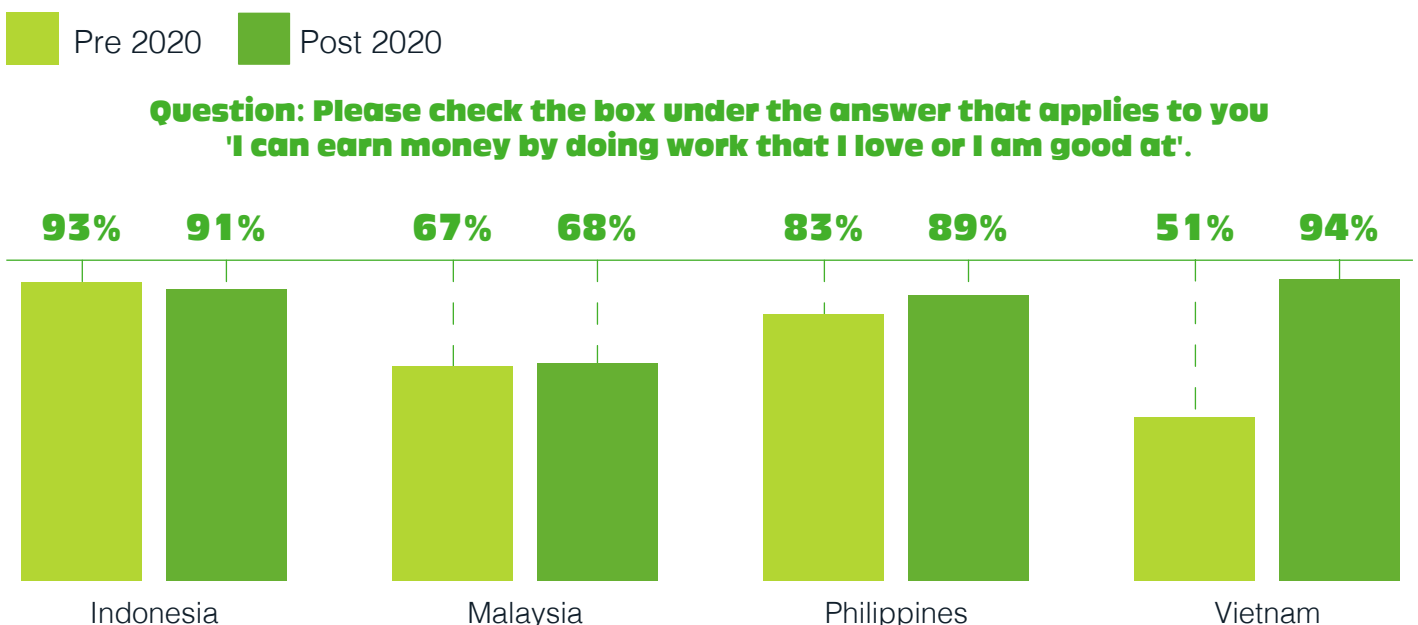
Responses; Strongly Agree, Agree, Disagree, Strongly Disagree

The question in Figure 4 about earning money from doing something you love was only asked in 2020. It illustrates interesting differences across countries, both in terms of initial attitudes and changes. In Indonesia, slightly fewer students agreed with the statement after participating in the curriculum, whilst many more students agreed in Vietnam. In Malaysia, relatively few students agreed initially, and this did not change following the programme.



Figure 4

Pre- and Post-Test By Year: Agrees That They Can Earn Money By Doing Work They Love



Responses; Strongly Agree, Agree, Disagree, Strongly Disagree. Not asked in Thailand.

Lesson 2

Reviewer observations

The story starts with a situation that is likely to be familiar to many of the students; seeing an advert for something that is appealing. It goes on to show clearly how Zul decides that he would really like to buy a toy car, and so he looks for a way to earn the money. The lesson primarily looks at the reasons that people work. There is a strong message that we need to earn in order to buy things, a message that is reinforced in the question and answers.

The second and subsequent lessons also remind the teacher to provide a recap of the previous lesson. This is a good way to keep the overall programme clear in the minds of students (and teachers) and it may help them to understand how each lesson relates to the other lessons.

Meeting the objectives:

The first objective of this lesson is addressed in the images on the video that show the price of things in Zul's house.

The second objective is addressed through the overall storyline, which clearly indicates the cost of the toy car, and the need to save up to buy it.

The third objective is harder to review. Money is 'hard earned' may suggest that the work is somehow difficult, unpleasant or tiring. The video shows a pleasant atmosphere and team spirit, so some students may get the impression that the work is fun (which is equally correct for some people, just a different perspective). The teacher is encouraged to discuss this element of the lesson with the class and point out how picking and transporting fruit would be a difficult task. The final impression of the students may depend on their additional experiences and understanding of the world.

The fourth objective suggests that there will be a strong message that people have to work in something that they are good at. Zul's decision was not specifically based on his ability to pick apples or sell fruit, although he did think about the things he was good at before he made his plan. The recommended answers asked after the video also point to the idea of finding things that you are good at to earn money. The teacher's role in this aspect is clearly important.

The experiences of the students and the discussion in class are vital to help the teacher meet the objectives of this lesson. The lesson is intended to focus on earning, but the activity revolved around prices, which may confuse some students. The data show that some students do change their opinion at the end of the programme. However, there is little change in pre- and post-test responses to this question in Malaysia.

LESSON 3.

SAVE

STATED OBJECTIVES:

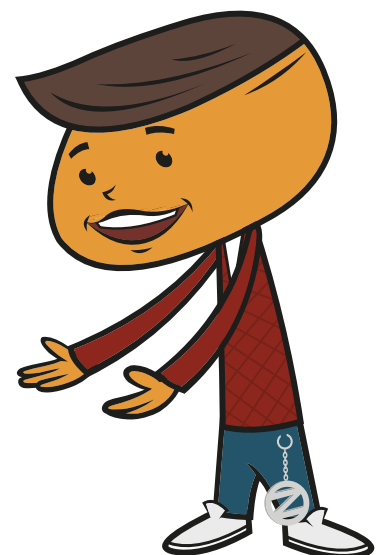
Learn that if you would like something, you have to save for it.

Understand that putting money in the bank/money box helps us save.

Realise that the less you spend, the more you save.

This class involves a lot of questions. Teachers are recommended to ask the following questions before showing the video:

- What does Save mean?
- Do you have a money box at home?
- Do you save money? How?
(Answer: Put money in the bank / money box)
- Why do you save money?



Afterwards the teacher is encouraged to discuss the story (questions not reported here) and additional questions:

- Why do people want to save money?
(Answer: To buy food, a phone, house, pay for university, etc.)
- What is considered good saving habit?
(Answer: To keep track of spending habits, not to spend all money right away, not to get distracted by other things, exercise delayed gratification, put money in the money box / bank, save money regularly, etc.)
- Why is it important to have a good saving habit?
(Answer: It helps us achieve our short-term and long-term goal.)
- How can you save money?
(Answer: Spend less especially on things not required and put money in the money box or bank.)

All students are asked:

- What is save?
- Why is it important to save?
- What are the things you can do to help you save when you would like to buy something?



Older students are asked:

- Do you have something you would like to save for in the short-run / long-run?
- How much does it cost?
- How do you save for it?
(Answer: Spend less and put money in the money box and / or bank.)
- Why do we save?
(Answer: To get what we would like, such as food, a phone, house, pay for university etc.)

Additional questions are recommended by age.
Younger students can be asked:

- Do you have a money box?
- What do you use it for?
- Do you ever spend the money you put in your money box? For what?
- Do you have something you would like to save for?
- How much does it cost?
- How do you save for it?
(Answer: Spend less and put money in the money box and /or bank.)
- Why do we save?
(Answer: To get what we would like, such as food, a phone, house, pay for university etc.)

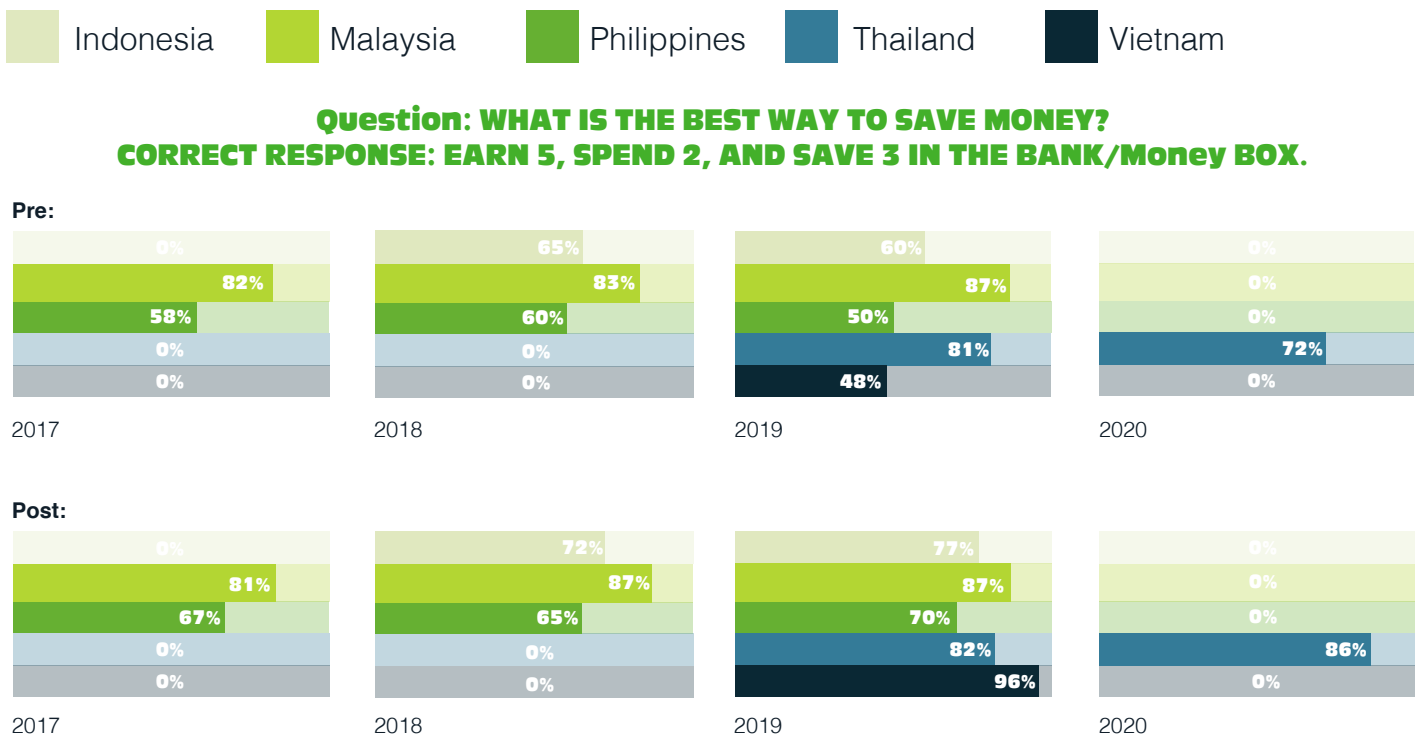
There is also a class activity, in which students decorate a money box that they can take home to save for their goals. There is also a savings challenge worksheet for students to keep a record of money received (earned), spent and saved, and work out how long it will take them to reach their goal. Parents are asked to guide the student to write their savings goal on the money box.

The chart below illustrates how many students correctly answered a question on saving money (Figure 5).

Students in Malaysia were relatively skilled in this area when they started the curriculum, and the percentage giving correct answers changed very little over the course of the programme. Elsewhere, significant improvements were made. The largest increase is observed in Vietnam, where almost all students could answer the question by the end of the six lessons, followed by Indonesia, where improvements were particularly impressive during the second year of implementation. Students in Thailand also made large advances in the second wave of implementation, despite relatively high levels of understanding before participating.

Figure 5

Correct Responses Pre- and Post-Test: The Best Way To Save Money



Note that the 'correct' response is mathematically correct, but not necessarily in the best interest of the saver.

Note that Thailand has data for 2020 from the second wave of 2019.

Lesson 3

Reviewer observations

The video for this session shows how difficult it can be to save up. The song provides regular reminders that saving allows your money to grow until you can afford the purchase you are saving for. It explains that this is easier if you have a clear goal in mind. The whole story is presented in an entertaining and appealing way that is likely to resonate with students.

The activities for this session combine creativity (through colouring or decorating the money box), financial planning and numeracy. The worksheet appears to be more challenging than previous lessons' activities. It is designed to help students to work out how long it will take them to save for their goal, but it is a record of income and expenditure and may be too complex for younger students.

Meeting the objectives:

The first objective is met by illustrating that Bobby cannot buy the drum kit that he wants until he has enough money.

The second objective is met because Bobby receives a money box to help him save, and the students are also given a money box as part of the activity kit for this lesson.

The third objective is the most difficult message to get across. However, the video does this very well, by showing the decisions that Bobby makes initially, and then showing that he tries hard to change his behaviour and succeeds in saving the money.

The challenging objectives of this lesson are met through clever storytelling, and reinforced in the classroom.

LESSON 4.

SPEND

STATED OBJECTIVES:

Understand the difference between needs and wants.

Learn that sometimes you have to wait to get what you want.

Teachers are recommended to ask the following questions before showing the video (more answers are provided in the guide):

- What was the last thing you spent money on?
- Why did you buy it?
- When you bought it, did you compare prices?
- Did you need it or did you want it? What's the difference between a need and a want?
- When you wanted it, did you have all the money or did you have to wait before you bought it?
- What does it mean to spend your money wisely?
(Answer: Stop and think before spending, understand needs and wants before shopping, compare and check for alternatives before deciding, focus on a goal before being distracted by other things, etc.)

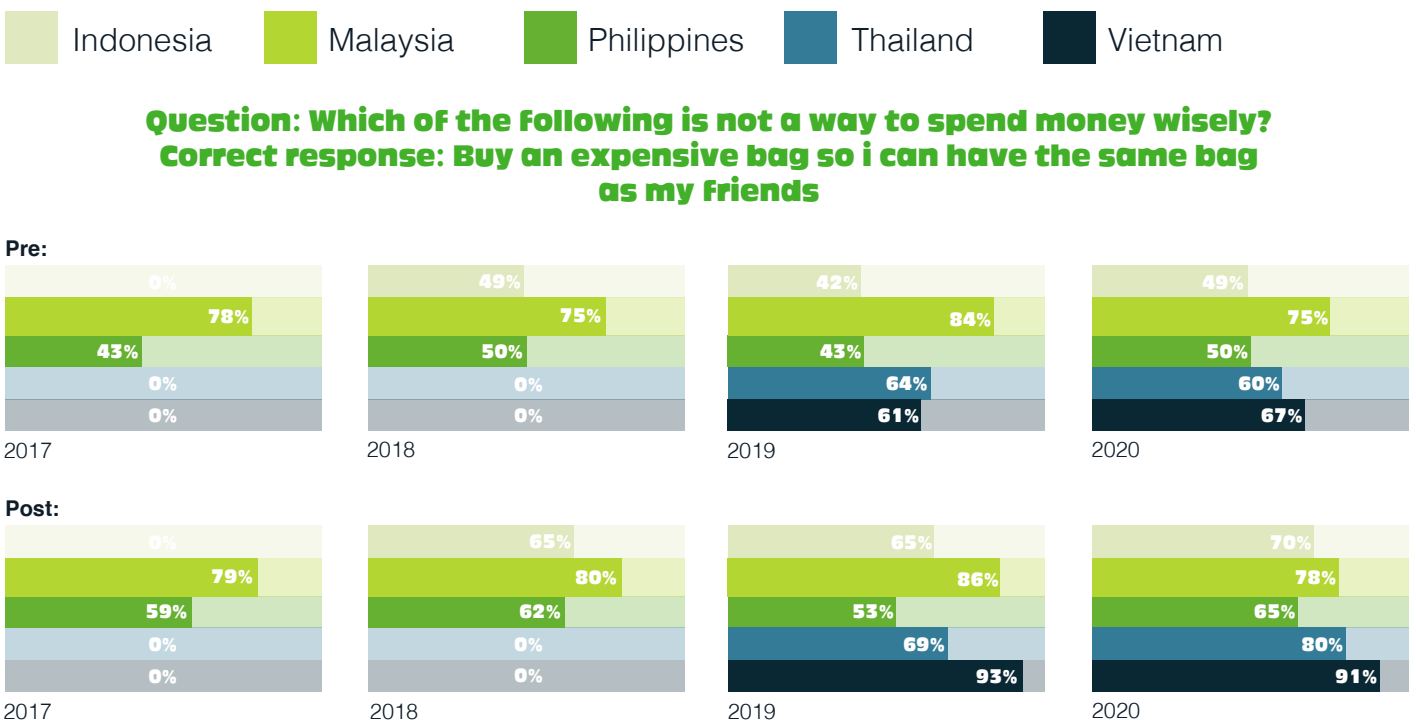
Additional questions are asked afterwards:

- What happened to the Cha-Ching band that made them need to spend wisely?
(Answer: Their speakers broke down and they needed to spend wisely so as to get new speakers for the band.)
- What did the characters do to spend their money wisely?
(Answer: Choose between what they need and what they want, take time to shop around and compare options)
- What were their choices? What did they choose? Why?
- What happened in the end? Was it good or bad? Why?
- What does it mean to spend your money wisely?
(Answer: Stop and think before spending, understand needs and wants before shopping, compare and check for alternatives before deciding, focus on goal and avoid being distracted by other things, etc.)
- What are your needs and wants? Examples?
- How do you satisfy both needs and wants if there is limited resource?
Explain to students that resources refer to something of value that takes care of a need. If LIMITED, then not all needs will be satisfied.
- What are your families' needs and wants?
(Answer: Water, electricity, rent, etc.)
- What does it mean to spend your money wisely?
- When you "Want" something, should you buy it right away? Why or Why not?
- What are some items that you, as a family, don't need but buy?
- If you want something, should you just buy it or not? What should you be thinking about before you buy it?

The class activity for this session is a personal budget-planning worksheet. The worksheet uses the word 'receive' rather than 'earn' for incoming money, which may be a more appropriate word for young students. Students are encouraged to think about things they 'would like' to have and then separate them into wants and needs. They are invited to compare their own worksheet with those of their classmates. There is also a take-home challenge, which asks the students to find out different spending categories with family members, and discuss ways to spend less in order to save more for other needs and wants. The idea is that they write what they spend and then pledge to reduce it.

Figure 6 illustrates how many students correctly answered a question on spending money: Which of the following is NOT a way to spend money wisely? The correct response is ‘Buy an expensive bag so I can have the same bag as my friends’. This is an example of differentiating between needs and wants. Questions with negative phrasing can be difficult for young people, but over 50% of students gave the correct answer in the pre-test. In Malaysia, a very high proportion of students already knew the answer to this question before starting the Cha-Ching curriculum, and still more gave the correct answer at the end of the program. Elsewhere, there was a very large increase in correct responses, in every year. Students in Indonesia, made especially large gains in understanding.

Figure 6
Correct Responses Pre- and Post-Test: Spend



Lesson 4

Reviewer observations

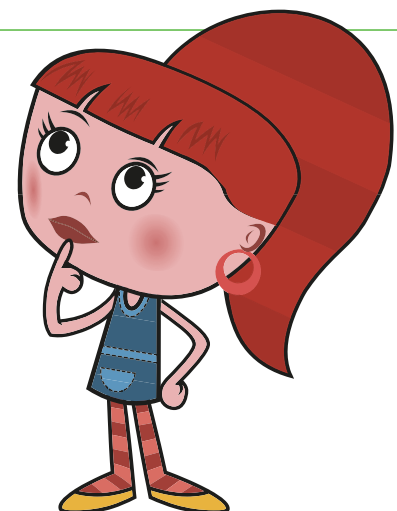
The storyline nicely illustrates the decisions that people make when they have money to spend, but a variety of things to spend it on. The decisions making process is presented well, and provides an excellent basis from which to discuss the concepts of needs and wants, and shopping around.

Meeting the objectives:

The first objective can be difficult to describe in a way that avoids making judgements. However, it is addressed comprehensively in the video in an entertaining and clear way, and the example is very good, as it is something that would not be a need to someone who is not in a band, but is shown as being clearly essential to the band when the audience turns away. This point is also addressed further in the class discussion and activity.

The second objective is stated as having to wait to get what you want, which relates to patience (see comment in definitions section). This objective may be inappropriate. In some cases, people will never get what they want. Equally, sometimes people have to wait for the things they need. Sadly, this can be true for the basics in life such as food or heat, but is also often true for things that are considered essential in many households such as cars, washing machines or computers. It is not clear from the teacher guide whether the teacher will address these points in class.

The story does an excellent job of illustrating how wants and needs are different for each person something that is reflected in the percentage of students correctly answering the question in the post-test. The second objective of this lesson could be refined to better reflect reality



LESSON 5.

DONATE

STATED OBJECTIVES:

Learn that helping people in need will make this world a better place.

Understand the joy when we give without wanting something in return.

Realise that there are many ways for us to donate: money, time, and items.

Know that other than ourselves, we can also get other people to help as well.

Teachers are recommended to ask the following questions before showing the video:

- Why does someone volunteer?
(Answer: Volunteers want to help, they help by donating what they have.)

- What does donate mean?
(Answer: Donate refers to give time, items and / or money away freely in order to help others.)

Have you ever donated? How?

-

What kinds of things can you donate?
(Answer: Time, items, money.)

-

How does it feel to donate? Why?



Additional questions are asked afterwards:

- What are the ways Charity helps people in the episode?
(Answer: She sees an issue on the news regarding hunger and decides to contribute. Next, the band reads about a drought and signs up for a charity walk. As Charity cleans up her room, she finds things that she no longer uses, which could be of use to others. Next, we see the band working in a community garden to grow food for a food bank which they then help to distribute. Charity also spends time playing the keyboard for the elderly, giving books to kids and providing food to a family.)
- Do the characters in the video get anything in return from what they give? Is that okay or not? Why?
(Answer: No, the character did not get anything in return. That is okay, because we are making this world a better place.)
- How do the characters in the episode feel from giving?
(Answer: Joy and happiness.)
- Why people need help?
(Answer: Some people might experience financial difficulties, or something unfortunate had happened to them, where they have no ability to help themselves, so they need help.)
- Why people want to help?
(Answer: People want to make this world a better place, they love to see others happy after being helped etc.)
- How can you help?
(Answer: Donate time, items, and money.)
- What does donate mean?
- What are different ways of donating?
- Why do you donate? [What's important about it?]
- Do you get something in return?

The class activity focuses on people who may need help. It uses a set of cards illustrating people in different circumstances. One card at a time is drawn, and the teacher is guided to ask ‘What kind of help is needed in each scenario?’, ‘What can they do to contribute to the scenarios?’. Worksheets then get them to think about who needs help in more detail, asking them to think about where the people are, what they need and how the student team can help. The guidance tells the students to role play the scenario.

The take home activity is a pledge form – it asks ‘where will you find the time/item/money to donate’.

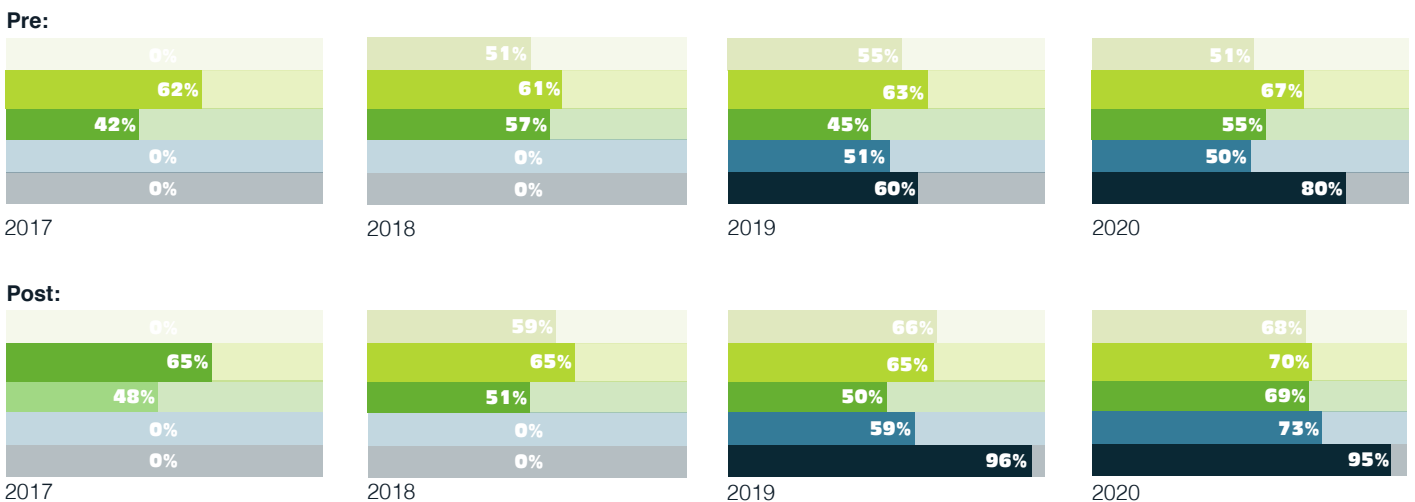
Figure 7 shows that donating was much more widely understood in Vietnam than in the other countries during the pre-test, particularly in 2020. Despite this, a large percentage of additional students in Vietnam understood this concept after the programme. Thailand also saw a very large increase in understanding. It appears that there has also been a general increase in understanding in 2020 in most countries; this may be a result of discussions around the COVID-19 pandemic.

Figure 7

Correct Responses Pre- and Post-Test: Donate

Indonesia Malaysia Philippines Thailand Vietnam

**RESPONSE TO THE QUESTION: TO MAKE THIS WORLD A BETTER PLACE, WE MAY...?...
CORRECT RESPONSE: DONATE MONEY, TIME OR ITEMS TO THOSE IN NEED.**



Lesson 5

Reviewer observations

The storyline shows that the decisions that people make can impact others, and bring well-being to both the giver and the receiver. Various ways of donating are presented, including items bought, time playing in the band (which would otherwise be contributing to earn income), and direct financial contributions. These are not all directly related to money, but they are all related very clearly to the content of the videos.

Meeting the objectives:

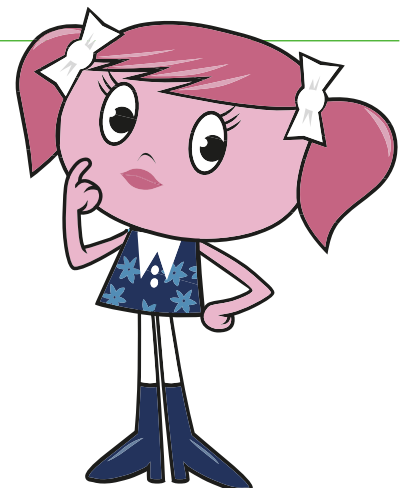
The first objective is met in the sense that the video shows that helping is a good thing.

The second objective may be met through seeing that Charity is happy with her decision. Whether students will assume that they would feel the same way is not clear. Teachers are not asked to include questions about feelings or emotional feedback.

The third objective is met in the video and reinforced throughout the lesson.

The fourth objective is met in the video. This objective seems less important than others, since the whole programme encourages teamwork, whilst on the other hand, decisions around money are often taken at the individual or household level

The topic of donating is handled sensitively and highlights the value of helping others. This lesson has a lot of objectives. The extent to which students will be able to link emotional adjectives to this element of financial literacy is likely to depend on their emotional maturity as well as the content of the lesson. The analysis shows some very large improvements in understanding over the period of implementation.



LESSON 6.

EARN, SAVE, SPEND, DONATE

(Only for students that have completed lessons 1-5)

STATED OBJECTIVES:

Everything costs money and is hard-earned.

A good savings habit helps everyone achieve goals.

Understand needs and wants, and sometimes you have to wait to get what you want.

Helping others in need with money, time and items will make this world a better place.

Teachers are recommended to ask the following questions before showing the video (answers in parenthesis are provided in the teacher guide):

- What are your choices around money?
(Answer: Earn, spend, save, and donate.)
- What does Earn mean? Who does it?
What does it allow us to buy? Is it easy or hard to earn money?
(Answer: Parents earn. It allows us to buy things we need and want. It is hard to earn money.)
- What does Save mean? Why do we do it?
(Answer: We save to achieve our short-term and long-term goal.)
- What does Spend mean?
What should we think about before we spend money?
(Answer: Before we spend, we need to understand whether we are spending for needs or wants and to compare prices, alternatives, focus on goals, not being distracted by other wants etc.)
- What does Donate mean? What are the different ways you can donate? Why do we do it? Do we get anything in return? How does it feel to give?

Follow-up questions are also suggested:

- What are the different ways that the characters have wasted money?
- Justin and Pepper bought a pair of pants and shoes respectively but they did not fit. What should they have done instead? Why?
- Prudence bought a package of 10 lessons because it was cheaper to learn horse riding. But after the first lesson, she learned that she is allergic to horse and can't continue. What should she have done instead? Why?
- Bobby dyed his hair because of how it looked on the box. What should he have done instead? Why?
- Charity used a perfume that was endorsed by a celebrity. What should she have done instead? Why?
- Zul believed an advertisement for hamburger but it was not the same as advertised. What should he have done instead? Why?
- Have you wasted money before? How?
- What you can do to avoid wasting money?
(Answer: Try before you buy and not to be fooled by ads or pictures, consider whether the item is fit for us, think about is it a need or a want.)
- If we spend money wisely, what can we achieve?
(Answer: We would not waste money, we could have more fun for free, we could eventually get what we need and want, we could reach our goals, we could help others.)
- What other things can we do after we spend money wisely?
(Answer: save more, donate and help other people etc.)



The class activity uses a board game to reinforce the Earn, Save, Spend, Donate message. The game comes with cards representing the money choices, a dice, chess pieces, a money holder and play money. The game itself sounds fun. When the player lands on a choice station, they have to pick a card from that choice. Each one has either instructions or choices on it. The spend, save and donate cards each have 2 options. The winner needs to make appropriate decisions based on their own financial situation in the game.

- Each card marked **Earn** requires the student to do some activity such as clap and cheer or sing a line from the school song. The student then collects their earnings.
- The **Save** cards illustrate two ways in which the player has 'saved' money, using the other concept of save – spending less. If the student has the money it goes into the bank or money box. If they don't, they have to move back.
- **Spend** cards are decisions across various elements, including price. The student can spend money they have in the bank or money box. If they don't have enough, they are 'bankrupt' and have to go back to the start of the game.
- **Donate** cards also provide a choice. Some of the donate cards require money, but not all.

There are also suggestions for classroom discussion around the activity:

- Which is your most favourite station? Why?
- How do you like the "Earn" activities?
- Did you save a lot of money? Why / Why not?
- How did you make your spending decisions?
- How did you choose to donate?

The discussion is important, as it is the last summary of the overall 6 week programme before the students fill in the post-survey. There is no take-home exercise for this class, and the students do not get to keep the game, but it is recommended that the teacher leaves it in the classroom for future use.

Following the last discussion, students are asked to take five minutes to complete the post-test.

Lesson 6

Reviewer observations

The video reminds the students that everyone makes mistakes, and that these are an opportunity to learn to make better choices in the future. It gives practical examples that are likely to be understood by most of the students, but especially the older ones.

The classroom activity is engaging, but appears to be relatively complex, particularly for young students and those who do not play board games at home. It may need supervising by more than one teacher.

The activity provides lots of examples of decisions that might be made, and the game offers an opportunity for students to experience the consequence of their decisions. This is an excellent way to bring the emotional element to the fore.

Meeting the objectives:

The objective of this class is to review the overall content of the Cha-Ching curriculum. The video does this without drawing on the previous stories, providing a new opportunity for students to learn or reinforce their understanding.

The last lesson efficiently covers a lot of ground. It is also packed with activities, including a game and post-test survey.



The teacher training process and accreditation

Teachers can take part in professional development over 1 or 2 days to learn how to present the Cha-Ching curriculum and make the most of the comprehensive materials, guides and teaching tools. The teacher training includes a review of the materials and teaching demonstrations. It is aimed at new and existing teachers and can also be used as a refresher course for teachers already delivering the lessons.

Teachers who have been trained can now also seek accreditation. The accreditation process was introduced to provide a recognised certificate of achievement that can lead to career progression – the CCFA. It is endorsed by Local Education Authorities and Government Departments and is expected to help to institutionalise the Cha-Ching curriculum in the Asia Pacific region.

Accreditation seeks to address certain concerns raised by teachers in the feedback surveys. This includes concerns about their own competency in financial literacy (questions such as do I know what I am teaching), confidence delivering the curriculum to students (am I using the right approach to deliver the curriculum) and achieving the learning outcomes (are the students learning the concepts of the lessons). It is anticipated that this will elevate capacity to scale up Cha-Ching across the region by recognizing achievement and inspiring excellence.

The accreditation development process benefitted from input from 200 teachers, a professor and an education strategist, and incorporated question design and tests for validity and reliability. The final test includes 55 questions which was drawn from a set of over 260 questions initially developed. They test the OECD youth core competencies of Money and Transactions; Planning and Management; Risk and Reward and Financial Landscape mapped to the Cha-Ching concepts of Earn, Save, Spend, Donate. The question set was mapped onto a grid to ensure good coverage of the curriculum and validated by 140 educators. The pass mark is set at 80%.



Once the teachers have completed the training and implemented the curriculum in their own classes, they are invited to sit the CCFA test. A promotional video has also been developed to further highlight the benefits of the accreditation process and encourage participation. Teachers are given 3 attempts to pass. Those who do not achieve this are able to redo the teacher training and try again.

The accreditation process can potentially provide additional data on teachers' strengths and weaknesses, including identifiable patterns and incorrect answers. It is possible to identify certain questions that may be difficult, and to explore how these correlate to specific Train-the-Teacher sessions or the amount of experience in teaching the Cha-Ching curriculum.

Teacher feedback on training and teaching the curriculum

Pros

It was a very good experience (MLY)

Many fellow teachers from other classes were very interested and felt the need for this program to be carried out in their classrooms so that all children understood the concept of managing finance (IND)

Yes, it has truly served its purpose, though it was time-consuming for quite some time (PHP)

Cons

I want to increase training time (TH)

JA members should come and run the program for pupils because teacher have too many programs to be done at school (MLY)

Please put this programme under Mathematics not English (MLY).

Provide intensive training for teachers to implement the curriculum more efficiently (PHP)

Teacher training Reviewer observations

Given the comprehensive nature of the materials, teacher training is important to allow teachers time to work through each lesson and discuss the issues that may be raised by students. It is appropriate to make it part of the teacher professional development process, as this makes it beneficial for teachers seeking to progress, maximises the number of partners that can provide the training and ensures quality through external validation. Teacher feedback shows that those who have not received training find the curriculum harder to deliver.

It is possible to accredit teachers based on the data already collected for the evaluation process, and to give the additional recognition for reaching specific goal posts such as teaching the curriculum for three or more years, for example, or improving scores among a certain percentage of students.

Finding an appropriate way to ‘train the trainers’ or teachers is a common challenge for financial education programmes. The approach taken by Cha-Ching is professional and comprehensive. The decision to use it to motivate teachers to continue participating will help to build human resources and increase competencies over time. The accreditation process could be streamlined by drawing on the data collected for evaluation purposes.



Comparing Cha-Ching with other approaches

A comparison of the Cha-Ching curriculum against other curricula identified through a rapid-review process, shows that there are common elements, but that Cha-Ching goes beyond many of them by incorporating 'Donate'. Most of the curricula reviewed reiterate the importance of managing saving and spending, and also cover earning. The following examples are illustrative, and are listed in alphabetical order, by the name of the programme or organisation.

Buy Smart, Australia

Teaching resources developed by the Queensland Government in Australia include various aspects of financial literacy as part of an introduction to consumer issues.⁸ They cover concepts around raising funds, spending wisely and donating. The Buy Smart campaigns revolve around consumption, and so saving is not given emphasis.

The kit includes several innovative lessons aimed at different school years. The following activities may be useful for teachers applying the Cha-Ching curriculum:

- Students investigate the financial and non-financial costs of becoming a pet owner, and consider other factors that influence the choice of pet.
- Students investigate the possible contents of 'shoe boxes of love' and create their own, which can be donated to children in need.
- Students engage with budgeting, currency conversion, scams and online security by running a fundraising event to save a creature from extinction.

⁸ <https://www.qld.gov.au/law/laws-regulated-industries-and-accountability/queensland-laws-and-regulations/fair-trading-services-programs-and-resources/buy-smart-competition/teachers-area/kit>

Consumer Financial Protection Board (CFPB), US

CFPB suggest a wide variety of financial literacy competencies for elementary students, arranged under the headings: Financial habits and norms; Financial knowledge and decision-making skills and Executive function.⁹ They also provide practical suggestions as to how these can be built which have much in common with the Cha-Ching curriculum, including teaching rules of thumb, using music and games, and asking students to set goals.¹⁰

The following competencies and definitions are similar to the Cha-Ching curriculum:

- Various jobs and careers provide different levels of income and require different kinds of skills.
- People must make choices about and prioritize the goods and services they buy because they can't have everything they want.
- A budget is a plan for using income productively, including spending, sharing, and saving.
- Individual spending choices can be affected by a variety of factors, including family circumstances, price of goods and services, advertising, preferences, peer pressure, product quality, impact of purchase on self and others, etc.
- The goal of savings is to set aside income for future spending, whereas the goal of investing is to increase wealth over time.

In addition, the CFPB make explicit various other competencies, including the role of mathematics and positive attitudes:

- Individuals should know the numbers essential to count money. Individuals should understand and be able to use the different values of coins.
- Watch for a student to demonstrate:
 - **Math skills** — shows grade-level skills of numeracy, counting, and math
 - **Positive money attitudes** — understanding the value of saving, frugality, planning, and self-control

CFPB does not focus on donating, or social responsibility.



⁹ Youth Personal Finance Pedagogy: Teaching elementary school students (consumerfinance.gov).

¹⁰ Building Blocks to Help Youth Achieve Financial Capability: A new model and recommendations | Consumer Financial Protection Bureau (consumerfinance.gov)

Council for Economic Education, US

The Council for Economic Education has published National Standards for Financial Literacy for the US.¹¹ These include benchmarks by grade.

On the whole, both the topics covered, and the language used by CEE are more complex than Cha-Ching. The areas covered are: earning income; buying goods and services; saving; using credit; financial investing and protecting and insuring. The standards do not cover donating.

The following descriptions are somewhat similar to the Cha-Ching curriculum:

- Saving is the part of income that people choose to set aside for future uses.
- People can increase their income and job opportunities by choosing to acquire more education, work experience, and job skills.
- People choose from a variety of payment methods in order to buy goods and services.

For Me, for You, for Later, Sesame Street

Sesame Street is a televised educational programme for children that includes various other resources, including a tool kit on Finances for Kids.¹² This is aimed at a young audience, and is generally consistent with the Cha-Ching approach. The following elements resonate in particular, and the very simple language used may also help teachers delivering the Cha-Ching curriculum:

- Learning to make good choices leads to making thoughtful decisions about spending, saving, and sharing money.
- One important part of learning to save is learning to wait.
- If something is special to a child, it has value to him/her.
- Spending means giving money to get something in return.
- Spending involves choices — from deciding what is worth spending money on to choosing between similar items of different prices.

¹¹ <https://www.councilforeconed.org/wp-content/uploads/2013/02/national-standards-for-financial-literacy.pdf>

¹² <https://www.sesamestreet.org/toolkits/save>

International Telecommunications Union

The ITU has developed a core competency framework for digital financial services. This is not specifically aimed at youth but is one of the few tools that seeks to specifically address the issue of digitalisation.¹³ Of particular note are the following competencies, even though the wording is more appropriate for adults:

- Be able to count, read and write numbers and apply basic mathematics.
- Know the rights and responsibilities of the consumer.
- Base purchasing choices on actual information, rather than generated by targeted advertisement, and on genuine user requirements and needs.
- Be mindful of one's digital footprint and reputation and understanding the benefits and risks of having several online profiles.¹⁴
- Manage personal data and one's privacy.

The framework also includes competencies for parents, including (but not limited to):

- Be aware of the risks associated with children's access to DFS, and the necessity to safeguard their access to DFS (child online protection).
- Monitor children's devices, including all downloaded apps
- Monitor and use passwords to prevent children or an authorized person from accessing or using sensitive or dangerous products and services.
- Set up parental controls and restricted access to DFS for minors.
- This framework may be useful as a basis from which to develop child-appropriate competencies for the digital age.



¹³ DFS Consumer Competency Framework - My ITU

¹⁴ Aligned with this, a recent article in the Economist suggested that parents should possibly inform children to 'mind their language' online.

Jump\$tart, US

Jumpstart has a range of standards for different age groups.¹⁵ Those aimed at kindergarten children are most similar to Cha-Ching. Jumpstart covers receiving money and career planning, saving, spending and sharing.

The wording of the following competencies or guidance notes could also be of relevance in the current Cha-Ching curriculum:

- Children might receive money from a regular allowance, or earnings from special household tasks.
- People might receive money as gifts.
- There are ways to keep possessions, including money, safely at home and other places.
- Explain why some spending transactions return change to the buyer and some do not.
- Something shared that does not have to be returned is a gift. Something borrowed must be returned.

Money Advice Service, UK

The Money Advice Service in the UK has developed a tool kit to support financial literacy teachers working with students with learning disabilities.¹⁶ The activity tool kit includes practical tips for the teacher such as 'keep up to date' and 'use images, symbols and pictures'. It is aimed at supporting some level of independence and focuses particularly on saving and spending, as well as attitudes to money and solving problems. There are also topics such as credit use and money worries which go beyond the scope of the Cha-Ching curriculum.

The tool kit also has useful self-assessment questions formatted as a quiz, with images to aid understanding.

¹⁵ National Standards in K-12 Personal Finance Education [PDF] (jumpstart.org)

¹⁶ Helping young people with learning disabilities to understand money [PDF] (arcuk.org.uk)

MoneyCounts, US

MoneyCounts Series, a Penn State branded umbrella programme, offers free workshops at different locations, presentations, webinars, and freshmen seminar classes.¹⁷

The curriculum focuses on Earning (including from investments), Saving & Investing, Spending, Borrowing, and Protecting. Given the older target age, the definitions described in the first lesson are broader than those used by Cha-Ching. The curriculum also promotes the elements of financial well-being developed by the FCPB, namely Security and Freedom of Choice.

Some of the messages from MoneyCount could be simplified for the Cha-Ching curriculum. Cha-Ching could encourage teachers to remind students that their time at school is valuable because there is a relationship between education and earning. It could also discuss the idea of 'paying yourself first' or getting in the habit of prioritising savings before spending on wants.

OECD Core Competency Framework for Youth

The OECD framework was developed following a thorough review of other frameworks and related documents.¹⁸ It is therefore considered to be representative of best practices at the time. It was used to inform the development of the Cha-Ching curriculum, and as a result the two approaches are aligned although Cha-Ching uses much simpler language to describe the key components.

The OECD framework focuses on students and young people aged 15 to 18. It is outcome focused, meaning that it lists the competencies but does not describe how to achieve them. It is developed around the following Competencies: Money and transactions; Planning and managing finances; Risk and reward; Financial landscape. Each competency set is described in terms of awareness, knowledge and understanding; confidence, motivation and attitudes; skills and behaviour. The framework is seen as foundational, in the sense that it is complemented with other frameworks for adults, MSMEs and investors. It describes three competency levels, the first of which is most relevant for the Cha-Ching target age-group.

¹⁷ Chapter 1. Five (5) core competencies: MoneyCounts: A Penn State Financial Literacy Series (instructure.com)

¹⁸ <https://search.oecd.org/daf/fin/financial-education/Core-Competencies-Framework-Youth.pdf>

The following competencies listed in the OECD framework are only touched upon in the Cha-Ching curriculum, but could potentially be developed further from the existing resources:

- Aware of the common forms of money. Understands that cash and coins have a financial value.
- Aware that people can store their cash in various ways, including in a bank.
- Aware that people who keep their cash in a bank can withdraw it over the counter or at a cashpoint.
- Aware that once they spend their money, it is no longer available to them to spend on something else.
- Can make simple choices across similar products based on price and quantity.

The OECD framework is complemented by the PISA financial literacy analytical and assessment framework and related assessments.¹⁹ One of the background questionnaires used for the PISA 2018 financial literacy assessment asked students whether they feel not at all confident, not very confident, confident, or very confident in performing the following tasks when using digital or electronic devices outside of a bank: transferring money; keeping track of their balance; paying with a debit card instead of using cash; paying with a mobile device (e.g. mobile phone or tablet) instead of using cash; ensuring the safety of sensitive information when making an electronic payment or using online banking. These could be interpreted as competencies for 15-year-olds.

The OECD is also now responsible for Global Money Week (GMW), a coordinated financial literacy week which is aimed at children and youth. The overall GMW slogan is 'Learn, Save, Earn'. The 'learn' message could also be used to cover the value of education in terms of future earning power. Global Money week also develops annual themes to encourage innovation among financial education providers. Reflecting the global pandemic and the policy focus on financial resilience, the 2021 event went under the title 'Take Care of Yourself, Take Care of Your Money'.²⁰

¹⁹ <https://www.oecd.org/pisa/sitedocument/PISA-2021-Financial-Literacy-Framework.pdf>

²⁰ <https://globalmoneyweek.org/about/gmw-theme-slogan.html#:~:text=of%20your%20money%27-,%27Take%20care%20of%20yourself%2C%20take%20care%20of%20your%20money%27,create%20their%20own%20GMW%20activities>

Wisconsin Standards for Personal Financial Literacy, US

The Wisconsin Standards were written by a committee of educators, professors, and business owners from across the state of Wisconsin.²¹ They go further in terms of digital financial products than any of the other curricula discussed in this review, covering topics such as online and account security, digital footprints and digital resources. Such topics will also be relevant to many of the students and teachers working with the Cha-Ching curriculum.

Traits of a Money Smart Child, Hong Kong

The Investor and Financial Education Council of Hong Kong has put together a useful 2 page guide for parents, describing how financial literacy grows with age.²² Among other things, the guide indicates that younger money smart children would:

- Make an effort to gain rewards.
- Protect their belongings.
- Save at least a dollar for every 10 dollars received.
- Allocate pocket money.



²¹ <https://dpi.wi.gov/sites/default/files/imce/standards/New%20pdfs/PersonalFinancialLiteracyStandards2020.pdf>

²² <https://www.ifec.org.hk/web/common/images/parent/traits-of-a-money-smart-child/Traits-of-a-money-smart-child-TC-EN.pdf>

Work Pay\$, Australia

Work Pays is programme aimed at improving the financial literacy of young people with disabilities as they transition from school to work.²³

The programme content was structured around a reduced set of the financial literacy core competencies identified by the OECD. The modifications were required to accommodate the differential skills and capacities of the students. The programme was delivered in fourteen one-hour sessions over the course of a semester. The content is very similar to Cha-Ching and remains true to the OECD framework. It includes interesting and engaging materials, some of which could potentially be used to develop additional activities for the Cha-Ching Curriculum.

Curricula overview

Reviewer observations

The Cha-Ching curriculum was developed by experienced educationalists to appeal to the target group. It is clear from this overview that they have skillfully applied the recommendations and good practices identified globally. It is both appropriate for the target audience and comprehensive. It goes beyond many similar curricula to incorporate the concept of Donate. However, since it was developed several years ago it does not explicitly cover the digitalisation of financial services, and this now needs addressing. This may be through the addition of new class activities around digital payments, for example. Content could eventually cover topics such as avoiding scams, keeping personal information safe and considered use of social media. Such content is likely to benefit teachers and parents as well as the students.

Teachers may also wish to draw on opportunities within the curriculum to discuss numeracy and the protection of assets.

The curriculum compares favourably with other high quality programmes. However, given the rapid changes in the financial landscape, now would be a good time to incorporate the role of digitalization.

²³ (10) (PDF) Work Pay\$ Evaluation of a programme to teach everyday money skills to young people with disabilities (researchgate.net)

Section 2. Quantitative Evaluation of Outcomes and Impact

Evaluation Data

Cha-Ching follows good practices in terms of evaluation. It was designed with monitoring and evaluation in place and uses a consistent method across countries and schools to ensure comparability. As would be expected, some small adjustments have been made over time, but these have remained aligned with the initial approach.

The monitoring includes a range of statistics about number of teachers trained, schools implementing the programme and students reached, as well as a detailed breakdown of budget and actual spending. The overall data are rich and informative. For the most part, they are collected for internal use only.

The outcome evaluation process incorporates data collection from students and teachers. The data is collected as follows:

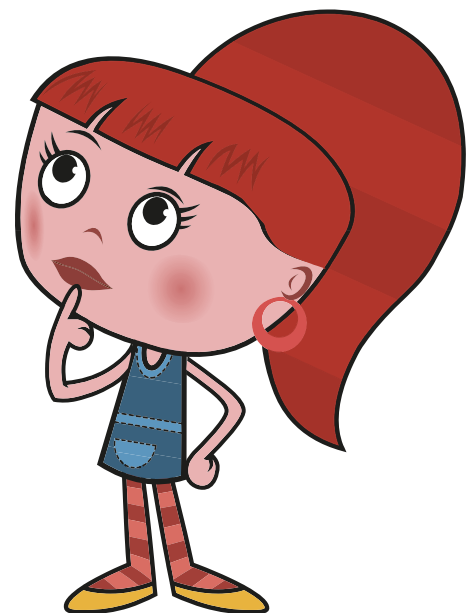
1. Teachers circulate paper copies of the evaluation form to their students. They also receive a teacher survey to complete.
2. Local JA Offices gather all pre- and post-test responses and teacher surveys from schools. The surveys are to be kept for 2 years before shredding them for recycling.
3. Data is manually entered into a spreadsheet. Files are very large, containing two records per student.
4. Depending on the total number of students, the JA office creates matched data. Matching is achieved at the school level using three variables – three letters from the student's name, their date of birth and their gender.
 - a. Where there are fewer than 20,000 students all data is entered, and matched by student.
 - b. Where there are more than 20,000 students, a minimum of 6,000 student records per geographic region are entered and matched, the remainder are just entered as they are. The 6,000 are selected at the school level through random selection.
5. Formulae are used to monitor changes in student scores and create charts for annual reports.
6. All teacher data is entered into a spreadsheet and analysed.

Evaluation: Reviewer Observations

There is a comprehensive approach to monitoring and evaluation. As a result there is now a massive amount of data that can be used. The student questionnaire is relative short, and focuses on the main elements of the curriculum.

It is not clear when the teacher is expected to complete their own questionnaire. Looking at the results recorded, it appears that there has been discussion among the teachers as there are several instances where an unusual response is replicated several times. This reduces the value of the responses, and may suggest that they are completing the task with colleagues in their break time.

The implementation of the Cha-Ching curriculum has generated a wealth of data. It is now probably the largest database of matched student financial education outcomes available anywhere in the world.



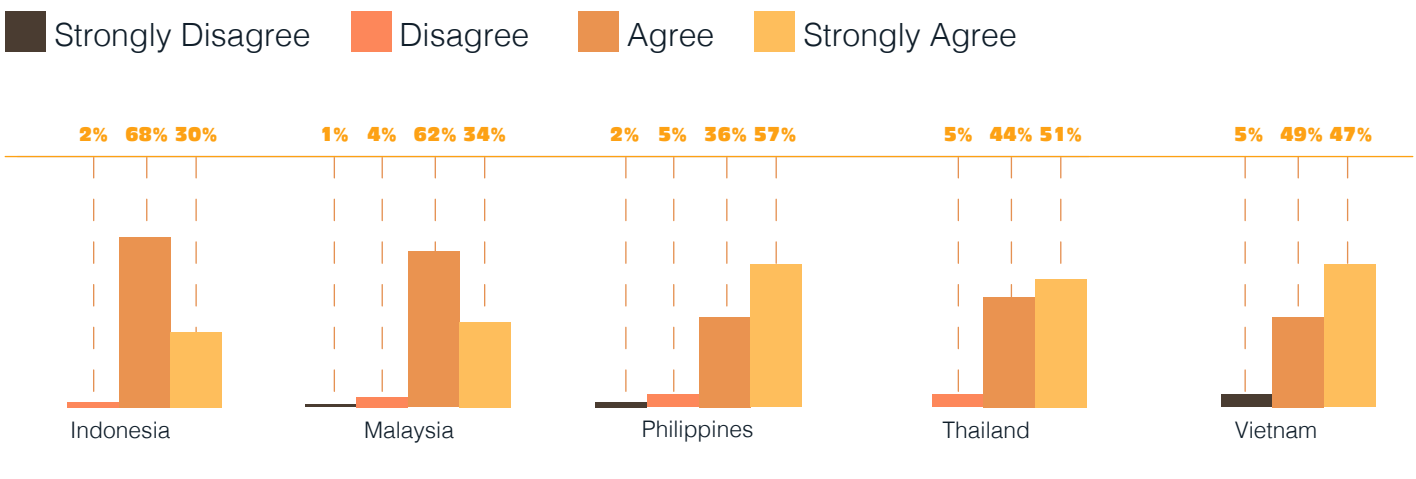
The Teachers

This section focuses on the most recent teacher data available (from 2019-20). It includes individual records from 3,420 teachers: 1,636 from Indonesia, 626 from Malaysia, 800 from the Philippines, 195 from Thailand and 163 from Vietnam. The vast majority of teachers were positive about all aspects of the Cha-Ching curriculum, which is reassuring. However, since there is little additional that can be learned from positive feedback, the analysis reported below focuses on response variations that may offer insights for the future.

Preparation

Most teachers felt well prepared to teach Cha-Ching (Figure 8). No more than 7% (the Philippines) disagreed that the training was adequate to deliver the curriculum. However, the Philippines also had the largest proportion of teachers who agreed strongly that they were well prepared (57%).

Figure 8
Teacher Reported Receiving Adequate Training



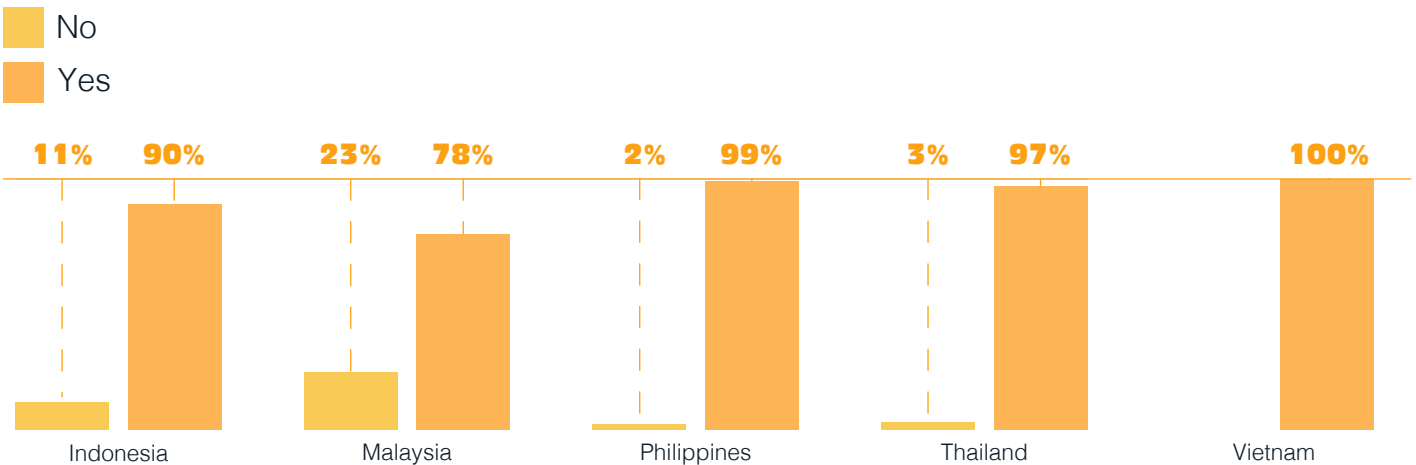
Participating Again

A small proportion of teachers in Thailand (3%), and a larger proportion in Malaysia (23%) and Indonesia (11%) reported that they would not participate in Cha-Ching again (Figure 9).

Logistic regression analysis shows that Malaysia, Indonesia and the Philippines, other things being equal, teachers over the age of 55 were significantly less likely to want to participate again, as were teachers who taught alone rather than in a team.²⁴ The number of students taught, use of individual or combined sessions and gender of the teacher were not significantly associated with this preference.



Figure 9
Teacher Willing To Participate Again



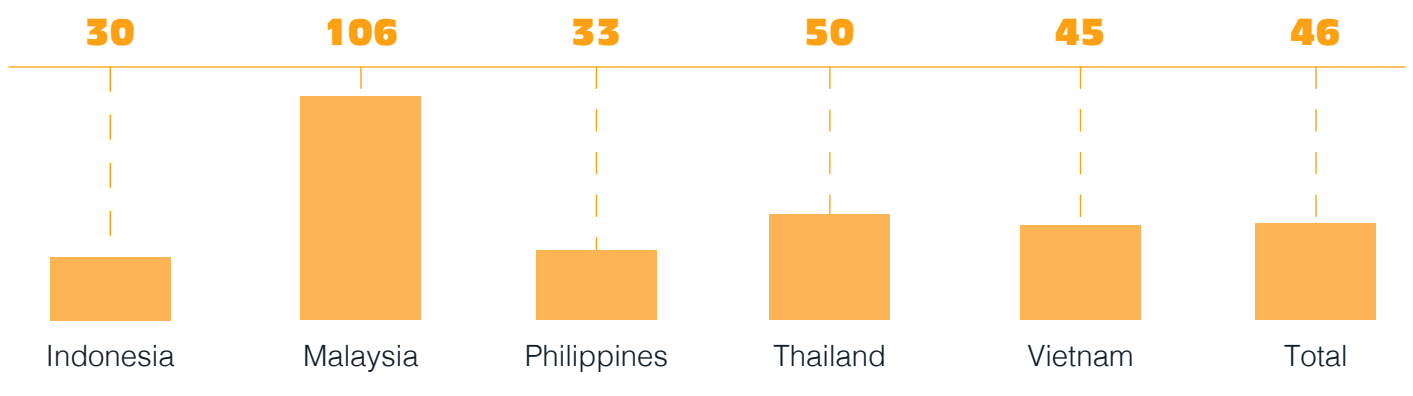
²⁴ Data from the Philippines cannot be compared with the other countries in a logistic regression due to the data format. All teachers in Vietnam were happy to participate again and so were not included in this analysis.

The Lessons

The teacher data suggests that almost all lessons within a country were taught in one language - Indonesian in Indonesia; English in Malaysia; Vietnamese in Vietnam and Thai in Thailand. In the Philippines English was the only language used amongst teachers answering this question but approximately half did not respond to the question. A small proportion in Malaysia (2.4%) reported that they taught in Mandarin.

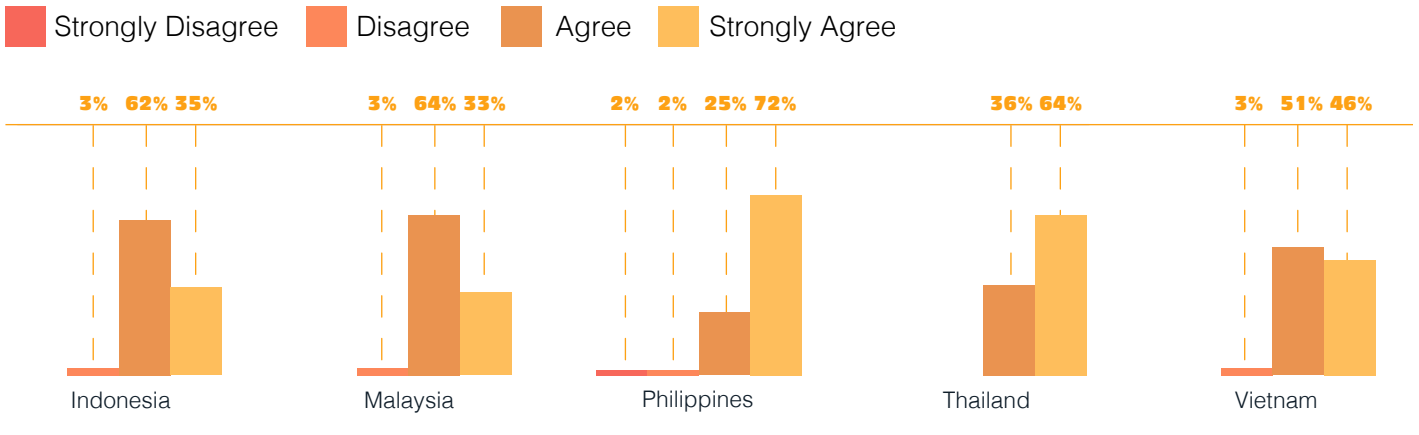
The average number of students taught the Cha-Ching curriculum in each country varied (Figure 10). Teachers in Malaysia were responsible for considerably more students than those in other countries, with an average of 106 students per teacher compared with as few as 30 in Indonesia.

Figure 10
Average Number of Students Taught By Each Teacher



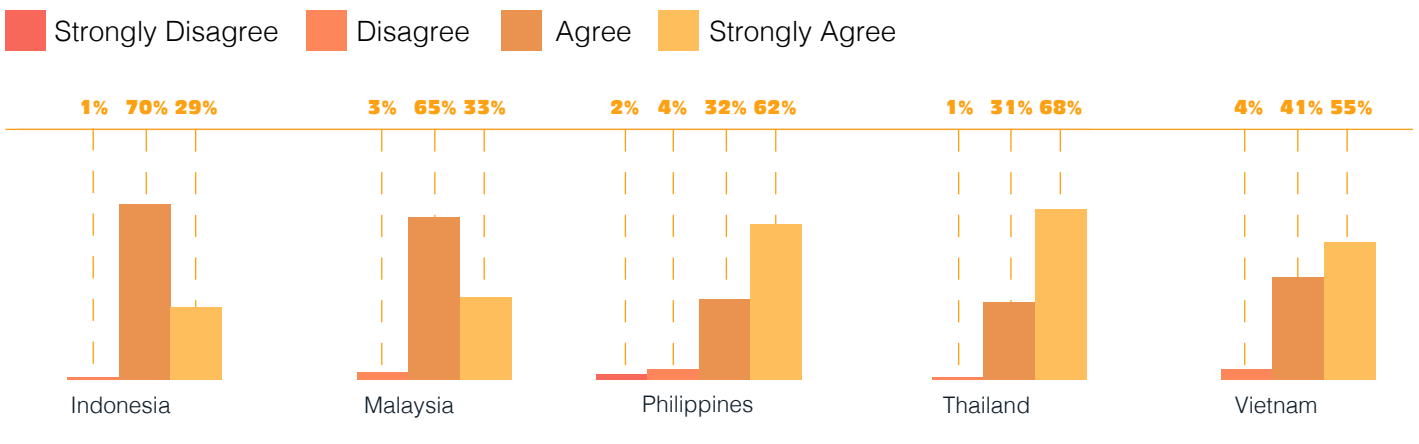
Teachers agreed that the curriculum held their students' attention (Figure 11). Only a small minority of teachers agreed with this statement across participating countries. Many teachers strongly agreed that the students' attention was held in the Philippines (72%) and Thailand (64%).

Figure 11
Teacher Report: Cha-Ching Held The Students' Attention



Teachers felt that the material was age appropriate in most cases (Figure 12). However, 4% disagreed in Vietnam and the Philippines, the two countries with the largest proportions of 8- and 9-year-olds.

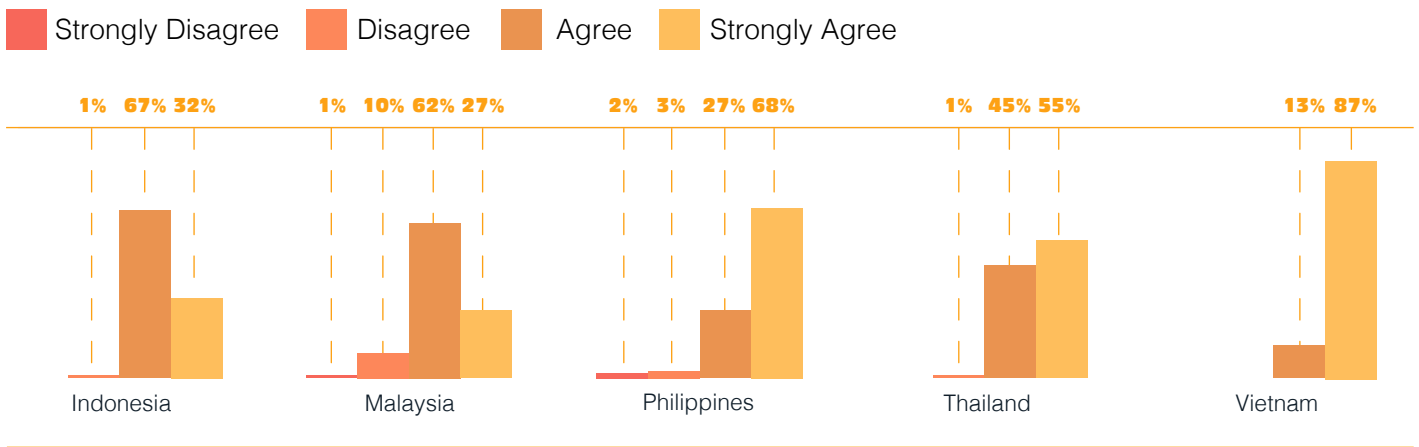
Figure 12
Teacher Report: Cha-Ching Was Age Appropriate



Whilst most teachers were confident that the students were engaged, more than one in ten (11%) of teachers in Malaysia, and 5% of those in the Philippines did not agree that all students actively participated in the lessons (Figure 13). This could reflect the language of the lessons in these countries. Note that whilst students were older in Malaysia (Figure 15), this does not seem to be the reason for a lack of engagement, since 97% of teachers reported that the curriculum was age appropriate (Figure 12).

Figure 13

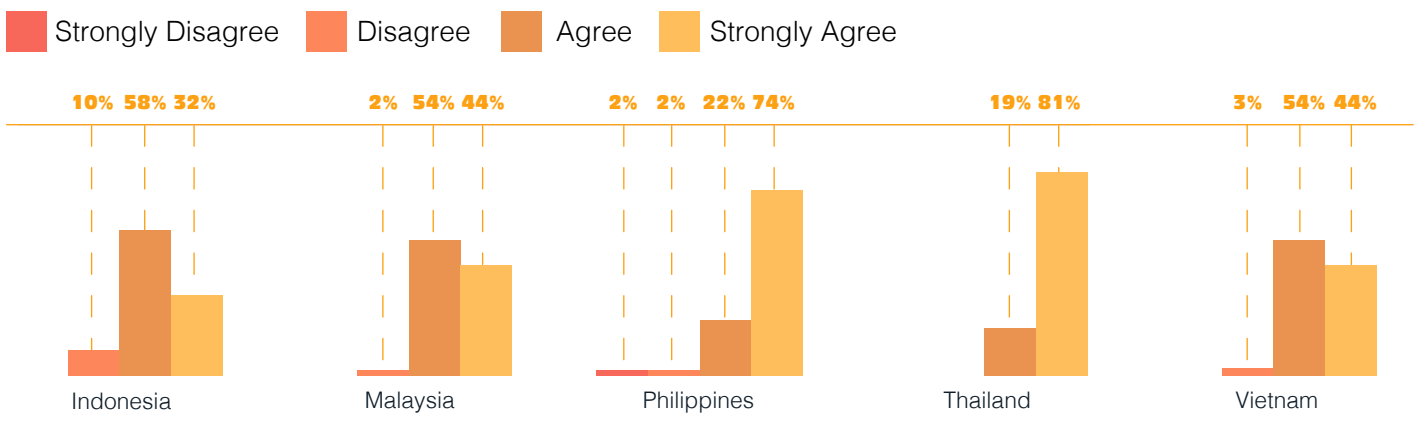
Teacher Reporting That Students Actively Participated In The Lessons



Whilst teachers were generally confident that students would learn the concepts being taught, one in ten teachers in Indonesia were uncertain that students would learn that money is hard earned (Figure 14). Results reported below show that in fact, Indonesian students had lower understanding of this concept initially but most understood it after participating.

Figure 14

Teachers Agreeing That Cha-Ching Taught Students That Money Is Hard Earned



The Students

The student dataset combines usable matched data for 213,514 students from five countries, collected between 2017-2020 (Table 1). The gender distribution is approximately equal in each country, as anticipated.



Table 1

Number Of Students Per Year, Per Country

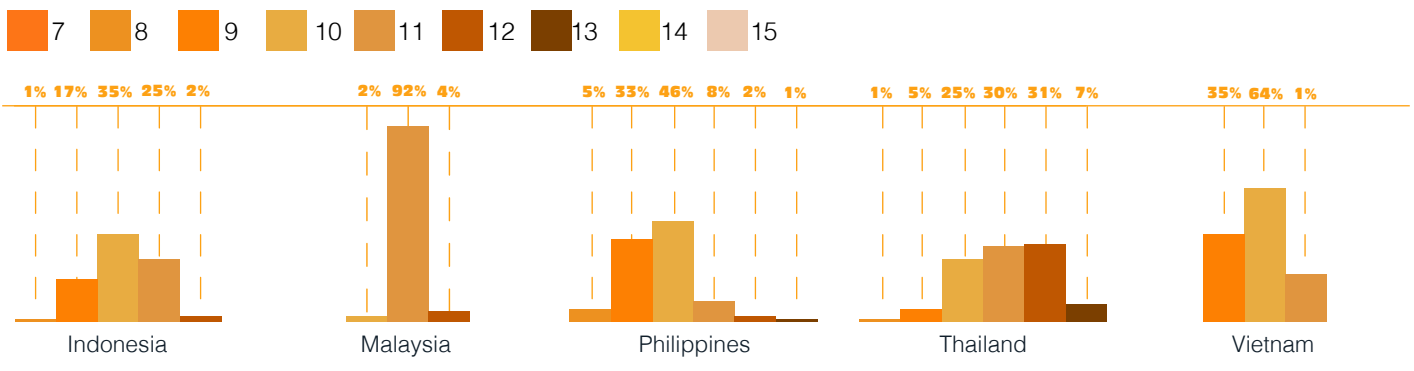
	2017	2018	2019	2020	Total
Indonesia	-	53,976	6,006	12,094	72,076
Malaysia	12,967	17,420	6,535	6,303	43,225
Philippines	15,002	36,043	6,000	5,856	62,901
Thailand	-	-	11,894	9,783	21,677
Vietnam	-	-	6,299	7,336	13,635
Total	27,969	107,439	36,734	41,372	213,514

Note: Throughout this study, 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.

Each record represents a student who participated in the Cha-Ching curriculum, and includes information such as date of birth, gender, school and school year (grade). It also includes student responses to two surveys, one completed before participating in the curriculum (pre-test), and the other completed at the end of the final lesson (post-test, and undertaken approximately 6 weeks after the start of the programme, on average).

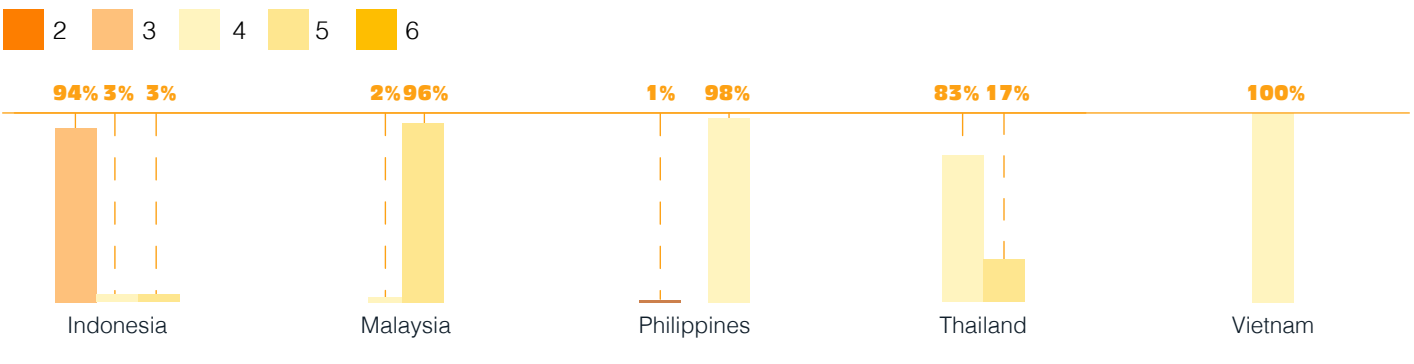
The age of participating students has varied by country during the years of participation so far (Figure 15)²⁵. In Malaysia, almost all students participated when they were around 11, whilst in the other countries, a range of ages took part. In Indonesia, the Philippines and Vietnam, the students were typically 10, but 18% were aged 8 or 9 in Indonesia, 38% in the Philippines and 35% in Vietnam. In Thailand, students were typically 11 or 12, but a quarter were 10 and 7% were 13, whilst just 6% were 8 or 9.

Figure 15
Age Distribution, By Country



Despite the variety of ages participating, schools have focused the Cha-Ching Curriculum on one school grade (Figure 16). In the Philippines, Thailand and Vietnam it has been implemented in grade 4, grade 3 received the lessons in Indonesia and grade 5 in Malaysia.

Figure 16
School Grade, By Country



Note: Approximately 15% of responses from Thailand have missing data on school year. The percentage is of valid responses.

²⁵ Throughout this report, student age is calculated from date of birth, using the approximate mid-point of implementation in each country. It is recommended that future waves of data collection ask the student their actual age at the time of participation.

Students Outcomes And The Impact of Cha-Ching

The rich data enables detailed analysis of student outcomes and the impact of the Cha-Ching curriculum. Most of the reporting in this section combines results from all available years (see Table 1) to provide an overview of differences by country.

Student Knowledge

Below are several charts looking at students' knowledge before and after participating in the Cha-Ching curriculum.²⁶ The pre-test scores show that some questions were harder than others for most students (Figure 17). However, over 50% of students were able to answer each of the questions even before taking part in the lessons, with the exception of students in Indonesia and the Philippines who found it difficult to answer the question about spending wisely. A larger proportion of students in Malaysia gave correct answers to most of the questions. However, students in Indonesia were more likely to know about money flow.

At the end of the six lessons, each question was answered correctly by no fewer than 60% of students in any country (Figure 18). The proportion of correct responses increased in every country over the course of the curriculum, but some saw particularly large increases. Students in Vietnam absorbed the lessons particularly well. Vietnam had the largest percentage of correct responses in the post-test on every question except money flow, where students in Indonesia continued to perform better than those in the other countries.



²⁶ This review does not use the categorisation of knowledge, attitudes and behaviour indicated in the questionnaires. The grouping takes into account other measurement approaches, factor analyses and reliability tests.

Figure 17
Correct Responses To Knowledge Questions: Pre-Test

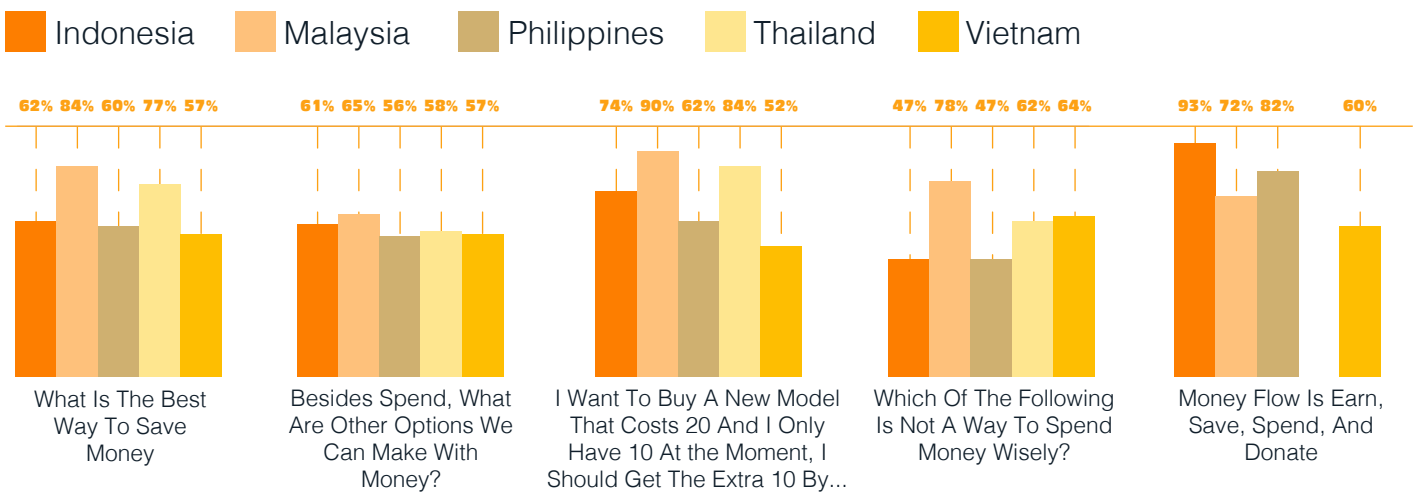
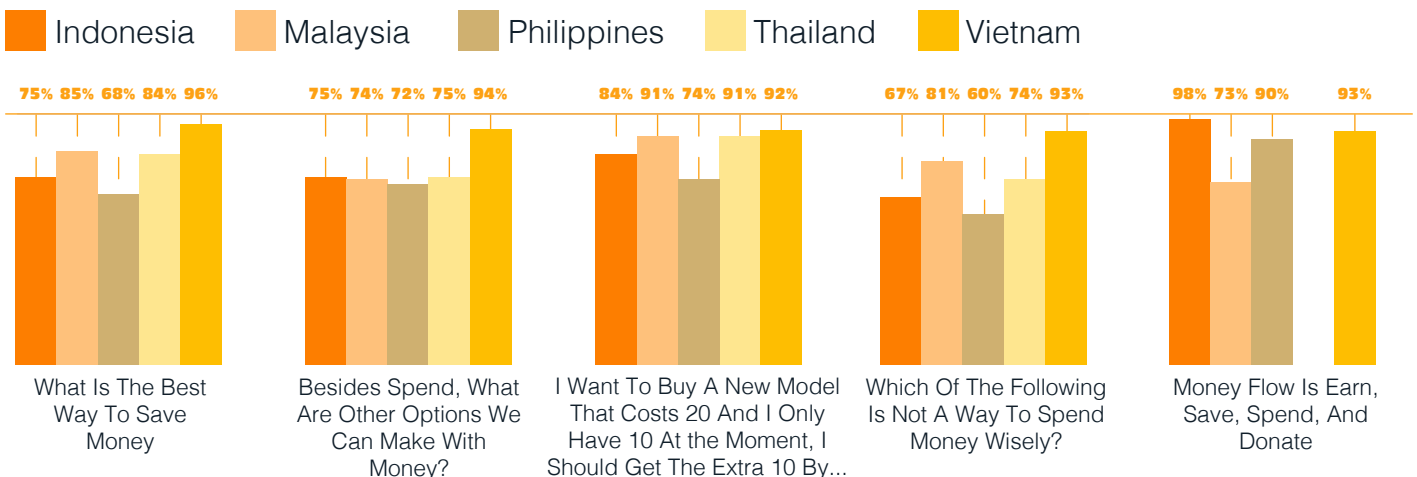


Figure 18
Correct Responses To Knowledge Questions: Post-Test



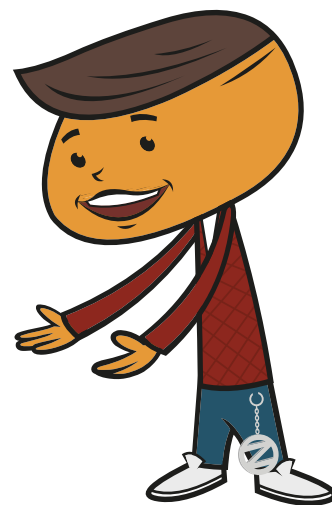
By counting correct responses across the 3 knowledge questions that were asked every year, it is possible to create a simple score to help with more in-depth analysis of students' achievements and the role of Cha-Ching.²⁷

Figure 19 and Figure 20 look at financial knowledge scores and the difference in financial knowledge by gender, before and after participating in Cha-Ching, whilst Figure 20 illustrates the size of the change.

They show that students in Malaysia had far higher initial scores than those in other countries. By the post-test, average scores were all above 2, and the range across countries was lower than during the pre-test, perhaps indicating that there is a ceiling effect beyond which one would not expect knowledge to increase in a cohort of mixed ability students.

Figure 19 shows that except for in Vietnam, girls had statistically higher levels of financial knowledge than boys initially, and they maintained this lead position in the post-test (Figure 20).

Average scores for both girls and boys increased significantly in the post-test. Furthermore, in every country except Malaysia, boys' post-test scores exceeded the girls' pre-test scores, thus putting them ahead of students who had not participated in the curriculum.



²⁷ Knowledge score based on 3 questions in Figure 17: Besides spend what are the other options we can make with money; I want to buy a new model; Which is not a way to spend wisely.

Figure 19 Pre-Test Knowledge Scores, By Gender (Max Score = 3)

Statistically Significant Gender Differences in Indonesia, Malaysia, Philippines and Thailand.

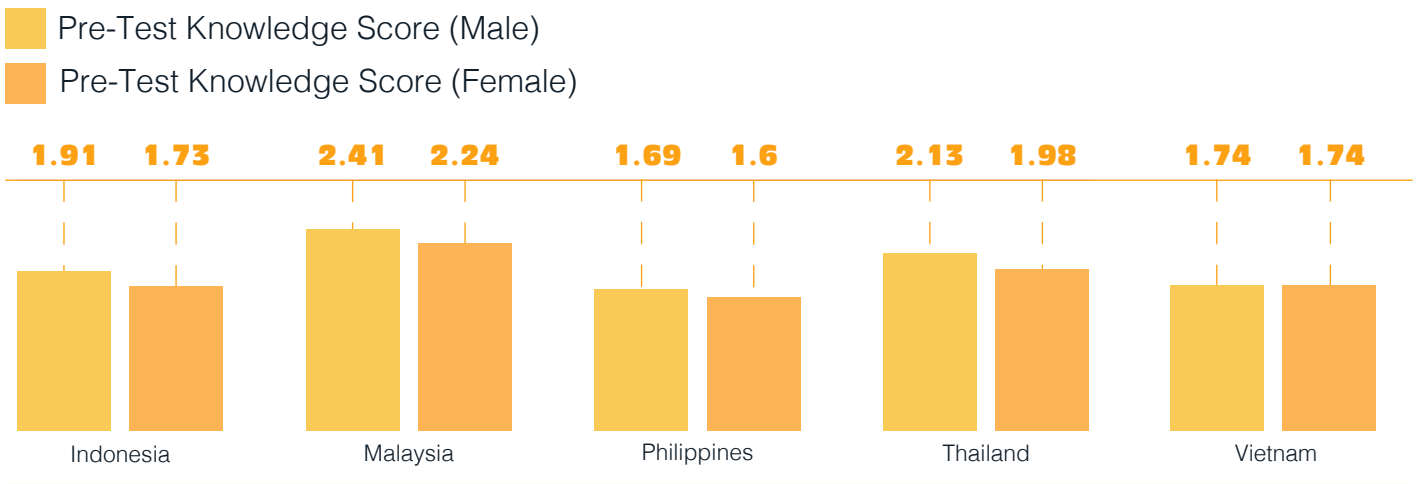


Figure 20 Post-Test Knowledge Scores, By Gender (Max Score = 3)

Statistically Significant Gender Differences By Gender In Indonesia, Malaysia, Philippines and Thailand

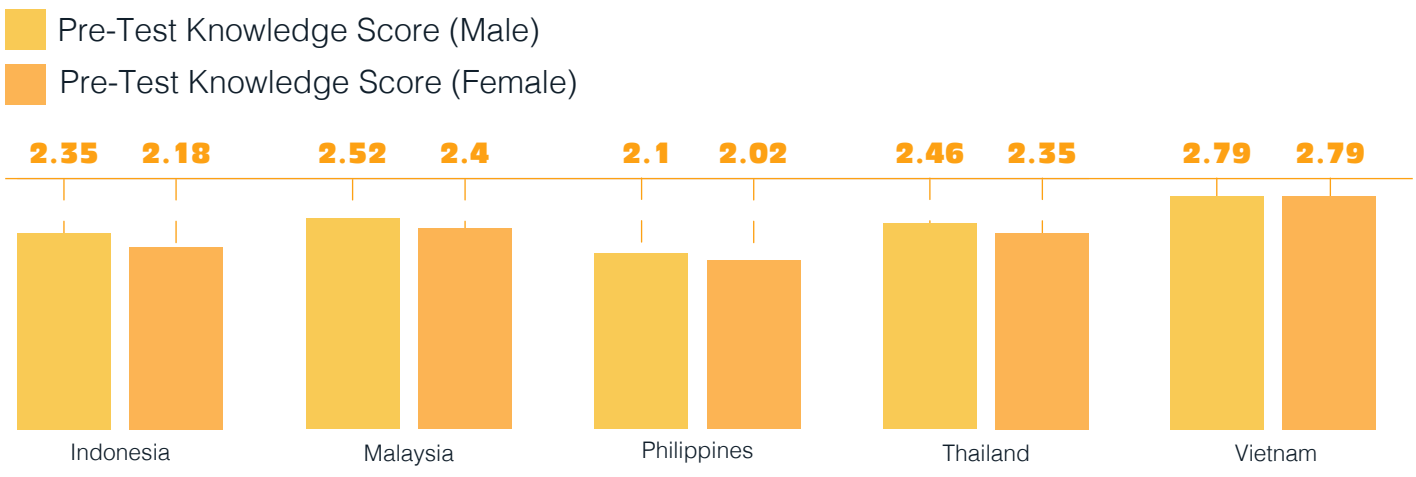


Figure 21 shows that the improvement in scores varied by country. This reflects several factors, including the initial starting point. Since students in Malaysia started off with significantly more knowledge than those in other countries, they could not achieve such high improvements after participating.

The change between the pre- and post-tests (1) was significantly higher amongst boys than girls in Malaysia and Thailand, whilst there were small differences in achievement by gender in the other countries that were not statistically significant. This shows that whilst girls continue to achieve more, boys appear to be gaining even more benefit from Cha-Ching in terms of financial knowledge.

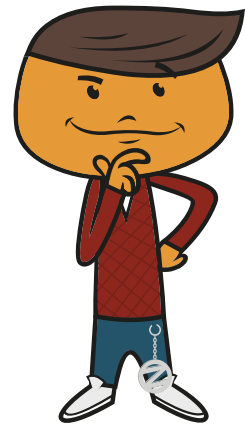
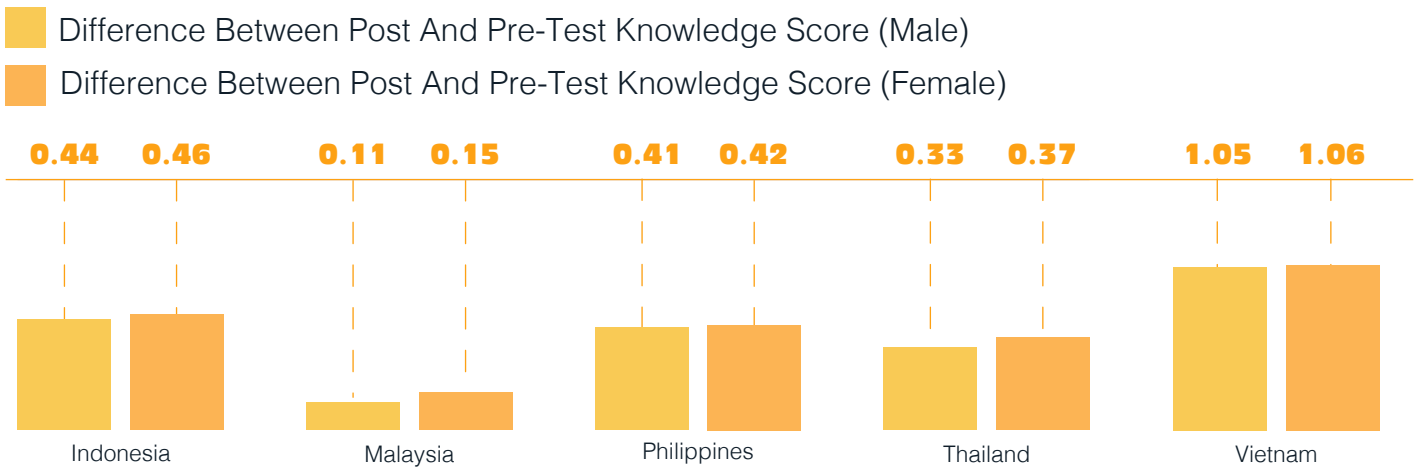


Figure 21 Difference Between Post and Pre-Test Knowledge Scores, By Gender
 Statistically Significant Gender Differences By Gender In Malaysia And Thailand



Student Attitudes

Several questions provide insights into the students' financial attitudes before and after participating in the Cha-Ching curriculum. Figure 22 shows that before participating, some attitudes were more commonly held than others, and that there were significant differences across countries. In general, students were particularly likely to associate earning with hard work, although more students in Malaysia agreed with the statement focusing on the four concepts covered in the Cha-Ching curriculum.

After participating, attitudes became far more positive across all countries, although there remained some reticence in terms of donating, relative to the others.

Figure 22

Positive Responses To Pre-Test Attitude Questions

Indonesia
 Malaysia
 Philippines
 Thailand
 Vietnam

Correct Response To The First Question is 'Donate Money, Time Or Items To Those In Need'

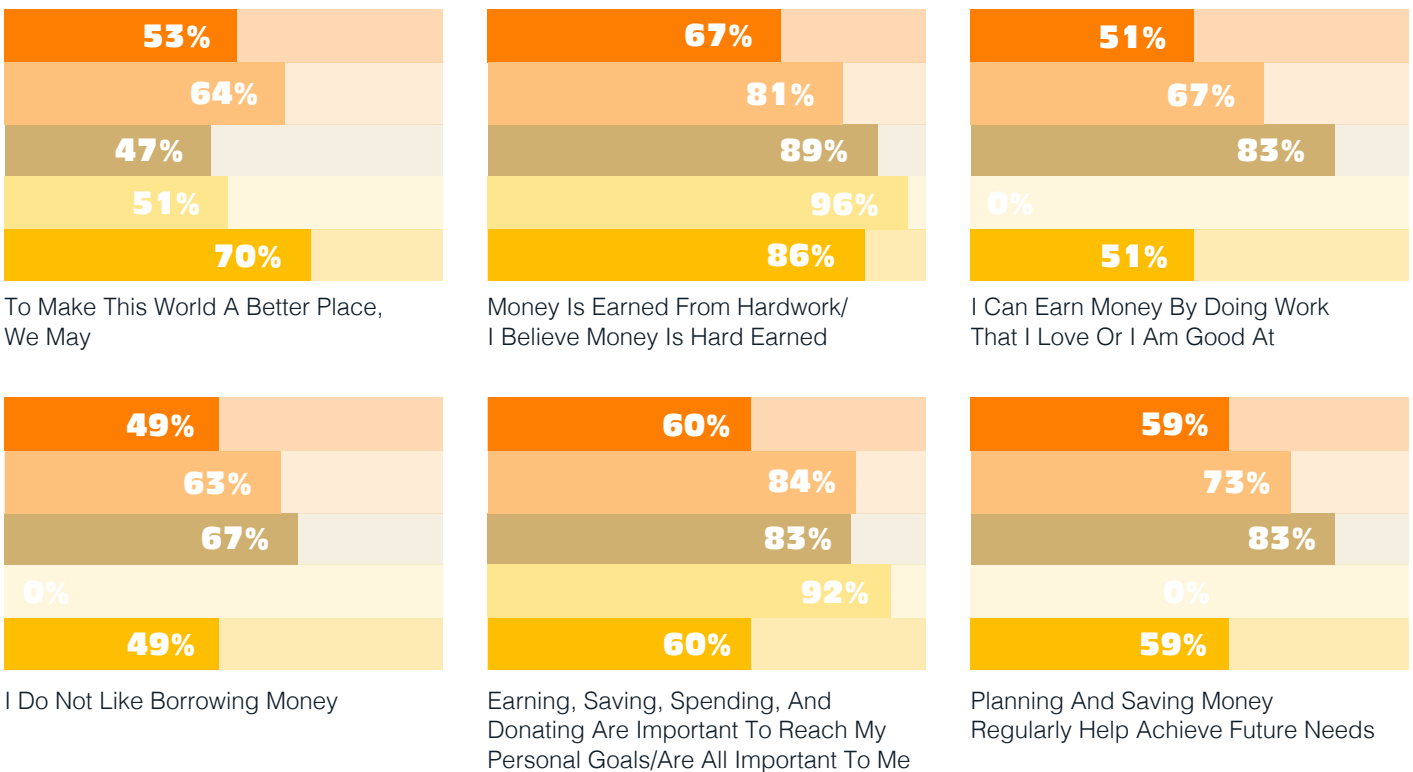
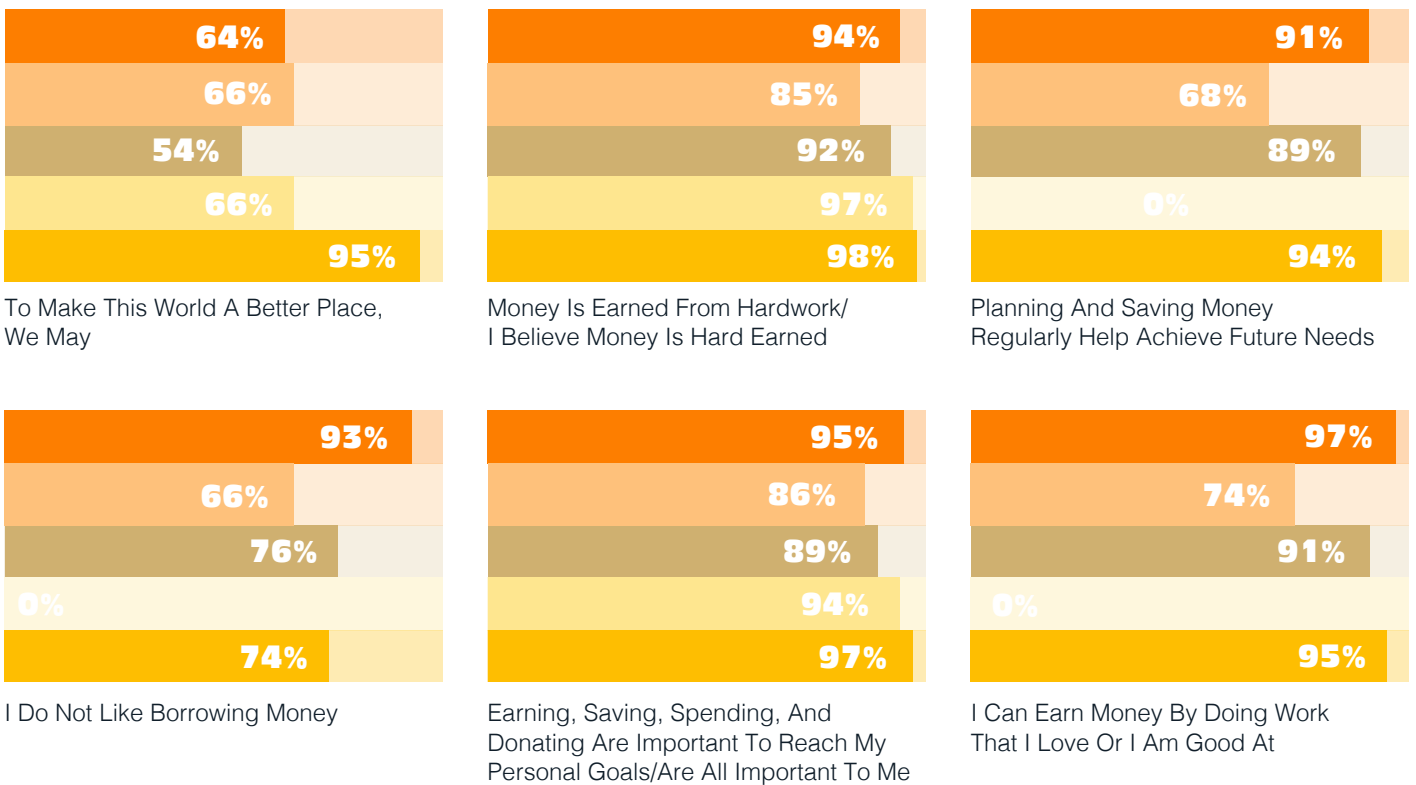


Figure 23
Positive Responses To Post-Test Attitude Questions

Indonesia Malaysia Philippines Thailand Vietnam

Correct Response To The First Question is 'Donate Money, Time Or Items To Those In Need'



As with the knowledge questions, it is possible to count the number of positive attitudes to create a score. This counts positive responses to the three questions focused on donating, hard work and the importance of earning, saving, spending and donating. The range in average pre-test scores is lower for attitude than knowledge but shows an increase at the post-test.

Before commencing the Cha-Ching curriculum, girls typically had slightly more positive attitudes towards the three topics than boys in each of the countries except Vietnam, which also had the lowest attitude score overall (Figure 24). This gender difference remained at the end of the six lessons, with both girls and boys showing increasingly positive attitudes. Furthermore, attitudes in Vietnam raised particularly steeply amongst both boys and girls to remain approximately equal.

Figure 24 Pre-Test Knowledge Scores, By Gender (Max Score = 3)

Statistically Significant Gender Differences in Indonesia, Malaysia, the Philippines and Thailand.

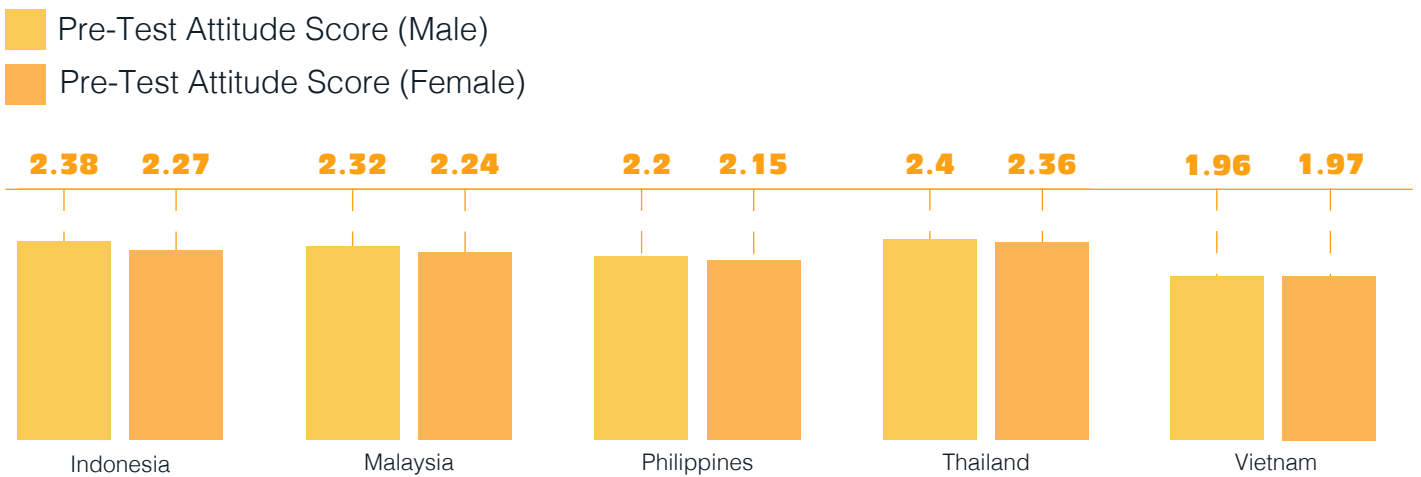


Figure 25 Post-Test Knowledge Scores, By Gender (Max Score = 3)
 Statistically Significant Gender Differences By Gender In Indonesia, Malaysia, the Philippines and Thailand

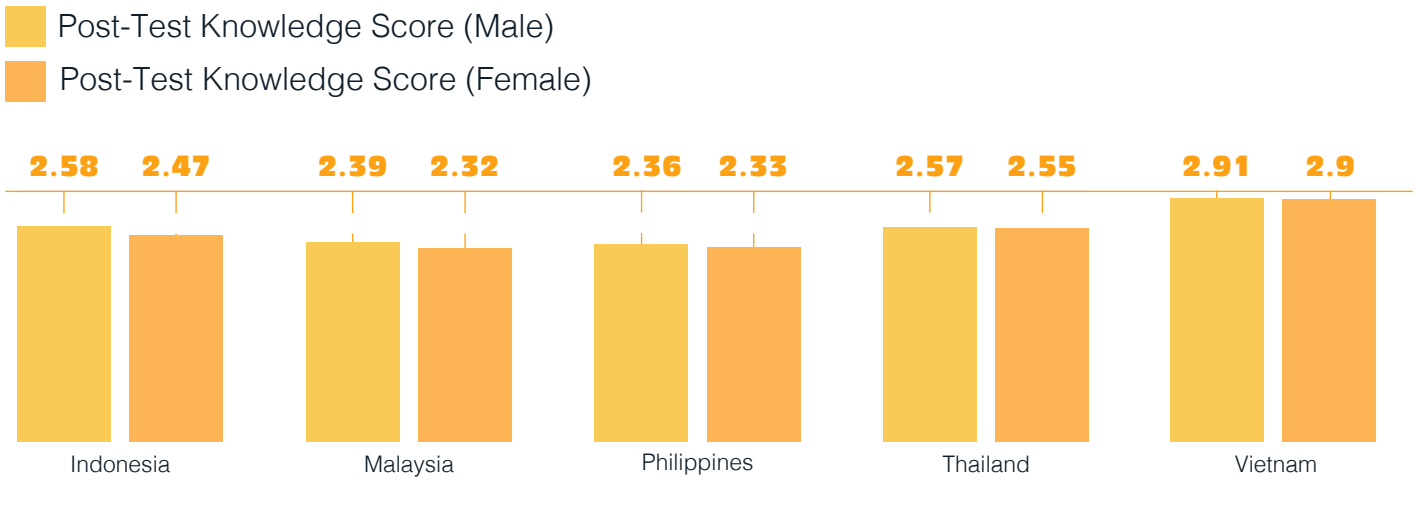
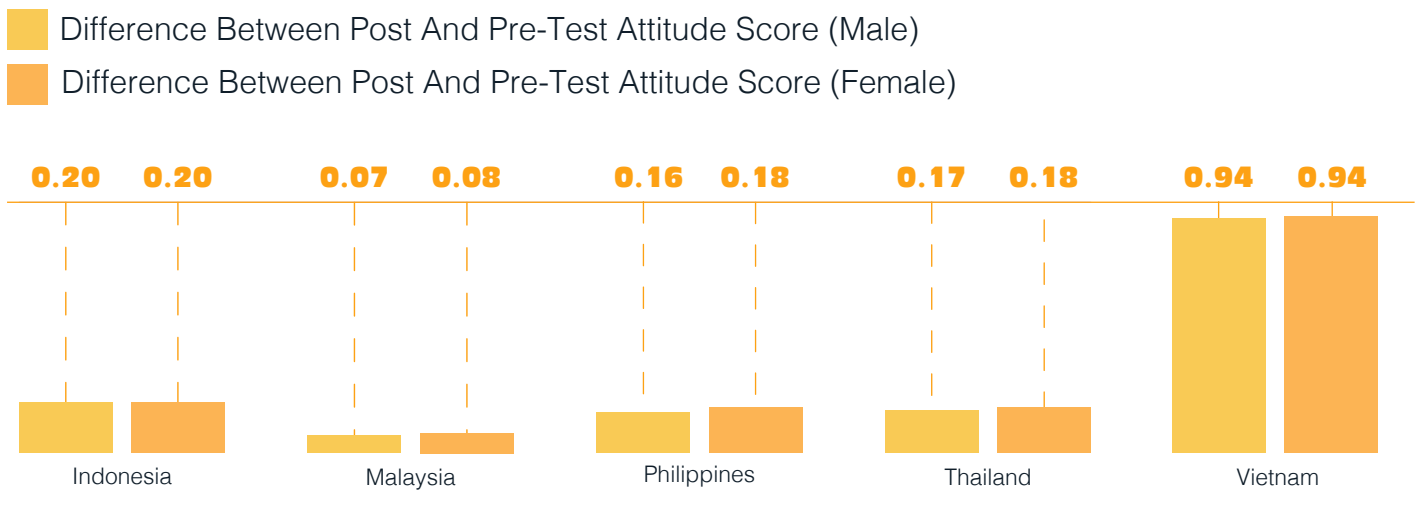


Figure 26 indicates that the increase in positive attitudes occurred equally amongst girls and boys and confirms that the magnitude of change varies massively across countries. Improvements were particularly large in Vietnam, where the average increased by almost a third of the overall score. In the other countries, and especially in Malaysia, students were far less likely to change their attitudes because of participating.

Figure 26 Difference Between Post- And Pre-Test Attitude Scores, By Gender
 None Of The Gender Differences Are Statistically Significant At 0.01



Student Behaviour

The questionnaire includes a range of questions relevant to student behaviour. Questionnaires can only ever give an approximate idea of behaviour, as they record people's own reports rather than independent observation. Additionally, there are only a few financial behaviours that students are likely to exhibit, as they are not yet responsible for a wide range of financial decisions. Nevertheless, with such a large dataset the responses provide valuable insights.

Figure 27 shows that almost all students were saving before participating in the Cha-Ching curriculum, especially in Indonesia and Thailand. Over 90% of students in Indonesia said that they cut back on spending to save, and 90% of students in Thailand claimed to spend on needs before wants, perhaps indicating that they had learned these behaviours at home. Activity around donating was the most consistent across countries, which is interesting given the range of attitudes towards this reported above.

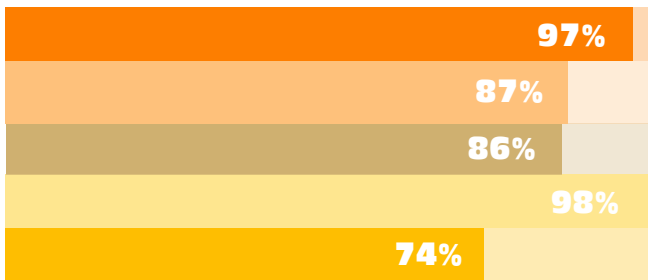
Figure 28 indicates an improvement in behaviour, despite the limit imposed by the high initial levels. Students in Vietnam became more likely to save than they had before participating in the six lessons, although still less likely than those in some of the other countries. They were also much less likely to report spending all of their money.



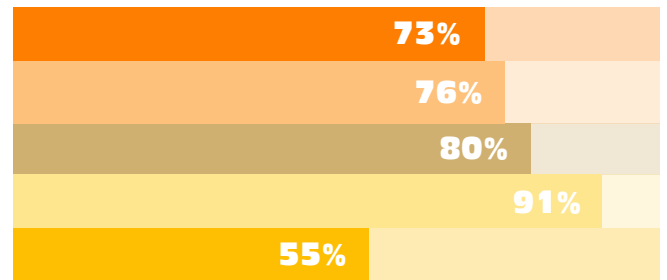
Figure 27
Agreeing With Pre-Test Behaviour Questions

Indonesia Malaysia Philippines Thailand Vietnam

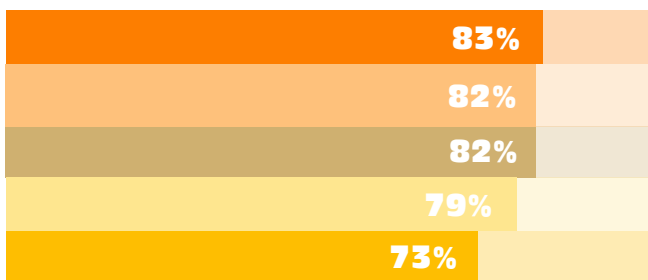
Student agrees that they:



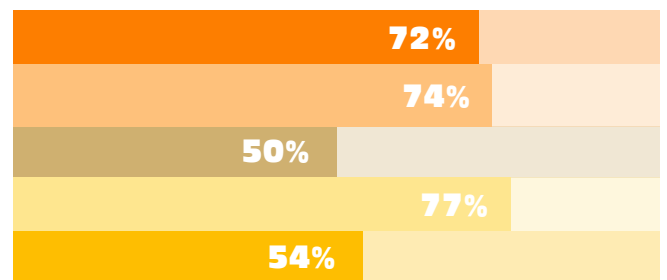
...save money to buy things they need or attain future goals



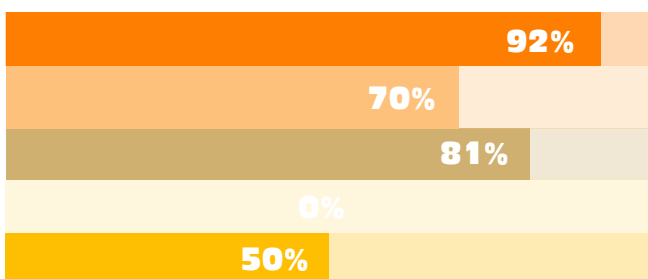
...spend money on needs before my wants



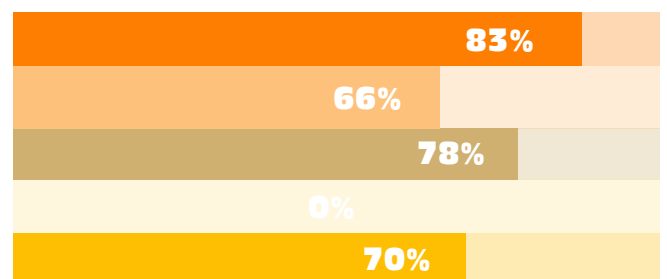
...give time, money, talent or items to the needy



...do not spend all their money or spend it quickly



...spend less in order to save more



...know the cost of the things they buy

Figure 28

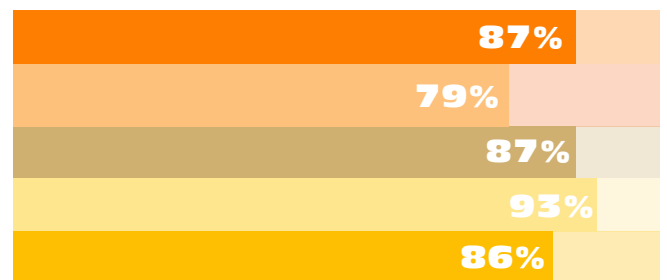
Agreeing With Post-Test Behaviour Questions

Indonesia Malaysia Philippines Thailand Vietnam

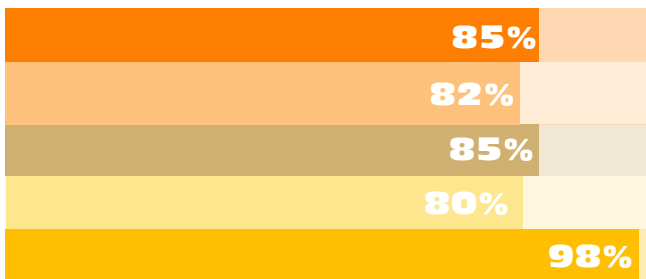
Student agrees that they:



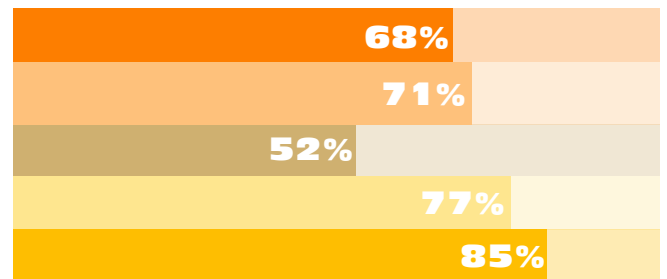
...save money to buy things they need or attain future goals



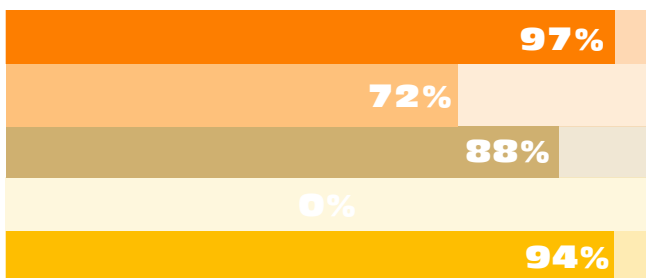
...spend money on needs before my wants



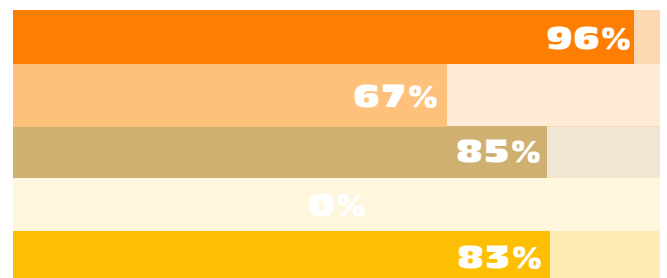
...give time, money, talent or items to the needy



...do not spend all their money or spend it quickly



...spend less in order to save more



...know the cost of the things they buy

Note: The responses are reversed before analysis if necessary, to indicate positive behaviours. However, the negative wording may have made it harder for some students to understand the question.

As with the other questions, it is possible to count the number of positive behaviours to create a score.²⁹ This counts positive responses to four questions asked each year, looking at students who reported they were not spending all their money or spending quickly, spending on needs before wants, saving for the future and donating to the needy.

As anticipated from the analysis above, pre-test scores were already relatively high. Students in Vietnam had the lowest starting point, whilst those in Thailand reported the largest proportion of positive behaviours. By the post test, students in Vietnam had overtaken all other countries including Thailand.

The scores show that girls were slightly more likely to exhibit a range of positive behaviours before participating in the Cha-Ching curriculum in every country except Vietnam (Figure 29) and that they continued to have higher scores after participating (Figure 30).

Figure 31 provides additional insights, showing that girls in Indonesia and Malaysia were more likely than boys to increase their score over the period of participation. However, the largest increase for both boys and girls occurred in Vietnam.



²⁹ Behaviour score based on 4 questions in Figure 27: Save money to buy things they need; Gives money time etc. to the needy; Does not spend all, or quickly.

Figure 29 Pre-Test Behaviour Scores, By Gender (Max Score = 4)

Statistically Significant Differences in Indonesia, Malaysia, the Philippines and Thailand.

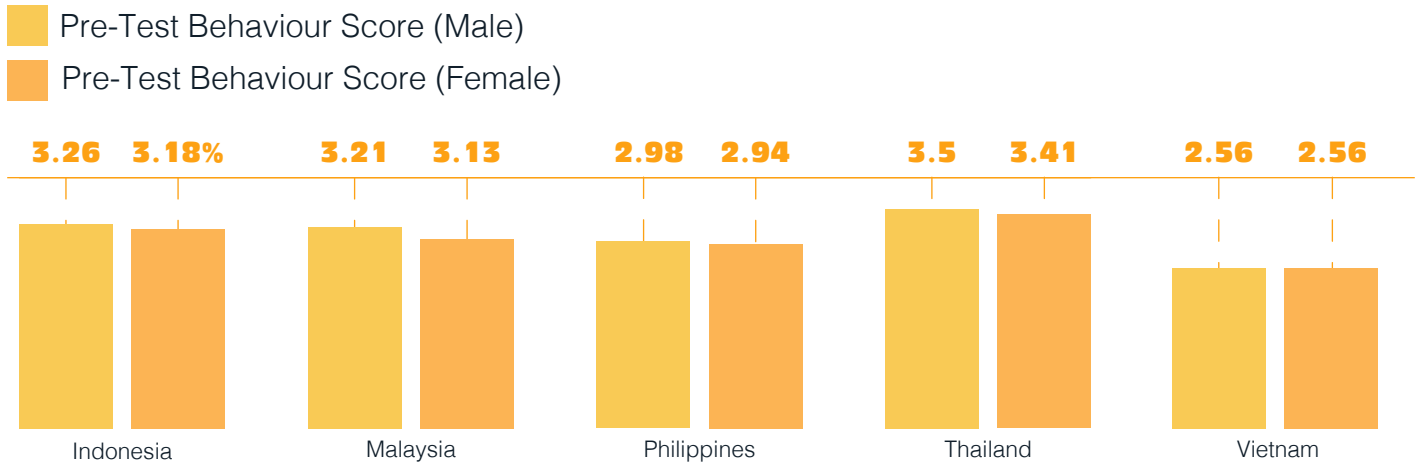


Figure 30 Post-Test Behaviour Scores, By Gender (Max Score = 4)

Statistically Significant Differences in Indonesia, Malaysia, the Philippines and Thailand.

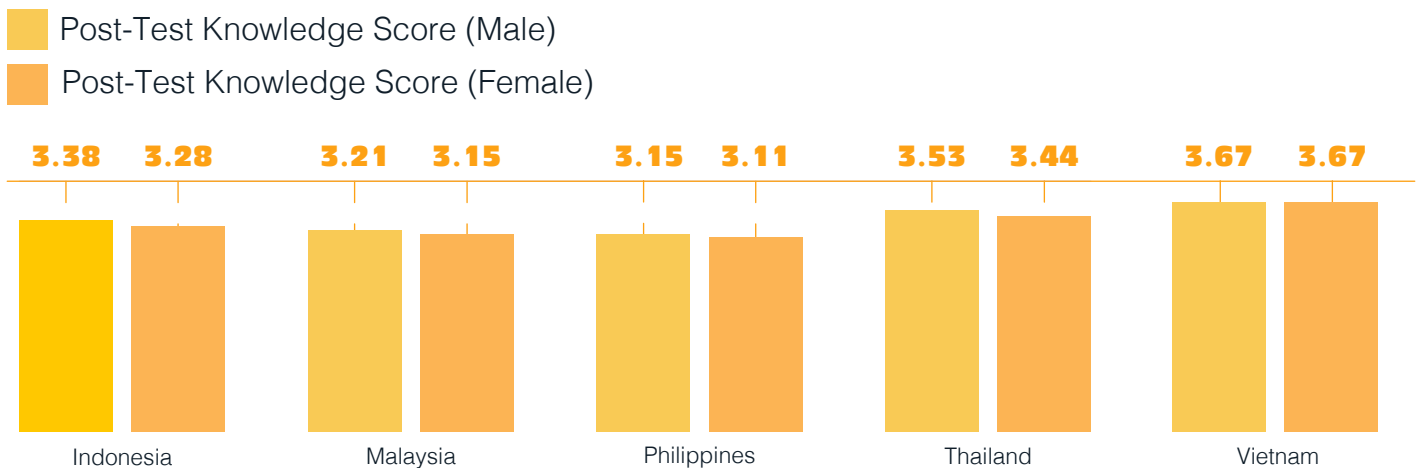
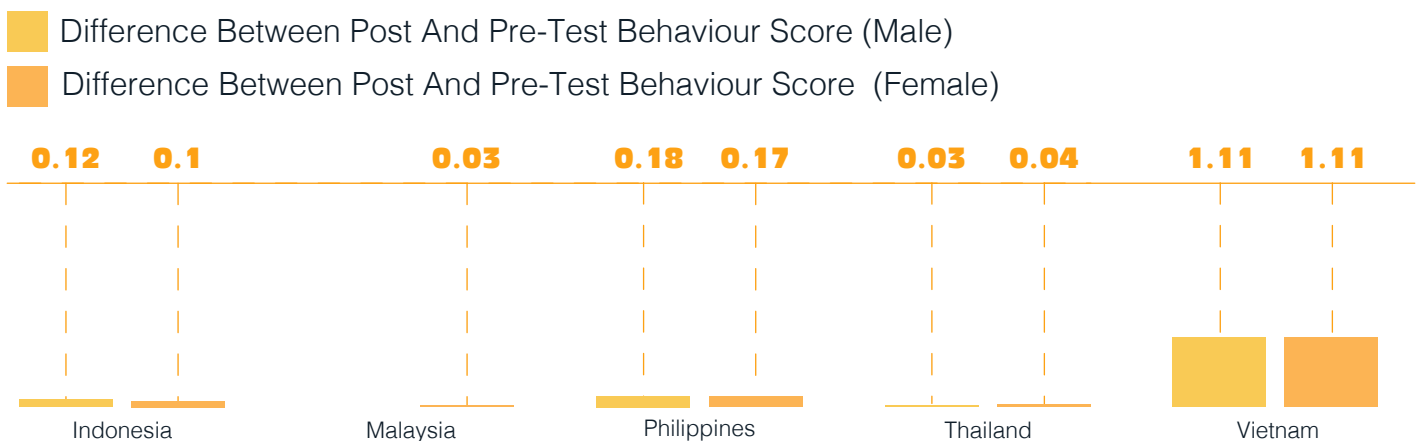


Figure 31 Difference In Post- And Pre-Test Behaviour Scores, By Gender

Statistically Significant Differences In Indonesia And Malaysia



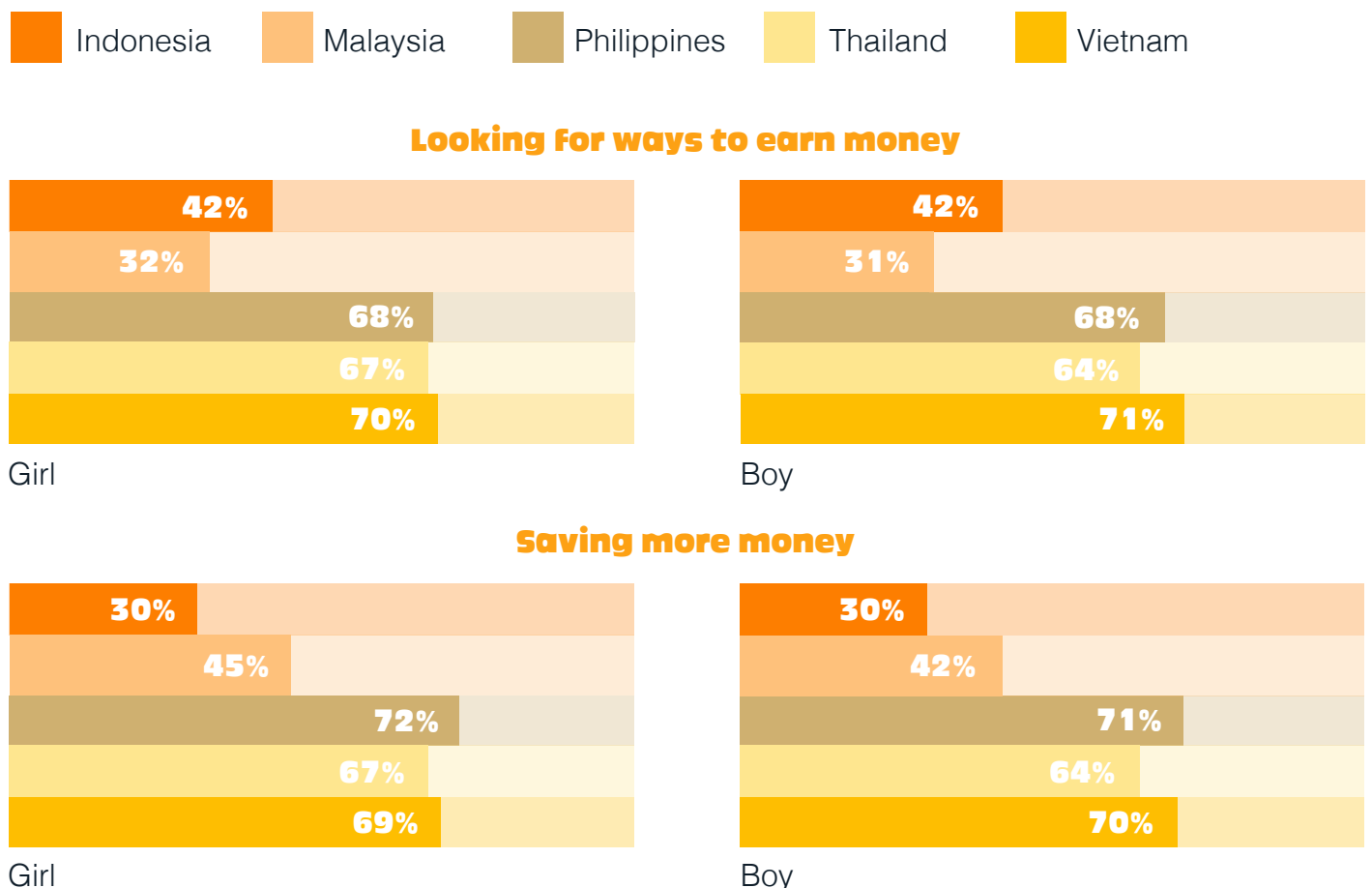
Self-reported Changes In Behaviour

At the end of the six lessons, students were asked whether they had changed their behaviour around earning, saving (Figure 32), spending, or donating (Figure 33). The analysis highlights some big differences across country, and much smaller differences by gender.³⁰

Students in the Philippines, Thailand and Vietnam were particularly likely to report behaviour change across each of the four concepts, although with some variation by concept.

These findings are somewhat different from the pre- and post-test responses and changes measured in Figure 31. This may simply suggest that students felt they should do things differently and so responded accordingly (a sign that they had learned what the ‘correct’ behaviours would be), or the focus on change, rather than current behaviour, may have encouraged them to see how they had started to do things differently (a sign that they had changed behaviour). Qualitative research would be useful to explore this in more detail.

Figure 32
Looking To Earn And Saving More, By Gender and Country

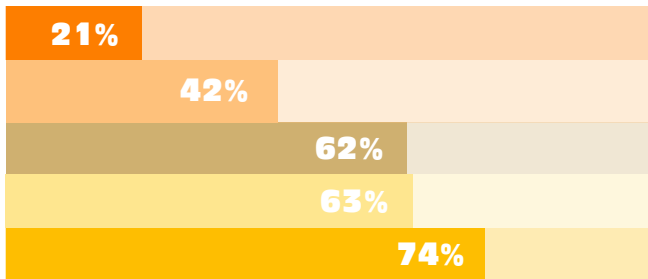


³⁰ The option to tick ‘all of the above’ reduces some of the variability across responses to different components.

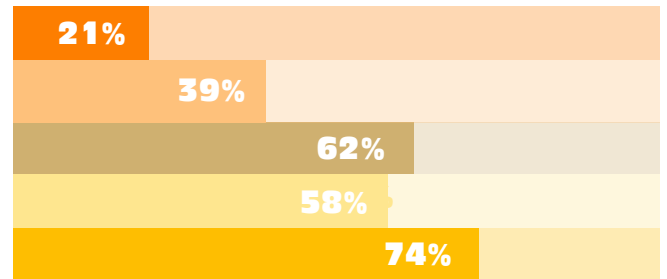
Figure 33
More Careful And Donating More, By Gender and Country

Indonesia Malaysia Philippines Thailand Vietnam

More careful about the way I spend money

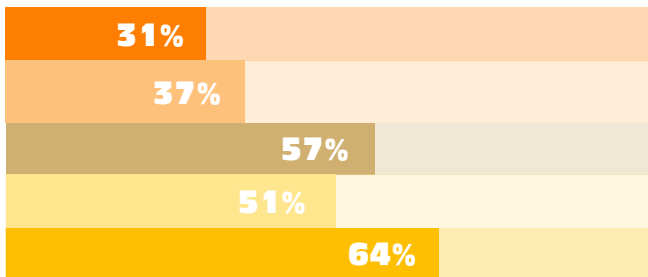


Girl

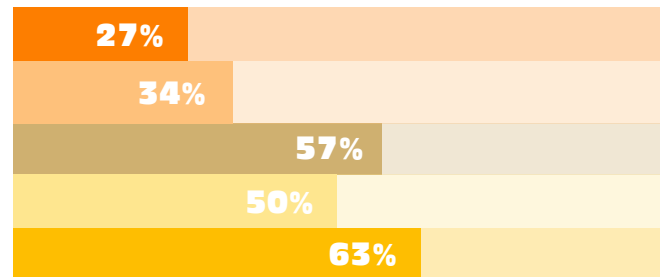


Boy

Donating money, time or items to those in need



Girl



Boy

Student Experiences

Several questions were included in the post-test questionnaire to explore whether the Cha-Ching curriculum provided a positive experience. Across all the questions, at least 95% of students rated their experiences as positive, and there is almost no observable difference across gender.³¹ This finding is reassuring for Cha-Ching and rewarding for the teachers and schools participating.



³¹ Since there is almost no variation, the detailed results have not been reported.

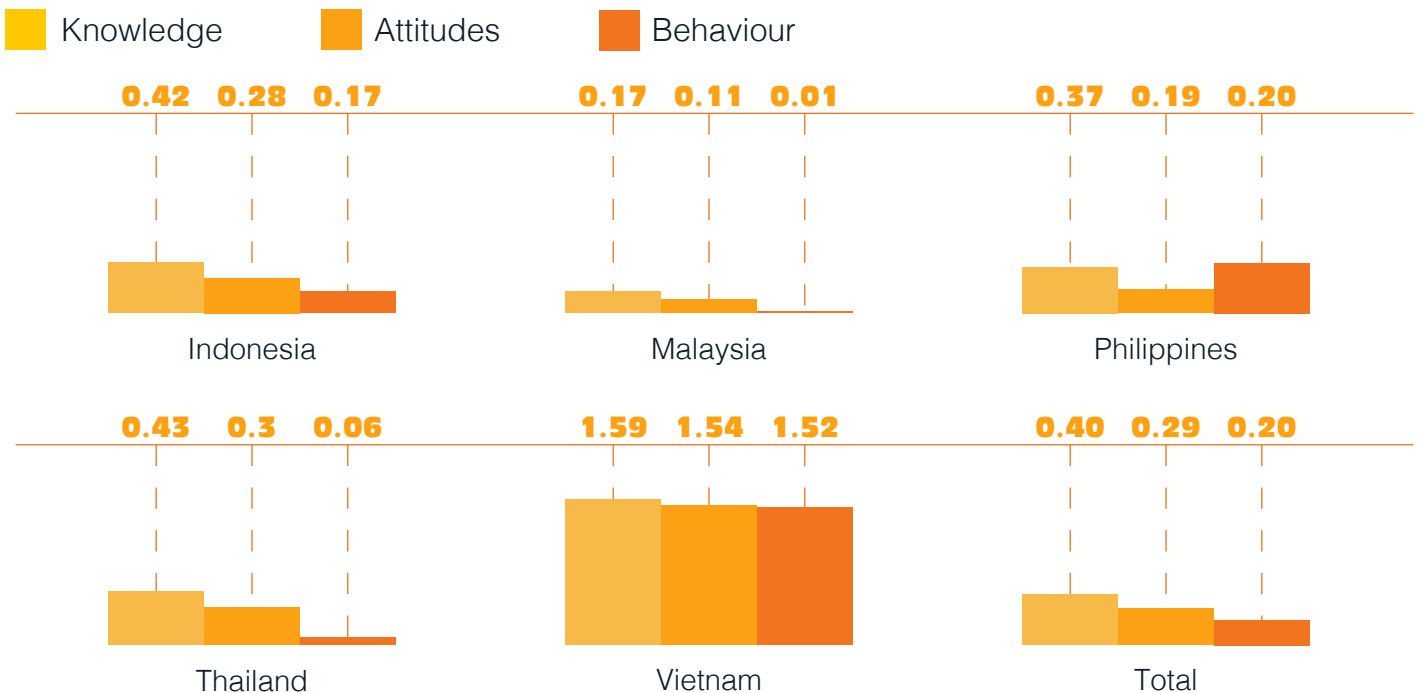
Evidence Of Impact

The descriptive analysis above has shown clear differences in outcomes across countries. Some of these differences can be further explored using statistical techniques. Whilst there is no way to guarantee that the findings show evidence of impact, the amount of data and consistency in the findings across various tests leave little doubt that students know more, and change their attitudes and behaviour after completing the Cha-Ching curriculum. Given the similarity in findings across time and place, it is unlikely that there is another explanation for such a difference in pre- and post-scores.

The education literature typically talks about impact in terms of effect sizes.³² Figure 34 shows the effect size for each country based on the scores for financial knowledge, attitude and behaviour presented above. These are in keeping with the effect sizes typically found in developed countries. The most widely quoted meta-analysis reports that ‘effect sizes on financial knowledge are significantly larger in developed economies (0.39 SD) relative to developing economies (0.14 SD).³³ This indicates that Cha-Ching is having a bigger effect on financial knowledge than would be anticipated in developed countries.

Figure 34

Average Number of Students Taught By Each Teacher



³² Effect sizes measures the standard deviations between two means, and provides a measure that is comparable across studies.

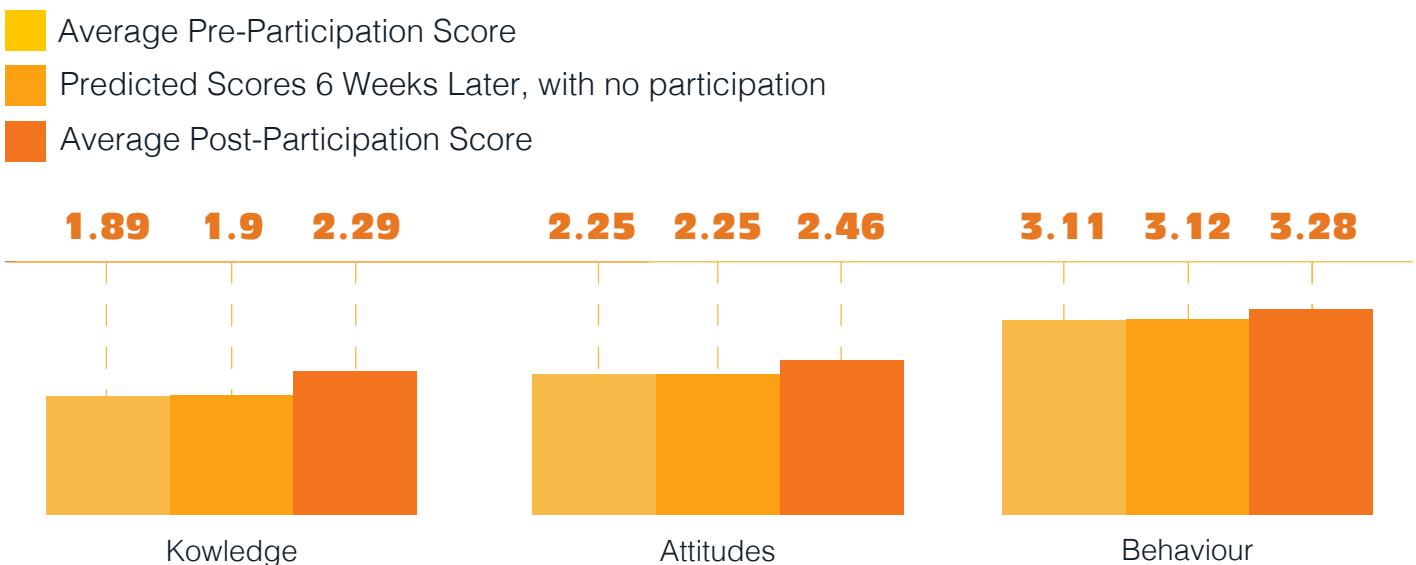
³³ Kaiser, Lusardi, Menkhoff and Urban (2020) Financial Education Affects Financial Knowledge and Downstream Behaviours.

It is possible to predict the knowledge, attitude and behaviour that each student would have had in the absence of participating in Cha-Ching by using the results of the analysis on pre-test scores. The Cha-Ching curriculum is typically implemented over a six-week window. By calculating the difference in pre-test scores that can be accounted for by age, it is possible to estimate how those scores would change over a six-week period if other things remained constant.³⁴ Figure 35 shows that the predicted changes are very small, and much smaller than the changes that actually occurred. In other words, the Cha-Ching participants increased their levels of knowledge, attitude and behaviour more than would be reasonably expected in the course of half a school term (6 weeks).



Figure 35 Predicted And Actual Changed

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 for age in months, gender and country. Age in months is significant and positive in all regressions.

³⁴ This approach assumes that the students would not have learned something else that helped them to answer the questions. Given that Cha-Ching is meeting an otherwise unmet need for financial education in schools, and the time period is relatively short, this is a reasonable assumption.

Further analysis of the student results shows that, even after taking into account the different ages of the students and their pre-test scores, there are some significant differences in outcomes.

Regression results summarised in Figure 36 indicate that, other things being equal, there is a strong relationship between financial knowledge before and after participating in the Cha-Ching programme. Initial levels of attitudes and behaviour also positively associated with higher post-test knowledge scores, although with a smaller effect. Other things being equal, boys' post-test scores for knowledge were lower than girls', and older students gained more knowledge than their younger counterparts, other things being equal. After controlling for other factors, knowledge increased more in 2019-20 than in previous years.

There is also a clear association between financial attitudes before and after participating in the Cha-Ching programme and a weaker relationship with pre-test knowledge scores and behaviour, although with a smaller effect. Other things being equal, boys' attitude scores in the post-test were lower than girls', and younger students saw a larger improvement. Other things being equal, test scores increased most in 2020.

Similarly, there is a positive relationship between financial behaviour before and after participating in the Cha-Ching programme. Initial scores on attitude and knowledge are also associated with higher post-test behaviour scores, although with a smaller effect. Other things being equal, boys scored less than girls; there was no significant difference by age.

Differences across year show that, once pre-test scores and other factors are taken into account, post-test behaviour scores were lower in 2019-20.



Figure 36

Variations In Knowledge, Attitudes And Behaviour Test Scores After Participating in Cha-Ching

Knowledge	High knowledge scores	Low knowledge scores
	<ul style="list-style-type: none"> - Students participating in 2019-20 - Older students - Students with higher before test on knowledge, attitude and/or behaviour - Girls 	<ul style="list-style-type: none"> - Students participating prior to 2019-20 - Younger students - Students with lower before test on knowledge, attitude and/or behaviour - Boys
Attitude	High attitude scores	Low attitude scores
	<ul style="list-style-type: none"> - Students participating in 2019-20 - Younger students - Students with higher before test on knowledge, attitude and/or behaviour - Girls 	<ul style="list-style-type: none"> - Students participating prior to 2019-20 - Older students - Students with lower before test on knowledge, attitude and/or behaviour - Boys
Behaviour	High behaviour scores	Low behaviour scores
	<ul style="list-style-type: none"> - Students participating prior to 2019-20 - Students with higher before test on knowledge, attitude and/or behaviour - Girls 	<ul style="list-style-type: none"> - Students participating in 2019-20 - Students with lower before test on knowledge, attitude and/or behaviour - Boys

Note: When there is no mention of year of implementation, age, gender or before-test scores, there were no significant differences in outcomes by these factors.

Significant at 0.01. Adjusted R² knowledge 0.13; attitude 0.09; behaviour 0.14.

Differences Across Schools

Additional regressions (not shown), taking into account the number of pupils, average age of students in months and proportion of boys in each of the participating schools, show that post-test scores for knowledge, attitudes and behaviours are higher in schools with older students; behaviour scores are also higher in schools with more participating students. Knowledge is lower in schools where there is more variation in age.

Incorporating the school level data with student data shows that characteristics of the school has significant impact on the students' outcomes. 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 at the school level provides interesting insights into school level dynamics. Taking into account their own age and gender, 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 but again, more boys is positively associated with outcomes, as are average pre-test attitudes and behaviours.

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

These results indicate that whilst boys have lower scores other things being equal, their scores are somewhat better when they are being taught among more boys. It also appears that there is a general advantage for students to be in schools with more participants.



Section 3. Suggestions For The Future

Curriculum Content

This section draws on the descriptive text, analysis and reviewer observations provided above to make suggestions for the future. It focuses on the curriculum and teaching first, before discussing the learning, since suggestions for content and delivery will hopefully influence the learning. Conclusions follow in Section 4.

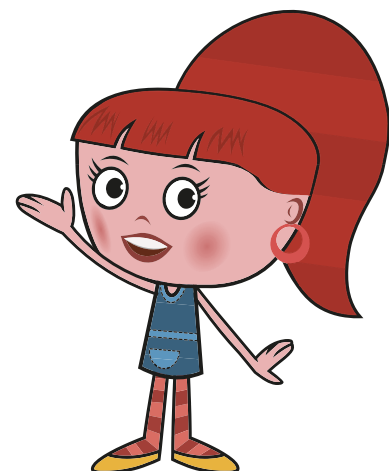
The overview of Cha-Ching and other curricula has highlighted ways in which some of the core components of Cha-Ching could be expanded on or slightly edited during future revisions, as discussed below.

Concepts That Are Core To The Cha-Ching curriculum

Money

It is quite common for educators to start with the basic concepts of money. Cha-Ching does this by introducing notes and the process of printing money at the mint. Activities in the Cha-Ching curriculum also include counting money and using it to pay people or make purchases. However, the Cha-Ching curriculum does not introduce real currency, something that is also mentioned in feedback from Cha-Ching teachers. This could be considered for future lessons.

The notes accompanying Lesson 1 point out that it discusses the mint because some young people think that money comes from an ATM. The video shows how the characters put money into the bank and take it out. This level of detail may be insufficient to teach younger students that the ATM will only give you money that is your own (ignoring the notion of credit for this age group). Additional class discussion could address this.



Income/Earnings

On the one hand, the Cha-Ching curriculum simplifies the discussion around income and earnings more than some other curricula, but on the other, it takes a strong future perspective, focusing on earnings rather than current income. Given the target age group, it may be helpful to draw on the approaches taken by JumpStart or in Hong Kong and explore other ways in which people (especially children) receive money, to include income such as ad-hoc pocket money, regular allowances, or gifts.

Spending

Some curricula/ competency frameworks stress the fact that money that has been spent no longer belongs to the person that spent it. It would be interesting to know whether Cha-Ching students are aware of this. If not, it could be built into future lesson plans.

The CFPB definition of budget could also be useful for Cha-Ching teachers and their students: A budget is a plan for using income productively, including spending, sharing, and saving.

The CFPB approach acknowledges that most people's limited financial resources make it impossible to buy everything: People must make choices about and prioritize the goods and services they buy because they can't have everything they want. This is covered in Cha-Ching but could be emphasized more.

Savings

It is widely agreed that saving is a fundamental component of financial literacy and an important concept for young people to learn as soon as possible. The review of various curricula shows that there are many ways of defining and discussing this concept. Based on these examples, it may be useful to adjust the Cha-Ching definition for saving to be more aligned with the target age group. For example, CFPB state: The goal of savings is to set aside income for future spending. The CEE definition of saving is: the part of income that people choose to set aside for future uses, and the approach taken by Sesame Street stresses patience: One important part of learning to save is learning to wait.

Cha-Ching lesson plans could also incorporate a 'pay yourself first' message. This would be consistent with the recommendation to save one dollar in 10 as a useful rule of thumb.



Concepts That Are Currently Given Less Emphasis In The Cha-Ching curriculum

The overview of other curricula has also highlighted various other topics that may be worth taking into account. These can be summarised as follows:

Digitalisation

The extent to which digital finance is covered across curricula varies, but it is clear that it is an issue that will continue to grow in the future. Cha-Ching offers a modern and vibrant approach to education that draws on video and digital tools to support the core teaching. However, it does not currently focus on the role of digitalisation in money management. It is beneficial to look at emerging good practices in this area to identify potential curriculum content for the future.

The ITU framework provides a general tool for thinking about digitalisation. Whilst it is too advanced to be applied directly, it illustrates the range of issues that today's young people may need to understand as they reach adulthood. The Wisconsin standards provide an example of how some of these issues may be addressed in an age appropriate way.

Numeracy

The Cha-Ching curriculum illustrates that excellent money management is about knowledge combined with positive attitudes and behaviours. As some of the classroom activities identify, numeracy is a foundational skill. However, this is not currently stressed in the teaching materials. When students use number order, weight or volume to make a practical decision about which product to buy, maths can feel less abstract and more interesting. With careful teaching, the existing Cha-Ching curriculum could further emphasise the practical applications of maths and the pleasure of being able to use numbers to solve practical problems.

Protecting Things Of Value

Students are likely to have something that is precious to them. This may be something with low monetary value but high sentimental value such as a beautiful shell or a family photo, or something that would be costly to replace such as a bicycle or guitar. They are therefore likely to be familiar with the idea of taking care of things that have value. This concept of personal assets is covered in other curricula such as the Sesame Street Finances for Kids: If something is special to a child, it has value to her, and JumpStart: There are ways to keep possessions, including money, safely at home and other places. It could also be usefully highlighted in the Cha-Ching curriculum to encourage positive behaviours.

Teacher Feedback

“Involve mathematics teachers”
(MLY)

Teaching

The Cha-Ching curriculum is comprehensive and teaching materials are helpful and appealing. However, as they were developed several years ago, now is an ideal time to consider various edits and additions. The following suggestions are drawn from the analysis described above, teacher feedback, and general observations during the review process.

The Teacher Guide

Introduce Financial Literacy

The teaching guide assumes a certain level of interest in teaching economics or social studies among teachers, but it does not currently introduce financial education or financial literacy. A few lines of motivational text to explain the reason for focusing on money matters with young children would not only enthuse teachers but also provide them with a short summary that can be used to discuss the purpose of the lessons with parents and other interested adults. For example, the text might say 'Young people today are bombarded with adverts trying to encourage them to spend money. The Cha-Ching programme helps them to realise that spending is not the only option they have, by showing them all the ways they can use money wisely'.

Create More Cheat Sheets

The first lesson plan includes a 'cheat sheet' describing the main elements of the video story. Teachers may benefit from a similar approach for every lesson. Cheat sheets may also be useful for students who find it difficult to follow the storyline when it is sung, perhaps because they are speakers of other languages or hearing impaired. Some teachers noted that this was an issue in their feedback. The cheat sheet could be called the 'song sheet' to appeal to the students and avoid using the term cheat which has negative connotations. Referring to them as song sheets is consistent with the theme of the Cha-Ching videos.



Suggest Alternative Responses

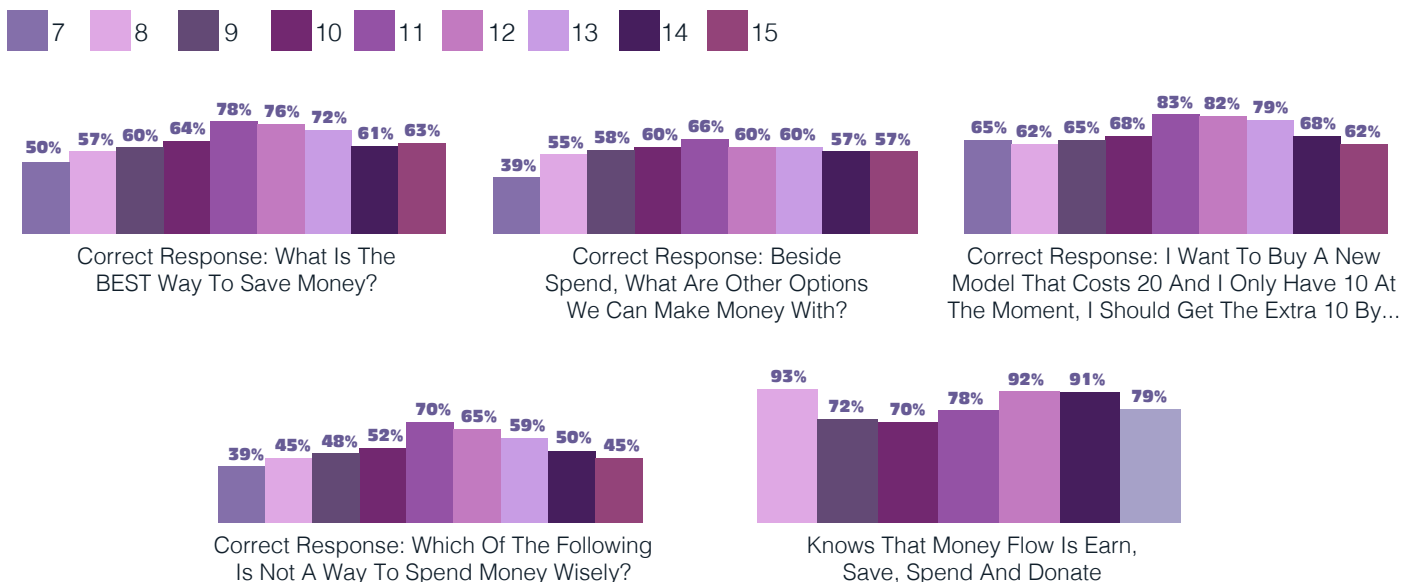
Teachers have a wide range of teaching skills to draw on when managing class discussions, but they may not have the breadth of knowledge to deal with all of the possible responses that children may give. For example, when talking about where money comes from, children may respond ‘I get money for my birthday’ or they may say that ‘nobody works in my home’. Some may ask follow-up questions such as ‘how do my grandparents pay for things now that they don’t work?’. The teacher guide provides desirable answers but doesn’t prepare teachers for diverse student responses, leaving the teacher to direct the conversation towards the intended response. Teacher training can address this, but for teachers using the materials without instruction, or returning to them after a year or two, it may be helpful to make further suggestions or offer links to videos of real teachers taking classes to show how they deal with such situations.

In addition, given the novelty of this topic for many teachers, it may be helpful to provide teachers with financial literacy materials for their own use. Financially confident teachers with the skills to build their own financial well-being are likely to feel better prepared to support their young students.

Think About Differences Among Students

The Cha-Ching curriculum reaches students from all walks of life, and across different age groups. It is important that teachers can tailor their teaching to the needs of their own class. For example, Figure 37 reports the percentage of students across the five countries giving correct answers to various knowledge questions according to their age. It shows the difficulty in developing a curriculum that is appropriate for all participating students across a number of countries. The potentially surprising results are clearly driven by several factors besides the student’s age. Not all countries teach the curriculum to the same age group or school grade; and outcomes vary across countries. It also appears that some of the older students may have been taught with younger children because they are not achieving the same grades as their own peer group.

Figure 37
Pre-Test Knowledge By Age



Almost all the teaching materials and student workbooks target a specific level of understanding and experience; just one lesson (lesson 3) includes recommendations for different age groups. The lesson plans could instead highlight the most appropriate discussion questions according to complexity and suggest stopping after asking a proportion of them if working with younger children.

It is also possible that the take-home tasks are difficult for younger students; this is certainly something that was mentioned by teachers in various countries. This could impact on the overall learning.

More able students and those who have seen the videos on TV may also benefit from links to additional videos, games and comics that support the topic covered in each lesson. These could be listed in the student workbooks and teacher guide.

TEACHER FEEDBACK

“Use the language that pupils can understand with minimum guidance” (MLY)

“This course it’s hard for primary school” (TH)

“Simplify the Take Home Activities as students have difficulties in accomplishing the tasks” (MLY)

“No need Take Home Activity” (MLY)

Reduce The Prep Time

Teachers need to prepare carefully before each lesson, especially the first time they deliver the curriculum. This includes watching the video, learning the terminology, preparing the worksheets and activities, and gathering equipment and materials that are not included in the pack such as audio-visual equipment and pencils. Some activities also require ideas from the teacher.³⁵ Now that the curriculum has been in schools for several years, experienced teachers could provide some guidance on how long the preparation takes, and how to do it most efficiently. If two or more teachers in a school are using the materials, it may be possible for them to prepare together, reinforcing their own learning and providing an opportunity to discuss the content.

³⁵ The 5th ‘work’ station in the Earn lesson, for example, should be developed by the teacher, although elsewhere the guide indicates that 4 workstations are sufficient.

Implementation

Most teachers responded positively to questions about the implementation of Cha-Ching. However, the analysis indicates that some would not wish to participate again. This is particularly true of older teachers and those working alone rather than in teams. It is therefore worth considering ways in which teachers can work together to implement the curriculum.

Continue To Be Flexible With Delivery Approaches For Now

The implementation is designed to take 45 minutes a week for six weeks. It appears that some of the lessons could have enough material to be continued over a second period/week. Some teachers note that 45 minutes is not long enough. However, despite the intensity of the programme, other teachers suggest that they would like to run it all over a couple of days rather than several weeks, and some also suggest bringing together bigger groups. This is an important reminder that financial education is not part of the core curriculum. Continued discussion with Ministries of Education and widespread recognition of the value of Cha-Ching may change this in the future and reduce the pressure on teachers to squeeze financial education into their existing schedule.

Delve Deeper Into The Videos

The videos cover a large amount of valuable information. It is quite likely that some students will initially focus on elements of the overall presentation such as the music, the colours, the clothes of the participants rather than the storyline, particularly if they are not following in their first language. Time permitting, it may be good for teachers to have a guide to tell them when to pause the video in order to discuss elements with the students and draw their attention to the important elements of the story. This could also offer an opportunity for more advanced students to predict what comes next, which will reinforce their problem-solving skills.

Make It Real

Teachers note that it would be useful for them to be able to use national currency in activities. This would help students to relate better to the materials and embed them in the country context. It is also helpful in the context of handling familiar numbers – transactions in some countries require confidence with large numbers but may not build familiarity with smaller denominations. This suggests that each country should have its own activity pack, with tailored materials.

Remove Unnecessary Content

The teacher guide identifies a range of skills that students use in each class. Currently, these are left undefined. It is unlikely that they will be understood in the same way by teachers across countries with different teaching experience. The teacher guide could be simplified by removing these, or they could be used in direct reference to the classroom activities, to make them more explicit.

Lesson 1

Lesson 1 is an important introduction to the 4 concepts. They are sometimes discussed as choices, which is a simplification that may lead to confusion. It could be interesting to consider other ways of describing this. One possibility is to imagine directions, perhaps controlled by a game controller: e.g. Forward=earn; left=spend; right=donate; pause=save. This may be easier for students to perceive.

The teacher guide includes some initial questions on the Mint and the printing press that may be difficult for teachers to cover without the context of the video.

It may also be useful to create an activity that plays with words related to the four key concepts since everyone uses language differently and comes across terminology in different ways. For example, words related to Earn might include 'pay', 'wage', 'income', whilst words related to Donate could include 'give', 'offer', 'charity', 'support'. This could be in the form of a simple word game, a treasure hunt or as part of a creative writing challenge.

The Lesson And Activities

The second part of the activity could benefit from additional information and content, as suggested below:

Students are instructed to count their money but nothing is priced, which misses an opportunity to discuss the decision making process.

Some of the choices they are offered are also 'no cost', such as visiting the elderly, which means that they did not need to earn money to make that choice. This could be confusing.

The 'Spend' area is labelled as 'items to spend', which may lead some students to think that they are paying with items, rather than paying for items. It appears that this aspect of the activity is also overlooked in the teacher guide which tells teachers to move to the Money Flow Activities once they have finished at the 5 earning stations.

Sensitivity and discretion should be stressed during these activities. Some students may become aware of how their own household status differs from that of their peers. If teachers are concerned about students focusing on their own lives, they could perhaps ask the students to imagine themselves at age 20, or to write about one of their heroes.

Lesson 2

Lesson 2 shows Zul wanting a toy car. There may be a plot inconsistency here (or perhaps it is a memory of his childhood). According to the general plot, he is old enough to make money in a band and is apparently saving to be a racing car driver. Is it plausible that he also asks his parents for a toy? The description of Zul suggests that 'he knows he needs to learn to save for success.' If he is saving to be a racing car driver (something that needs considerable savings), it is not a great idea for him to get distracted from his goal to buy a toy.

Defining Earn

The current definition suggests that services are somehow different from work, which is inaccurate. 'People earn money from work' could be used instead, or, if it is important to have a distinction between goods and services, 'Earn means to receive payment for something you do or sell'.

The Lesson And Activities

Since students may get allowances, pocket-money and money for doing chores, teachers could also be encouraged to discuss 'income' or talk about 'receiving money' when covering the Earn lessons.

Lesson 2 is intended to focus on earning, but in reality the lesson 1 activity covers this topic, both in terms of how earned money can be used, and through practical experience of doing tasks in return for income. It may be beneficial to swap the activities for lesson 1 and 2. The current activity for lesson 2 provides a number of opportunities to illustrate the difference between needs and wants.



Lesson 3

Defining Save

In English the word save is used in many related contexts. It often refers to a reduction in cost, and can also be used for items, food or even ideas, as well as for putting money aside. It may be helpful to highlight this to teachers and suggest ways of discussing the different elements.

When talking about money, it may help to include the word 'safe', such as 'keep money safe', 'keep money in a safe place'. An action verb could also illustrate that you have to do something to save up. For example, the description could be 'Put some of your money in a safe place until you have enough for your goal'. If the concept is also meant to cover rainy day savings or saving more generally, the definition could be made less specific 'Put some of your money in a safe place so that you can use it in the future'.

The Lesson And Activities

The storyline for lesson 3 could be misinterpreted by students. A drum kit would require a longer-term savings plan for the vast majority of people. It is hard to imagine that Bobby could save up for it with a short-term plan that only requires reducing his expenditure. The suggested answers to the questions recommended for this lesson could be updated to better reflect reality.

It may also be worthwhile for the teacher to stress that whilst a drum kit would be a want for most people, Bobby needs it for his work, and he earns enough to save for it relatively quickly. For older students, this could lead to a conversation about investing in your career, and possibly discussion of the role of credit. The colouring activity does not appear to add value in the classroom, whilst the mathematical element appears difficult. The activities in this lesson could focus more on the process of saving, drawing on behavioural insights.

Lesson 4

Defining Spend

The current definition does not use the verb 'to pay'. The definition could be simplified and made consistent with the teaching materials by using something like 'Paying for the things you need or want'.

The Lesson And Activities

This lesson teaches about the importance of shopping around, and shows how misspending, or spending without thinking, can knock someone off their path and make it harder to reach their goals. These elements could be included in the teacher guidance.

The question 'What happened to the Cha-Ching band that made them need to spend wisely?' could be misinterpreted. Cha-Ching encourages wise behaviour every day. Spending on wants is still wise, providing that it is done mindfully.³⁶ The question could be rephrased to read 'What happened to the Cha-Ching band that made them need to rethink their spending plan'?

The guidance on the worksheet could be reworded, as it is currently inconsistent with the instructions in class. The class are told to look at ways to save money in one area to meet other needs and wants; whereas the worksheet suggest that they should aim to 'save more for other items much more in need'. The classroom guidance is more appropriate in this instance.

Lesson 5

The questions in lesson 5 introduce the concept of volunteering as well as donating. This may need defining.

Defining Donate

The definition could be shortened slightly to 'giving your own time, things or money freely to help others'. This topic also needs to be handled sensitively to make sure that students understand that people find themselves in difficulty despite doing the best they can, and that there is nothing wrong or unusual with being the recipient of help.

The Lesson And Activities

The definition could be shortened slightly to 'giving your own time, things or money freely to help others'. This topic also needs to be handled sensitively to make sure that students understand that people find themselves in difficulty despite doing the best they can, and that there is nothing wrong or unusual with being the recipient of help.



³⁶ Mindful spending typically refers to focusing fully on a particular purchase and considering whether it is consistent with your own goals and preferences.

Lesson 6

The Lesson And Activities

Teacher feedback suggests that the game is difficult to play in the allocated time. They may need more time and classroom support to manage several groups of players, especially as each group needs to read the cards and understand the instructions.

Since this activity comes directly before the post-curriculum test, there is a risk that rushing the game would disappoint the students, whilst rushing the survey could lead to under performance.

Definitions

In addition to the definitions that are specific to the four concepts, the teacher materials include a range of other definitions which highlight just how broad the Cha-Ching curriculum is. Some changes are recommended to the definitions to simplify the terminology for new learners and create consistent messaging.

Government:

Could be defined as 'People working to keep our cities, states and nations running smoothly'. This is also consistent with the concept Earn.

Short-term goal:

Could be defined as 'Something you aim to do or have in the coming days or weeks'. This would also be more consistent with the definition of goal.³⁷

Delayed gratification:

The current definition is incomplete as it does not explain that the delay leads to an improved reward. This complex concept could be replaced with something more familiar to students, such as patience: 'Patience means being able to wait for something'.

Long-term goal:

Something you aim to do or have in the coming months or years'.

Resources:

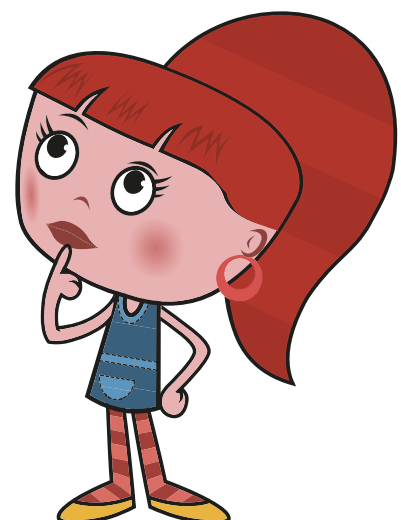
This is an important economic concept, but the definition used is a simplification of the wording used in economics and could ultimately lead to confusion. This could be removed from the teacher guide.

³⁷The current definitions of short-term and long-term use the verbs to attain and to get with achievement, which is grammatically incorrect.

Teacher Accreditation

Accreditation is a recent development. The process is based on a short test. Questions primarily recall aspects of the curriculum, which can be beneficial for checking that the teacher understood the training process. As an accreditation tool, it appears to be relatively simplistic. This is good for teacher confidence, but may not be the best use of resources, since it takes teachers time to answer the questions and the responses then require processing, even though the outcome is almost guaranteed. It would be possible to achieve the same end-goal by analysing the data that are already collected. This would still require additional processing but would be less onerous on the teachers and could take into account student achievement. There are challenges to making this a reality in the short term, but if it happened, it could also provide additional information about whether accreditation was motivating teachers to teach differently, and whether this was impacting on student outcomes.

It is noted that there is a possibility for accreditation for non-trained teachers. This appears to reduce the value of the process; if it is possible to guess the answers to very specific questions about the curriculum despite never having received the training, then it could be argued that the test is not capturing relevant information about the experience of the respondent. If some senior staff members would like to be accredited, it may be preferable to have a very short, generic questionnaire for them, based on adult financial literacy competencies, and to give them a slightly different form of accreditation.



Below are specific comments on the current accreditation questionnaire (some of which may only be relevant to the English versions):

Q3:

This question summarises parts of the curriculum, but not the whole curriculum – this may be confusing to some teachers.

Q4:

As this is one of the earlier questions, it may be relatively simple to build confidence. However, it is a little imprecise: donating is not the same as sharing and the English has errors: 'sharing money, time, and items to people in need', should be 'with people in need'.

Q7:

In reality this issue is context specific. Many children will pass their clothes onto siblings or family friends when finished.

Q9:

This is a two-part question. The first part may be true, but the second part is not true and should be removed, or reworded.

Q14:

The typical response to a question such as this would be to save it in an interest-bearing account or invest it. Interest is covered in one of the videos (and investment is covered in one of the additional videos), but neither are given as an option here. Earning money does not automatically make your money grow, if you spend everything you earn. This may be misleading for the teacher and lead to confusion.

Q15 & Q16

'A' would be preferable to 'the'.

Q20:

Note feedback on this definition above.

Q22:

None of the responses naturally follows on from 'considering all options'.

Q28:

It is not clear why the teachers are asked for the simplest approach. This could be rephrased to 'which of the following activities would best support a lesson on the concept of 'Earn'?'.

Q29:

Is inconsistent with the introductory video which clearly shows how money flows through the various states in no particular order.

Q42:

Note feedback on this definition above.

Q51:

Two of the responses are relevant the fact that you pay to use credit, and that people often buy things that they cannot afford.

Q52:

This could benefit from editing, as it is not the process of spending your money that makes something depreciate.

Q53:

There is no reason for the 'none of the above' option as the three other options cover all eventualities.

Q54:

ATM machines do not necessarily provide information about your balance. This varies by country and provider, and by the type of card being used.

Q51-55:

Are broader than the curriculum. This is generally a good thing, but the questions themselves may need some additional edits.

Evaluation

Cha-Ching includes an exceptionally well-designed evaluation process built into the delivery process. Some of the questions reflect the OECD PISA approach of testing applied knowledge. Even so, there are some elements that could be updated in the future to maximise the benefit of the data collection without creating any additional burden on the teachers and students. These are discussed below.

Review The Test Questions

The questions used to assess outcomes focus very specifically on curriculum content, providing a good indication of initial understanding and learning. As the curriculum is updated it will be necessary to review the questions used to ensure that they continue to measure outcomes and impact. Ideally, some questions will be kept to monitor trends over time, whilst others can be replaced to reflect changes in definitions or topics covered. It may also be useful to develop a small number of questions to measure higher-order skills, since some students are already achieving high scores before participating, and some questions are answered appropriately by the vast majority of students, offering limited insights in terms of the relative impact across students. More complex questions could incorporate various ideas discussed in this report such as 'paying yourself first' or valuing precious items, and could be aimed at higher school grades.

The questions are currently classified for country-level reporting according to whether they were designed to capture knowledge, attitudes, or behaviour. This could be reviewed, taking into account the categories used in this report and the wording of the questions.



Look At Other Ways To Collect

Currently the pre- and post-tests are distributed, completed and collected in a five-minute section of the first and last lessons. This may lead to rushed answers, potentially reducing the quality of the data. Teachers may be able to identify other periods when they could circulate the tests. Earlier pre-test data collection could also be useful for teachers if they use the information to ascertain initial levels of knowledge, whilst post-test questionnaires could point to areas that need additional attention next time.

Teacher feedback also suggests that they may be rushed at the end of lesson 6 because the game takes a long time to explain and play. This, combined with the likelihood that students may find it hard to settle after playing a game, means that their responses may underestimate their true achievement.

Currently, the data is collected on paper questionnaires. This approach is appropriate in most schools, but it is worth revisiting this point in the future to consider whether digital questionnaires could be introduced in some schools, to ease the burden of data entry.

Find Out More About Students

Analysis of education in schools typically focuses on their age and gender, as well as information about their cohort, teachers and schools. Many studies also include background information such as socio-demographics and responses to questions on preferences and experiences.

It is strongly recommended that the evaluation questionnaire asks the students their age in years and months, as the current approach of asking date of birth does not provide an accurate measure of their age during implementation.

It is recommended that a few questions are added to the pre-test to find out whether students have seen any Cha-Ching cartoons previously, whether they ever discuss money matters at home, and whether they ever receive pocket money, allowances, or cash-gifts. The post-test could include a question about which character they feel is most like them, and which character they would most like to be, to give a sense of how they see themselves in terms of money management and future direction.

Conversely, there is little value in asking so many general feedback questions with Likert scales, as the students are clearly tending towards the extremes. Some of these could be replaced by questions such as: Which lesson did you like most. What did you like least. Is there anything that you found too hard? Anything you found too easy? Did you do the take-home activities? Did you enjoy playing the game? Such questions would provide more valuable insights.



Pay Attention To Teacher Feedback

Teachers provide a wealth of important information in the teacher questionnaire, from positive feedback on the benefits of the Cha-Ching curriculum to concerns such as access to training and materials, the length of time they have to implement the curriculum, and preferences regarding the language of the curriculum. Most of the feedback has been translated into English. It would be good to develop a communication tool that can provide responses to the teachers, such as a newsletter that addresses the feedback provided and congratulates teachers on the progress of the students. Ideally the feedback should also be taken into account each year to improve implementation processes.

Data Entry and Storage

The data entry task is enormous and costly. This could be significantly reduced by reducing the number of records entered each year – although this does have implications for the usefulness of data in terms of matching to teacher records for accreditation and so on.

Data records should be comprehensive. Currently, actual responses to knowledge questions are not kept – the only information available is whether the student answered correctly or not. Patterns of incorrect responses are a valuable source of information and would add value without significant additional burden (instead of entering yes/no, the data entry team would enter a/b/c or d).



Make The Most Of The Database

Student data is collected in Excel. This offers the implementation partners a powerful tool to create annual reports. The data could be entered differently to make this more manageable. Currently, data for each student is entered into a column. This limits the automatic functions in Excel and reduces the ease with which values can be manipulated and checks can be made. It also reduces the storage capabilities of the programme. In future it would be far preferable to enter data for each student in a separate row; this facilitates the creation of unique reference numbers, automatic summing, and quick filters to check for errors in data entry

It would also be helpful to add more detail to each of the datafiles for future reference. It would be particularly useful to add in columns for country; year of implementation; date of test(s); and a teacher ID. Ideally, all student data could be matched easily with results from the same teacher and school in previous years.

The current approach of matching data is effective but not particularly efficient. One possibility would be for each student to be given a uniquely numbered mock debit card. The students would then enter their unique numbers onto their pre- and post-test questionnaires, along with their current age in years and months. This would avoid collecting more sensitive data such as date of birth and name and reduce the possibility of false matches. Discussion around keeping the card safe could also be a way for teachers to introduce electronic money and data protection.

Section 4. Conclusions

Cha-Ching fills an important gap in the provision of financial education in schools in Asia. By offering a tailor-made curriculum, backed with entertaining materials and guidance, Prudence Foundation has successfully supported thousands of schools and teachers to reach over half a million students.

Cha-Ching meets international good practices. The content is consistent with other respected approaches and the approach to teaching is evidence-based. The supporting videos are entertaining, and the characters clearly show how everyone stands to benefit from being financially literate.

The evaluation data for Cha-Ching is impressive. It includes usable, matched data for 213,514 students, allowing for an unprecedented level of confidence in the results. This report shows that there is already much that can be learned from such data and suggestions for minor evolutions will make the data easier to use in the future and more informative.

The amount of data and ability to undertake various statistical tests and models leave little doubt that students know more and change their attitudes and behaviour after completing the Cha-Ching curriculum. Given the consistency of the findings across time and place, it seems unlikely that there is another explanation for such a finding.

The evidence clearly suggests that Cha-Ching is effectively improving knowledge, attitudes, and behaviours. The effect sizes (the generally accepted measure of impact) are in line with those typically found in developed countries.

By creating a pseudo-control group, it has been possible to show that levels of knowledge have increased more than would be expected in the absence of such a curriculum, as have attitudes and behaviour. Furthermore, these increases have occurred across countries with differing levels of financial literacy in the adult population and different education systems. This suggests that positive outcomes could also be anticipated in other countries using the materials.

Continue To Take A Strategic Approach With Stakeholders

Ministries of Education have welcomed and endorsed the Cha-Ching curriculum, giving it the necessary status to be introduced widely across the five participating countries. This relationship is valuable and can be further enhanced by becoming more involved in national strategies on financial education and financial inclusion; as well as sharing Cha-Ching materials during global events such as Global Money Week and Investor Education Week.

More efforts may be needed to find space for financial education in the school timetable. Teaching Cha-Ching is positive for teachers, and beneficial for students, but some teachers have noted that it is difficult to find the time to teach it as they would like.

Consider small adjustments at the programme level

The analysis suggests some differences that could be addressed quite easily and others that do not need addressing.

The student level evidence suggests that the curriculum is likely to have the largest impact on students over the age of 8. At the school level the results confirm that schools where slightly older cohorts are participating in the Cha-Ching curriculum improve their students' knowledge more than those with younger students. However, this is not the case for attitudes – where there is no significant relationship, or for behaviour, where the biggest change is seen in schools with younger students.

The evidence so far does not signal a single appropriate age for Cha-Ching, but it does suggest that targeting students aged between 8 and 11 is beneficial. It is worth keeping in mind that younger students may take longer to grasp the ideas being presented. If the accreditation process eventually takes into account student achievement, it is also important that it takes into account the age of students.

Gender differences are not a concern. On average, girls start the curriculum with slightly higher scores on knowledge, attitude and behaviour than boys, and continue to maintain the lead. Nevertheless, the programme itself has a positive impact on boys and girls, indicating that it is successfully appealing to both.

The order of the lessons reflects the perception of money flowing, and appears to be appropriate given the difficulty of each concept. Most students had a basic understanding of where money comes from; far fewer were aware of the best ways of saving or appropriate spending decisions. These differences suggest that the current order should be maintained.

Keep In Mind Country, School And Student Differences

The Cha-Ching cartoons have a broad appeal and do not rely on country-specific knowledge. Similarly, the content of the lessons and the teacher guidance is largely appropriate in every country. However, there are some aspects where country-specific approaches could help students and teachers, and where materials could be adjusted for students from different backgrounds.

Teachers appear to prefer discussing money using their national currency. This is logical and could be achieved quite easily.

Whilst each country focuses the Cha-Ching curriculum on a particular school grade, the age range within that varies considerably. This is important to take into account when creating materials and delivering the class, as the findings show that there is a relationship between outcomes and age.

It is important to keep in mind that both the students and the teachers may be participating in the curriculum in a language that they are not fully fluent in. In future, it could be useful to translate the materials into more languages.

Teaching materials that ask students to reflect on their family or home life may cause some concern for students in fragile or vulnerable households; teacher discretion is key in such situations.



Future Directions

This review has identified three topics that Cha-Ching could explore incorporating in the future.

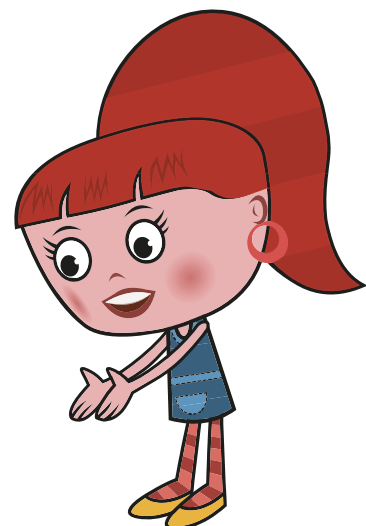
The importance of **numeracy** could be stressed more in the resources. This needs to be handled with care to ensure that the content remains clearly focused on finance, but there are many potential benefits for students if they understand why numeracy is important, by seeing it used in every day problem solving.

The concept of **taking care of things, property or assets** could be made more explicit. A message stressing the importance of taking care of existing belongings is consistent with environmental goals of reducing waste, whilst in the context of money, looking after financial assets improves financial resilience. Both are likely to support efforts to meet the Sustainable Development Goals (SDGs)

The curriculum could seek to discuss ways in which cash is being rapidly replaced by electronic payments, and **digital financial services** are becoming a familiar part of the financial landscape.

In the future, Cha-Ching could be envisaged as a whole school financial literacy project that provides a real-life context for discussion across various subjects, from social studies and language to mathematics and music. Teachers may seek to work in teams to explore the full potential of integrating the Cha-Ching curriculum.

It may also further develop the scope to offer financial literacy education to school staff, parents, and the broader community by focusing on the simple messages contained in the Cha-Ching curriculum, and empowering young people to talk to their community about the lessons they have learned.





2021 Cha-Ching Review: Asia

Independent review by Dr Adele Atkinson

After five years of implementing the Cha-Ching curriculum in Asia, we are delighted that the findings from Dr Atkinson's report confirm that Prudence Foundation is having a positive impact on the lives of hundreds of thousands of young people across Asia.

Our Cha-Ching curriculum is providing teachers with entertaining videos, practical resources and a wealth of professional guidance, and the results for children's financial education are impressive. As Dr Atkinson observes *'Students [watching the videos and who take the curriculum] realise that everyone who takes the time to learn and understand can be a successful money manager.'* And her analysis certainly confirms this view. After participating in 6 Cha-Ching lessons, students know more, improve their behaviour and have more positive attitudes towards financial matters than they did before.

A handwritten signature in black ink, appearing to read 'Marc Fancy'.

Marc Fancy
Executive Director
Prudence Foundation

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