

WESTERN SYDNEY
UNIVERSITY



Improving financial capability among
university students using a mobile app:

Wallet\$mart

PROJECT EVALUATION



A research report commissioned by Unibank (Teachers Mutual Fund Limited)

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ISBN: 9781741085228

DOI: 10.26183/r6bs-s098 (<https://doi.org/10.26183/r6bs-s098>)

Preferred Citation

Cull, M., & Attard, C. (2021). *Improving financial capability among university students using a mobile app: Wallet\$mart project evaluation*. Western Sydney University.

COMMONWEALTH OF AUSTRALIA

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ACKNOWLEDGEMENTS

This research evaluation was funded by UniBank (Teachers Mutual Bank Limited). The views expressed in this report may not be representative of the funding body.

The authors wish to express their sincere thanks to the students who volunteered to participate in the study.

The authors also wish to thank Glenn and his team at Tangible for their patience and understanding during the development of the app and for making our ideas for the app become a reality.

The authors also acknowledge Chinnu Jose and Csilla Skultety for their research assistance with the literature review and data entry for this project.

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Executive Summary

This report details the findings of a research evaluation conducted for UniBank (Teachers Mutual Bank Limited) exploring the effectiveness of the *Wallet\$mart* mobile app in improving university students' financial capability. Students undertook to trial the *Wallet\$mart* app during 2020 at Western Sydney University, in partnership with UniBank and supported by App developer, Tangible. This report evaluates the effectiveness of the trial and makes recommendations for further development of the app prior to the app being rolled-out to university students more broadly.

The *Wallet\$mart* App

The *Wallet\$mart* app was specifically designed for university students in Australia. Academics at Western Sydney University introduced the initial concept and design of the App, wrote the app content, conducted short video recordings with students for use in the app and implemented the pilot program. Tangible were contracted to develop the App using the initial design concepts and content provided.

The *Wallet\$mart* app aims to address the predominant need to build financial literacy and financial capability of university students with a particular focus on the students 'at-risk' of being susceptible to financial adversities. It aims to assist students as they make important financial decisions which can impact on their 'whole of life' experience.

The *Wallet\$mart* app is the first of its kind to address the use of a mobile app as an intervention for improving financial capability. The intervention will be evaluated in terms of how it:

- Engages participants;
- Changes attitudes and nudges participants towards the right financial behaviour; and
- Impacts on the financial capability of participants.

The app was offered to undergraduate and postgraduate students at all Western Sydney University campuses across the greater western Sydney region. The app was available to download and use for a period of five months in total. A total of 530 students downloaded the app over the five month period.

Students were required to complete an entrance test (and provided with a 'Wallet\$mart IQ score') to determine their level of financial literacy and financial capability prior to using the app. This information was used to direct students to the areas where they were most in need. The app covered seven financial management topic areas broken down into a number of bite-sized lessons and included short videos and quiz questions. Students were encouraged to complete the lessons by earning digital badges. The app also included a budgeting tool to assist them with managing their finances. Students who had worked through all lessons successfully were provided with the opportunity to complete an exit assessment to see if their 'Wallet\$mart IQ score' improved.

The evaluation

This evaluation was undertaken using a mixed methods approach. Qualitative data includes student interviews and responses to open-ended survey questions. Quantitative data includes the App usage statistics and quiz results as well as survey data. Utilising both qualitative and quantitative data provides greater insight than limiting the data to one approach only. The following research questions were used to explore the effectiveness and impact of the *Wallet\$mart* app:

1. Can a mobile financial literacy based 'App' improve the financial capability of university students
2. What are the key factors to consider in developing a mobile 'App' to improve the financial capability of university students?
3. How can a mobile financial literacy 'App' change the attitudes and behaviours of university students with regards to personal financial management?

Evaluation participants were drawn from a sample of 530 students from Western Sydney University who took part in the *Wallet\$mart* App pilot. Data sources included App usage and quiz statistics, semi-structured student interviews, and a student survey upon conclusion of the *Wallet\$mart* App trial.

Findings

The Wallet\$mart app improved the financial capability of students by providing just-in-time information that was relevant to financial decisions that university students were making or considering during the trial period. The app influenced financial capability of students in the following ways:

- Students improved their knowledge and understanding of financial concepts with more than an 80% improvement overall on pre/post-test results;
- The bite-sized lesson content, including the combination of short videos and quizzes that were able to be accessed over an extended period of time, allowed many of the participants to put what they were learning into practice during the trial period;
- More than 75% of survey respondents indicated that their financial capability had increased since using the Wallet\$mart app;
- Increased awareness of topics that were relevant to students' personal circumstances;
- Students made more informed decisions on their immediate financial situation;
- Improved student skills such as budgeting;
- Made students feel more confident about making financial decisions;
- Positively influenced student attitudes to personal financial management.

The key factors to consider in developing a mobile app to improve the financial capability of students are:

- Accessibility – easy to download and free of charge;
- Providing real-time and relevant context for learning;
- Content written and provided by an authoritative source;
- Keeping the app simple to navigate and easy to use;
- Easy to understand and written in a way that is respectful (i.e. not patronising or condescending);
- Include a glossary;
- Aesthetics e.g. colours, logo, spacing of text/paragraphs;
- Day/night mode;

More than 75% of survey respondents indicated that their financial capability had increased since using the Wallet\$mart app

- Audio 'voice-over' to read the text aloud;
- Self-testing tools and progress feedback;
- Incorporate 'fun' and build a community through gamification;
- Flexible budgeting and savings tools;
- Up-to-date content;
- Case studies and real-life video examples;
- Promote the app through advertising and publicity to encourage take-up;
- Push notifications;
- Links to further resources;
- Lessons on budgeting and savings are essential while lessons on employment, buying a car, insurance, borrowing, moving out of home and education fees are all useful to building financial capability.

Results showed over 65% of students had taken action/changed their behaviour based on information contained in the app. Findings of the study provide evidence that a mobile financial literacy 'App' can change the attitudes and behaviours of university students with regards to personal financial management by:

- Improving their engagement with financial matters;
- Providing real-time and relevant context for learning;
- Assisting students in developing positive saving behaviours;
- Providing students with knowledge that builds their confidence with making financial decisions;
- Increasing awareness of the financial complexities related to employment and significant purchases such as cars;
- Helping students to make informed financial decisions;
- Helping students to plan their finances, track their expenses and pay their bills on time through using a budget; and
- Motivating students to want to learn more about their finances.

The program resulted in students engaging in their finances through planning for the future and weighing up their options when it came to making important financial decisions.

The Wallet\$mart app increased the awareness of the impact of financial decisions amongst students, and their friends and family. In particular, the budgeting tool to track expenses featured heavily in the students' responses to survey and interview questions, as did understanding superannuation and costs of buying and maintaining a car. The program resulted in students engaging in their finances through planning for the future and weighing up their options when it came to making important financial decisions. It also affected how students think about the impact of financial decisions they make today on their lives now and in the future.

Recommendations

The following recommendations are provided to assist in the development of the app in the future:

- Due to the positive impact of the app on students, it is recommended that UniBank (Teachers Mutual Bank Limited) continue to make the app available to students at Western Sydney University and consider expanding the availability to other Australian universities;
- The app content needs to remain current/up-to-date with any changes in legislation or other financial issues that may impact on students;
- An expansion of the glossary to include additional terms;
- Keep the app relatively simple and easy to use and understand;
- Include an additional module to cover 'investing' and expand on the existing employment module to include additional lessons on taxation;

- Build flexibility into the budget tool to allow for additional expense types to be included and for variations in income;
- Further sophistication of the budget tool to allow for tracking of actual expenses versus budget expenses;
- Incorporate a section for inputting financial goals and a savings tracker;
- Include more advanced gamification features to improve student engagement;
- Refine aesthetic features of the app (e.g. colours, logo, spacing of paragraphs);
- Provide options for more complex information for confident students such as being able to transition between different 'levels' (e.g. beginner, intermediate, advanced);
- Regular updates via newsletter and push notifications and reminders to ensure continued engagement with the app;
- Possibly offer incentives, prizes or 'community' challenges for achieving a certain levels of progress in the app;
- Consider changing/testing the name of the app with students;
- Further opportunities for student feedback and use of the app should continue to be included in future iterations. This will ensure that the app runs smoothly, maintains a high standard of quality and that students gain the maximum benefit from using the app;
- It is recommended that access to the app be made simpler through switching the app release from private to public on the app store which will no longer require students to register to obtain a password and have access to the app;
- It is recommended that a link to an online survey be included as an option in the app itself to encourage users to provide feedback on their use of the app;
- Offer incentives for downloading and using the app – for example, free coffee/drink, vouchers or discount on textbooks;
- Consider partnering with the University to offer a micro-credential to students who complete all lessons within the app. This could possibly be included on the student's university transcript.

Introduction

The *Wallet\$mart* app was developed by Western Sydney University in 2019, in partnership with UniBank and pilot tested in 2020 with over 500 students from Western Sydney University. This report presents an evaluation of student experiences in using the app and its impact on students' financial capability including student attitudes and behaviours in terms of personal financial management.

The app aims to address the predominant need to build financial literacy and financial capability of the student population at Western Sydney University (WSU). Over 60% of the students at WSU are first in family to attend university, with 38,858 domestic students and 5,939 international students (Western Sydney University, 2017). Over 70 percent of domestic students at WSU rely on funding through the Commonwealth Grants Scheme (WSU, 2017) and the Higher Education Contribution Schemes (HECS) is in itself a main source of debt for majority of Australian University students aged between 18 and 29 (Cull & Whitton, 2011). Further, to succeed in today's university environment, there is a need for at-risk and underrepresented students to improve their financial capability as errors in financial decision-making for these students may result in much worse outcomes due to their limited safety net (Eichelberger, Mattioli, & Foxhoven, 2017).

The *Wallet\$mart* app has a particular focus on the students 'at-risk' of being susceptible to financial adversities by providing just-in-time information about personal finance items that has been specifically contextualised for university students. By having easy access to this personal finance information, the app provides the tools needed for students to make wise financial decisions.

It is envisaged that the evaluation of the app presented in this report will result in the development of a 21st century financial capability program that addresses the immediate financial needs of WSU students. The evaluation has utilised surveys, interviews, app usage data and quiz statistics of WSU student users to evaluate the impact of the app on financial capability of university students and provide recommendations for future use of an App to build financial capability. The report also addressed the gap in current research on evaluation of financial literacy models aimed at improving the financial capability of university students.

This is the first project of its kind to address the use of a mobile app as an intervention for improving financial capability. The intervention will be evaluated in terms of how it:

1. Engages participants;
2. Changes attitudes and nudges participants towards the right financial behaviour; and
3. Impacts on the financial capability of participants.

The app aligns with Western Sydney University's vision to 'secure success for our students and the Greater Western Sydney region through innovation and discovery in a dynamic and technology-enabled world' (Western Sydney University, 2018, p.2). In addition to being distinctively student-centred, the app contributes to Western's objectives as follows:

- Build research-informed networks by engaging and partnering with industry;
- Increase research impact through co-creation of research with partners, translational applications and broad dissemination of research outcomes; and
- Targeted research that leverages the university's strengths and increases collaboration and interdisciplinarity, create meaningful outcomes for our partners in industry, government and the community. (Western Sydney University, Securing Success Strategic Plan 2018–2020, p.7)

Further, the app aligns with UniBank's vision to give university staff, students, graduates and their families, better financial options and to inspire, encourage and help them achieve lifelong financial well-being.

The Wallet\$mart app included content written by Dr Michelle Cull from the School of Business at Western Sydney University which covered seven broad topic areas. This content was further broken down into lessons which also included short videos and short quiz questions to keep students engaged. Links to authoritative sites for further reading, a budget planning tool and a glossary were also provided. Data on student usage such as time spent on each topic and quiz results are presented in this report. Further details about the app and its content and features is provided in this report following a brief overview of background literature pertaining to financial capability. This is followed by a discussion on the evaluation methods before reporting on the results of the Wallet\$mart app evaluation.



This is the first project of its kind to address the use of a mobile app as an intervention for improving financial capability.

Background

Financial Capability: What is it? How is it different to financial literacy?

Financial literacy and financial capability are not the same thing. While financial literacy is knowledge-based, financial capability is more actions based as it considers not just knowledge but also attitude and behaviour. Definitions of each are provided below.

Financial literacy

Financial literacy is a relatively new term that lacks an accepted definition (Gerrans & Heaney, 2016). The most commonly used definition of financial literacy in Australia is the definition used in a series of national adult financial literacy surveys conducted by the ANZ since 2003 which is mostly consistent with that commonly applied by inter-governmental bodies such as the World Bank and the OECD. This definition of **financial literacy**, as cited by Worthington (2013) is:

the ability to make informed judgments and to take effective decisions regarding the use and management of money (p. 230).

Financial education has been found to have a positive impact on financial literacy (Kalwij 2019) which can be measured by the 'Big 3' financial literacy questions developed by Lusardi and Mitchell (2011). These three questions test one's knowledge of compound interest, time value of money and investment risk. The test has been used in a large number of financial literacy studies both nationally and internationally.

Potrich, Vieira, & Mendes-Da-Silva (2016) differentiated three categories of financial literacy to create a model most appropriate for university students. The study found that the most adequate model of financial literacy was the concept that financial knowledge and financial attitude precede financial behaviour. That is, financial knowledge and financial attitude will impact positively on financial behaviour as people strive to attain financial wellbeing. However, self-efficacy (Bandura,

1977, 1982) explained by confidence in one's own ability to manage money responsibly to reach goals has also been found to impact on financial behaviour. Thus, financial literacy alone does not always translate to financial wellbeing. This is where the term financial capability becomes relevant.

Financial capability

The Center for Financial Inclusion¹ defines **financial capability** as:

the combination of attitude, knowledge, skills, and self-efficacy needed to make and exercise money management decisions that best fit the circumstances of one's life, within an enabling environment that includes, but is not limited to, access to appropriate financial services (Accion International, n.p).

For the purposes of the app which is targeted at university students, the financial capability definition adopted is an adaptation and integration of a range of definitions as follows:

Financial capability is the combination of attitude, confidence, knowledge and skills to make financial decisions that best suits one's personal circumstances.

This definition adds to the concept of financial literacy by including the application of knowledge, combined with measurable outcomes (Eichelberger, Mattioli, & Foxhoven, 2017; Spencer, Nieboer, and Elliott 2015). In other words, an individual develops financial capability when financial literacy – the *ability* to act, is coupled with financial inclusion – the *opportunity* to act (Loke, Choi, & Libby, 2015). Financial capability is also influenced by psychological motivations and biases that drive behaviour (French, McKillop & Stewart, 2020; Hershfield et al., 2011).

Financial capability is especially important for young adults who may not be aware of, or have used the many financial resources available to them. Providing not just the knowledge but also the avenues to exercise that knowledge at the right time can be highly beneficial for university students and young adults in building positive financial attitudes and behaviours.

¹ <https://www.centerforfinancialinclusion.org/what-is-financial-capability>

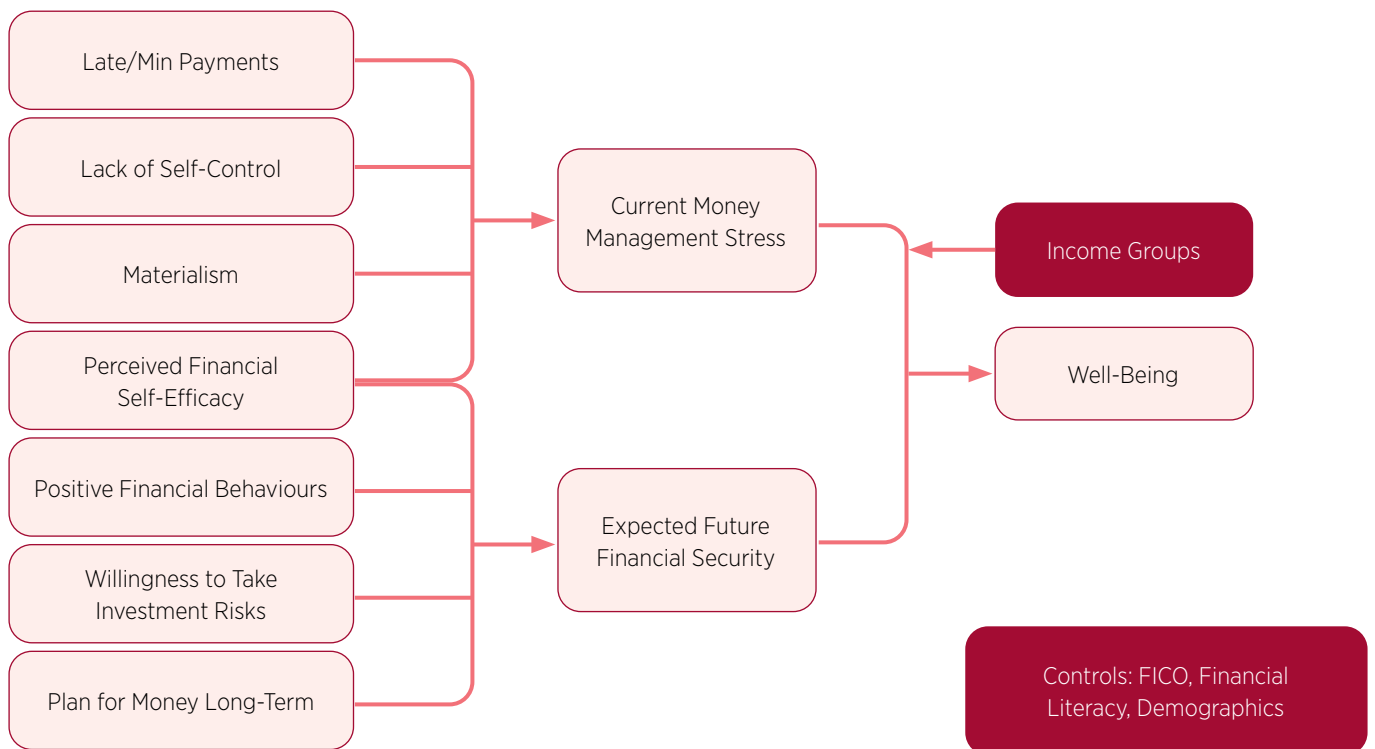
Why Financial Capability: What does it look like?

Financially capable behaviour does not yet have a standard scale of measurement (Shephard et al. 2017). However, a range of financial behaviours that people exhibit or actions they take can be measured – e.g. saving regularly, keeping track of finances, working towards longer term goals, use of credit (Atkinson 2016; Money Advice Service 2016). Attributes of financial capability have also been discussed broadly by Lin, Mottola, and Lusardi (2019) as being able to make ends meet, planning ahead, managing financial products, and having financial knowledge and making decisions.

Further, financial capability is seen to be a pre-cursor for improving financial well-being which in turn impacts on overall well-being. The conceptual model presented by Netemeyer et al. (2018) in Figure 1 shows the potential antecedents and consequences of perceived financial well-being. As part of this model,

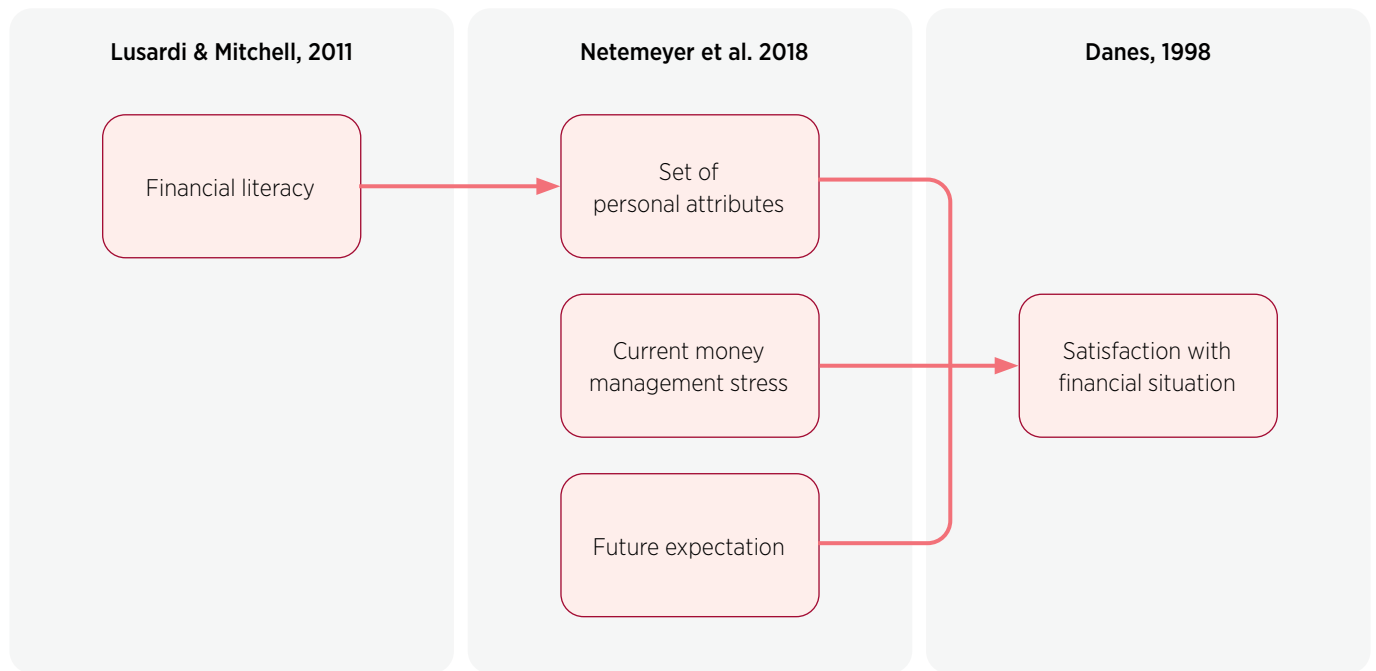
personal attributes such as self-efficacy, self-control, planning for the future and financial behaviours are considered to be antecedents, with money management circumstances and expectations of the future having a mediating effect on financial well-being. This is after controlling for factors such as financial literacy and demographics. A new conceptual model proposed by West & Cull (2020) (refer Figure 2) adds the impact of financial satisfaction to the mix. This is a consequence of financial capability as it relates to the financial decisions that best suit one’s personal circumstances (as identified in the definition of financial capability above). Building on the literature on financial capability and the conceptual models of financial well-being and financial satisfaction proposed by Netemeyer et al. (2018) and West & Cull (2020) respectively, a model which includes financial capability is shown in Figure 3.

Figure 1: Potential Antecedents and Consequences of Perceived Financial Well-Being



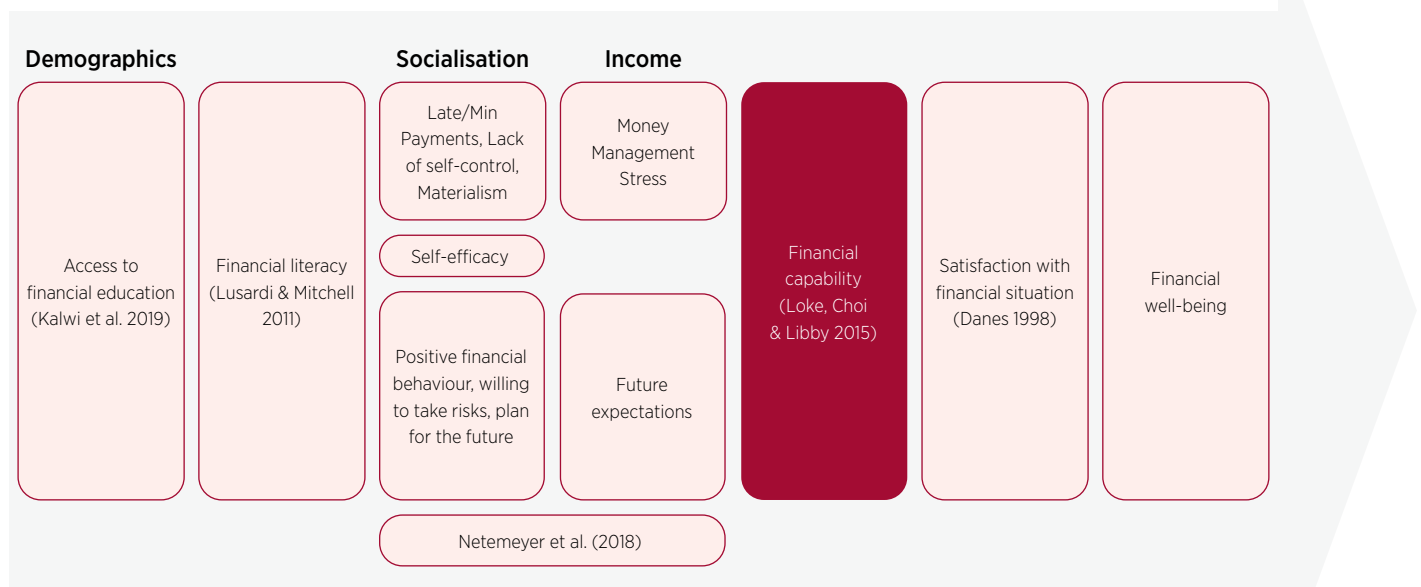
Source: Netemeyer et al. (2018, p. 72)

Figure 2: Determinants of Financial Satisfaction



Source: West & Cull (2020, p. 323)

Figure 3: Potential Antecedents and Consequences of Financial Capability.



Source: Adapted from Netemeyer et al (2018) and West & Cull (2020).

Financial Capability: A priority for young adults

The increasing necessity of a financially literate population has made financial education programs a global priority. The main national surveys conducted in Australia have found that those characterised as having low levels of financial literacy are usually younger and have low levels of education, income and employment (Worthington, 2013). Cull and Whitton (2011) found low levels of financial literacy among university students in Western Sydney with other researchers also addressing the concerning financial literacy levels of young people, both in Australia and overseas (Bottazzi & Lusardi, 2016; Driva et al., 2016; Gerrans & Heaney, 2016; West & Cull, 2020). With the growing development of financial products and increased usage of credit cards, financial literacy is becoming a necessary skill needing to be possessed from a young age (Beal & Delpachitra, 2003). If not addressed properly, low levels of financial literacy among young people can result in high levels of debt, poor credit rating, adverse health, retirement and quality of life (Cull & Whitton, 2011).

To succeed in today's university environment, there is a need for at-risk and under-represented students to improve their financial capability as errors in financial decision-making result in much worse outcomes due to their limited safety net (Eichelberger, Mattioli, & Foxhoven, 2017). Students who lack self-confidence with their finances along with students from disadvantaged backgrounds can find it difficult to engage positively with their finances. Further, international students who have recently arrived in Australia need assistance with navigating the Australian financial environment. These insights are particularly important for students at Western Sydney University due to the socio-economic diversity among WSU students. Cull and Whitton (2011) found that 93.9 percent of undergraduate students were HECS liable, and 24.4 percent borrowed additional money to finance other necessities relating to their study.

Parental education has also been found to affect financial stress of students with students likely to experience higher levels of financial stress than peers if their parents did not have a bachelor's degree (Fosnacht and Calderone, 2017). This is especially relevant for Western Sydney University students as more than half are the first in their family to study at university (Western Sydney University, 2021).

New financial risks continue to emerge with the introduction of technology and payment schemes such as Afterpay and ZipPay. The Australian Securities and Investment Commission (ASIC) (2018) found that 60 percent of users of these buy-now/pay-later payment schemes are between 18 – 34 years old, and more than 44 per cent of the users had an annual income of less than \$40 000. Within this group, almost 40 per cent described themselves as either students or in part-time work (ASIC, 2018).

While university students have a wealth of information at their fingertips available on the internet, it can be difficult for students to decipher which information is accurate, authoritative, current and can be relied upon. Thus they need some guidance. Further, in order to engage university students, they require information that is contextualised, specific and relevant to their needs.

Financial Capability: Programs to assist young adults

Traditional programs targeted at improving the financial capability of university students offer only a basic, limited transfer of information as they are not offered 'just-in-time' as the student is experiencing the issue. These traditional programs face issues such as lack of recall and lack of practical application. While many schools, workplaces, not-for-profits, and government agencies offer financial education programs, only a small proportion have been found to participate (Lin, Mottola and Lusardi, 2019). This is concerning, given these programs are also offered free of charge. This reinforces offering targeted and just-in time financial education, including mobile apps for example that are specifically relevant to their target audience.

As education itself is increasingly being delivered online, the literature provides some evidence of financial programs for university students are purely online. Angel (2018) hypothesised that the use of a financial website can increase financial knowledge of young people. While this is one of the few pieces of

research that measured the use of technology as a stand-alone tool, the effectiveness of the website was limited. The study concluded that the web exercises did not significantly increase financial knowledge, nor generate interest in financial topics (Angel, 2018). It is important to note that the study had limitations including small sample size, and differences in the type of media, time periods and active participation of the students, which could have skewed the results. To determine the need for online financial literacy programs, Eichelberger et al., (2017) gathered data from a large number of university students finding that most students preferred to have a reliable, centralised online resource that does not overload them with information.

A summary of the types of programs that have been developed to improve the financial capability of young people is outlined in Table 1.



Table 1: Programs targeting financial capability

Literature	Program	Relevance for university students
Angel (2018)	<p>A series of web exercises were used by young people in the aim to increase interest in financial topics and knowledge.</p> <p>The Toshl budgeting app was used by young people with the aim of making the participants feel more proficient in handling and overlooking their income and expenses.</p>	<p>Provides the opportunity for students to gain financial literacy using more advanced and technological tools.</p> <p>The results reported that users of the app consistently checked their account balances more often. The app is a great example of a program that is more relevant for university students in the 21st century context. The app allows for immediate access to resources and knowledge.</p>
Bowen and Rizk (2015)	University libraries provided financial literacy workshops and partnered with other programs to increase financial knowledge.	Libraries are considered a neutral, trustworthy entity that is often centrally located and accessible. Programs conducted in university libraries will allow it to be accessible to all students.
Harter and Harter (2010)	The <i>Stock Market Game (SMG)</i> allows students to invest a hypothetical \$100 000 in a stock portfolio over a period of time. The aim of the program is to increase investment knowledge.	The program has been used by more than 10 million students with significant results. An increase in overall financial knowledge had occurred in this study.
Loke et al. (2015)	The MyPath savings initiative was a suite of financial services that aimed to increase financial capability of youths. The program combined face-to-face workshops with the implementation of a savings account and direct deposit feature.	The program was highly specific and targeted at particular groups of young people, so the whole program cannot be transferred for university students. However, the financially capable concept of the program can be highly beneficial for university students who often have not experienced the financial world.
Lührmann et al. (2014)	My Finance Coach consisted of three 90-minute modules taught by finance coaches. The modules were aimed at high school students, and included topics on shopping, planning and saving.	The modules resulted in an increased financial interest, and decreased prevalence of frequent and impulse purchases. However, it is important to note that the modules were specifically aimed at young students (13–15 years).
Varcoe and Fitch (2003).	<i>Money Talks: Should I be Listening?</i> curriculum consisted of interactive games and videos that aimed to increase financial knowledge and exhibit positive behaviour.	Although the program is aimed at teenagers, the interactive element of the program can be adapted to a university context. Programs that are more interactive can increase interest and motivation among students.

Despite the copious amounts of research on low financial literacy levels and proposed financial education models, there is a significant lack of evidence on the evaluation of these models. The evidence is even more sparse when considering successful financial literacy models for Australian university students (Gerrans & Heaney, 2016).

Financial Capability: Why a new approach is needed

While there is no one-size-fits-all method to building financial capability of university students, the research identifies some common requirements: a model that answers immediate financial needs; provides continuous learning; is interactive and creates opportunities for the students to act on their knowledge, is likely to be most effective. Indeed, offering programs 'as needed' means the person is more likely to retain the information and use it into the future (Consumer Protection Bureau 2019 p 13).

An innovative new way of promoting financial capability is required to engage, interest and challenge students to connect their world to the world of personal finance which is more likely to lead towards a greater depth of understanding and knowledge retention. Although many financial literacy programs offer similar topics of knowledge, it is in the structure and mode of delivery that these programs often differ. In fact a program structure that lacks motivation and does not provide immediate relevance to the audience can actually decrease financial literacy levels among young people (Blue, Grootenboer, & Brimble, 2014).

Fernandes, Lynch, and Netemeyer (2014) suggest that financial education plays a stronger role in financial literacy if it is elaborated or acted upon shortly after the intervention has taken place, suggesting that a just-in-time type of financial education will be beneficial. An intervention such as an app that can be accessed at the touch of a button is ideally suited to a just-in-time approach. Further, students can constantly keep up to date with financial knowledge and create personalised methods to build their financial capability. This will assist students to engage in positive financial habits of that will be of benefit long after they have completed university. Building financial capable students will also contribute to a society that exhibits a positive financial lifestyle that promotes financial (and overall) wellbeing.

Mobile phone apps have been successfully used to improve health outcomes and behaviours (Chan et al., 2018; French, McKillop, & Stewart, 2020; Glynn et al. 2014; Peiris, Miranda, and Mohr 2018; Smith et al. 2014; Watts et al. 2013) but there is currently only one study that investigates the efficacy of mobile phone apps in improving financial capability (see French, McKillop, & Stewart, 2020) and this study was based on middle-aged adult members of a credit union in Northern Ireland. The Wallet\$mart app trial in this project evaluation is the first of its kind to use a mobile phone app to improve the financial capability of university students.

Although many financial literacy programs offer similar topics of knowledge, it is in the structure and mode of delivery that these programs often differ.

Figure 4: The WalletSmart App Project Approach



Project Approach

The approach taken in this project to develop and evaluate the use of a mobile app to influence financial capability began with the initial concept/ideation, followed by app design and development, content writing, app testing, pilot testing and evaluation. The approach is shown in Figure 4.

This research evaluation will explore the influence of the app pilot on the financial capability of the university student participants and how it may have affected participants' attitudes and behaviours for personal financial management. The evaluation will also report on the best aspects of the app and make suggestions to improve student engagement with the app and the app user experience.

The Wallet\$mart app



To ensure that the Wallet\$mart app would be able to address the financial capability requirements of university students and provide an environment for appropriate evaluation of the app, the following items were considered as part of the design process.

- Free access/download for students who registered to be part of the research project;
- Making the app visible and available for download in the App Store with the app setting on 'private' to ensure only those registered to participate in the research project would be using the app;
- Ensuring compatibility for both Apple and Android devices;
- Developing content directly relevant to university students;
- Limiting the amount of text appearing on pages so not to overwhelm users;
- Using short videos featuring university students to engage students and create an awareness of the importance of personal financial management;
- Inclusion of contextual case study examples of 'real-life' scenarios to demonstrate the short-term and long-term impact of various financial decisions;
- Rewarding students for engaging with the app via digital badges for specific achievements;
- Personalisation of the app by including a budget planning tool;
- Including a pre/post test via a Wallet\$mart score to evaluate the effectiveness of the app;
- Logo icon image; and
- The user experience and user settings.

Design elements

Elements of the design process for app development as outlined in the timeline in Table 2 were as follows.

Initial Concept and Design

The initial concept of the app was based on filling the gap that existed in financial literacy and financial capability education to provide a program and/or tool that would be accessible, motivate university students and provide immediate relevance. An app seemed to be an obvious choice as most (if not all) students had access to a mobile telephone which made it a convenient way to offer a free tool to students to assist with improving their financial capability. To ensure that the app remained accessible, it was considered that it would need to be offered on both Android and iOS devices. The literature indicated that the information provided would need to be written and structured in a way that was not burdensome or overwhelming and was easy to navigate and understand. Furthermore, it would need to be up-to-date, reliable and personalised to an extent, to ensure it was relevant to the user. The literature, along with anecdotal evidence indicated to the researchers that there were a range of topics that were immediately relevant to students. As a way of personalising the information and ensuring it was relevant to each individual user, the idea of a diagnostic test was considered so that the app could prioritise the topics for the user so that they saw the topic that they needed the most help with first.

The research team scoped out the main requirements for the project, including the research questions, resources, budget, timeline and evaluation methods. To progress the design of the app and to further consider user needs and preferences, a user experience workshop was planned before progressing to the app development stage.



User Experience (UX) Workshop

Two-hour, face-to-face session at Western Sydney University, Parramatta City Campus

The User Experience (UX) workshop was held during the inter-session break of 2019 to assess the overall issue of financial capability that the app was attempting to solve. Western Sydney University students were invited to attend the workshop which was facilitated by digital agency, Tangible. Although there was a high level of interest from students, the workshop was limited to 50 participants to enable small group facilitation and to ensure room capacity restrictions were adhered to. The student participants represented a range of ages and various degree programs (both undergraduate and postgraduate) and were from diverse cultural backgrounds, including both local and international students.

The Tangible team was interested in learning participants thoughts on what barriers to financial literacy and capability exist, what style of learning is most desired, and to obtain information on student habits in order to articulate favourable features that could be incorporated into the app (Tangible, 2019).

During the UX session, users were asked to perform the following tasks:

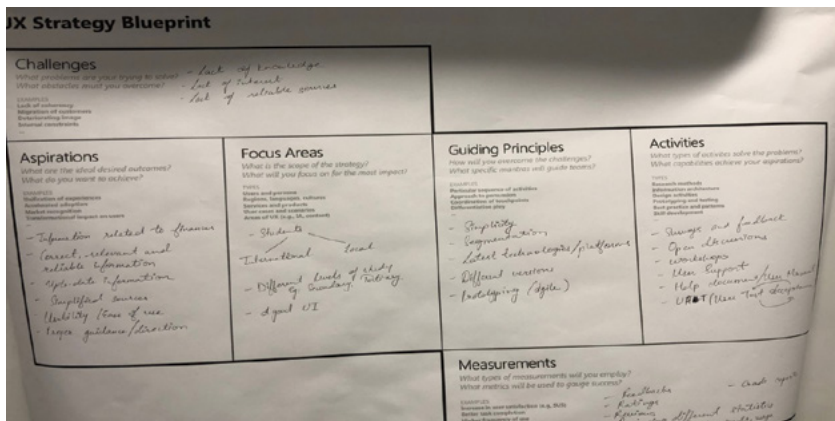
- A “Brain Dump”;
- UX Strategy Blueprint;
- Concept Deconstruction;
- Market Opportunity Navigator; and
- Design interface activity (Tangible, 2019).

The workshop and subsequent report by Tangible (2019) revealed that content needed to be succinct, up-to-date and delivered in bite size chunks. Students highlighted the importance of the visual content and use of real-life scenarios. In addition, students outlined that it was essential that the app be easy to navigate, secure, available on both iOS and Android devices and that it remain free for students. Desired features of the app included an audio transcript of lessons, a glossary as well as a budget tracking tool. Findings from the workshop also indicated that student mobile app usage tended to occur around three times per day and be used most often while on public transport and in bed (both morning and night). This led to the consideration of offering a night mode feature to the App.

Style Guide

A style guide was created to include design details such as the font, typeface, lines and colours used for various components of the app. Consideration was also given to the app menu and the way in which the colours assisted the user in navigating the different components of the app. Font type and size were chosen for ease of readability and to allow for the text content to be structured to fit on each page.

A number of iterations of the style guide were produced based on feedback from the Western Sydney University research team and from the UniBank project team, including the Head of Corporate Affairs and the Manager - Brand and Marketing. It was important to the progress of the app development to have the style guide finalised early on and prior to building the menu and the various pages in the app as any changes made post-development would add considerable time and cost to the project (refer to timeline, Table 2).



App Name and Logo

The app name and logo were integral components of the app development. While over 70 different names were considered, further research found most of these names to be already taken or used for other apps, businesses or programs. Others had slang connotations that were not appropriate for a diverse cultural student community or had different meanings or when translated to other languages and cultures. The original app name agreed to by the research team, tangible and UniBank was 'finsma' (meaning 'financially smart') and this was subsequently translated to a 'word logo' using design elements in line with the style guide. A splashscreen was also designed using the word logo in accordance with the style guide.

At a later part of the design stage (refer to the timeline in Table 2), a request to review the app name and logo was made by UniBank as part of their wider corporate re-branding strategy. Consideration was given to whether the name 'UniBank' should appear in the name of the app. After some deliberation, it was decided that the UniBank name would not be part of the app name for the pilot and that the app would use the name 'Wallet\$mart'. This also meant a new logo and splashscreen was required; these were designed in line with the colour scheme of the UniBank re-brand. The logo image incorporated both a graduation hat (to represent university students) and a wallet (to represent money) while the splashscreen featured the new name of the app and the new colour scheme identified by the re-brand. All other pages and features of the app retained the original style guide.

Table 2: Timeline for Wallet\$mart Project

		Design Elements	Content	Pilot
2019	Jun	Initial concept and design		
	Jul	UX Workshop		
	Aug	Style Guide	Draft diagnostic test	
	Sep	App name, logo & splashscreen	Budget tool categories	
	Oct	Budget & diagnostic tool	Topic 1-2 lessons	
	Nov	Lesson functionality	Topic 3 lessons Diagnostic test	
	Dec	Lesson functionality	Topic 4-6 lessons Video recordings	
2020	Jan	Review logo, name & splashscreen	Topic 7 lesson Video edits	
	Feb	Review functionality of all app content	Case Studies, About us	Registration system for students
	Mar	Update logo, name & splashscreen	Glossary & FAQs Voice recordings	SEO Recruitment plan
	Apr	Quiz design & testing	Quizzes for lessons	Recruitment email & registration
	May	Testing	Finalise lesson content structure	Registration Download open
	Jun	Bug fixing	Minor edits	App download/usage
	Jul			App download/usage
	Aug			App usage
	Sep			App usage/ recruit for survey
	Oct			App usage Survey evaluation
2021	Nov			App usage Survey evaluation
	Dec			Survey evaluation Interviews
	Jan			Evaluation Report
	Feb			Presentation of results
	Mar			Release of results
	Apr			Publication

Figure 5: Wallet\$mart Score

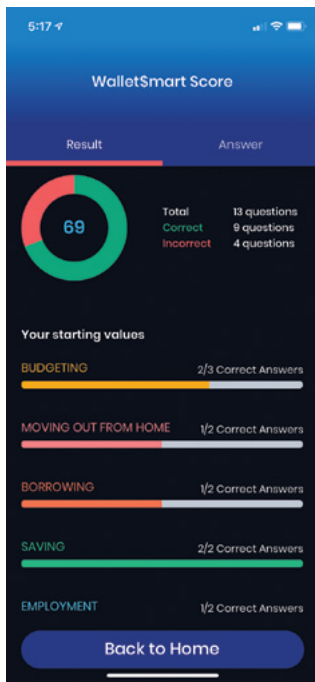


Figure 6: Screen shot of topics menu display



App content

The app included the following content:

- About 'Us';
- An entrance/exit diagnostic test;
- A budget tool to plan and track spending;
- 7 module topics comprised of bite-sized lessons;
- Short videos featuring students;
- Case Studies;
- Short lesson quizzes;
- Useful links to other useful web pages and resources;
- Glossary of terms; and
- Frequently asked questions.

The 'About Us' page included information about the purpose of the app as outlined below:

UniBank have partnered with Western Sydney University to support university communities by developing an App that provides just-in-time information about personal finance items such as budgeting, insurance, superannuation, employment, moving out of home, buying a car, saving and borrowing.

By having easy access to this personal finance information, you will have the tools you need to make wise decisions when it comes to your finances.

The App includes a budgeting tool to help you plan and track your spending.

Videos and short quizzes are also included to ensure you understand what you need to know. A self-assessment tool gives you a Wallet\$mart Score and directs you to the areas where you need the most help.

The page also included a blurb about both UniBank and Western Sydney University.

Upon signing into the Wallet\$mart app for the first time, students are presented with a diagnostic self-assessment tool to obtain their 'Wallet\$mart score'. This tool asks students a range of questions to assess their financial literacy and financial capability, as well as demographic questions. This is done for two main reasons. Firstly the responses to these questions will help to direct students to the modules in the app that are likely to be most helpful to their personal circumstances.

Secondly, the same questions are asked once students have completed all lessons so that students can re-assess themselves and (hopefully) see an improvement in their Wallet\$mart score (refer to Appendix 1 Wallet\$mart score). The Wallet\$mart score was also a helpful measure for the research team to use in evaluating the effectiveness of the app in improving financial capability of university students. Figure 5 shows a screenshot sample of the Wallet\$mart Score results display. Note that the results include a breakdown of responses by topic area so that students can see the areas where they need the most help.

The app covers seven different topic areas: borrowing, budgeting, buying a car, education fees, employment, moving out of home and saving. Figure 6 shows a sample of how the topics are displayed in the app.

Each topic area is then broken down into small bite-size lessons that contain case studies, short videos featuring students, worked examples, links to further resources and short quizzes where students can earn badges. The app also provided the function to listen to the lessons being read aloud to them through a 'listen' function. Figure 7 shows a sample of how these lessons are presented and Table 3 provides a summary of the app topics and lessons.

To assist with the budgeting topic, a budget planner was also incorporated into the app. This was able to be accessed from any page in the app via the footer in the app (refer Figure 7). A sample of the budget planner feature is provided in Figure 8.

A glossary (dictionary of terms) was also included to further assist students with their knowledge and understanding and to provide a quick reference tool for students (see Figure 9). The glossary terms were searchable and listed in alphabetical order with examples included where appropriate. A help function was also enabled in the settings section of the app containing a list of frequently asked questions (FAQs). Examples of the FAQs are provided in Appendix 2.

App participants

The app participants were drawn from the diverse student population at Western Sydney University. The group of participants included undergraduate and postgraduate students, both local and international across a range of different living conditions (living at home, living independently) and both with and without dependants. There were a total of 564 students who originally registered to be part of the app pilot. However, 34 of these registrations contained email addresses that were unverifiable² resulting in 530 students being given free access to the app as part of the project.

² These emails were unverifiable due to mis-spelling or omissions from the email address. For example, '.com' instead of '.com'. Where students used their student email accounts, some had omitted the word 'student' from '@westernsydney.student.edu.au' or had a typo in the word 'western' or 'student'. Thus, registration and log-in details were unable to be delivered to these participants. It is recommended that future iterations of the app include email verification as part of the registration/log-in process.

Figure 7: Sample of lesson and badges

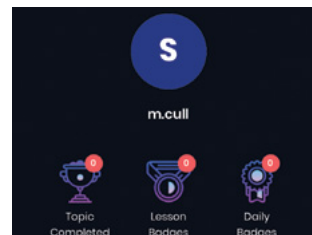
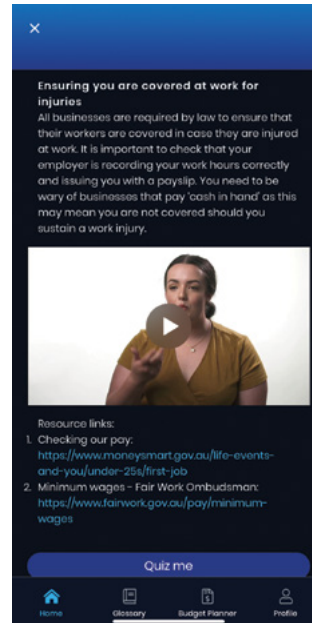
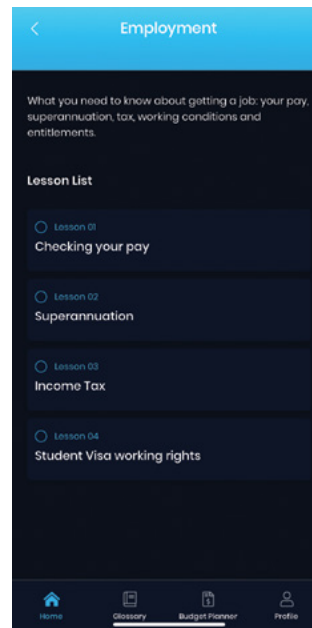


Figure 8: Budget Planner

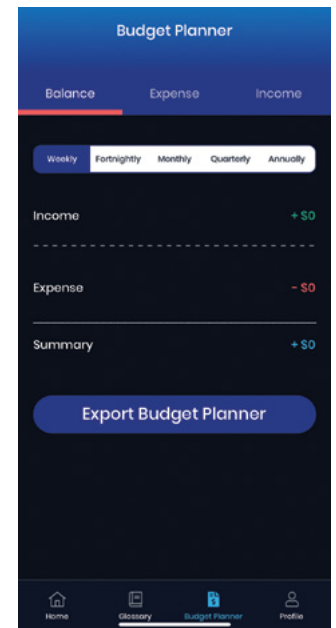


Figure 9: Glossary example

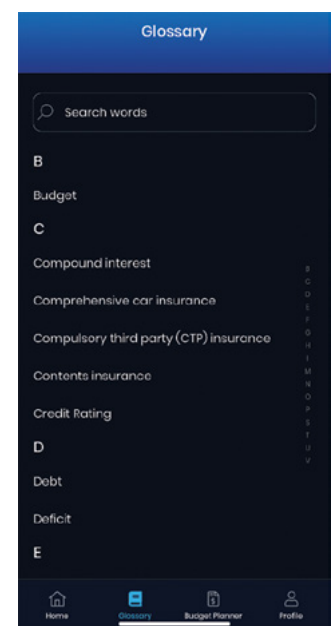


Table 3: App topics and lessons

Module/ topic name	Content structure	Lessons	Video/s	Resource links
Budgeting	Introduction 'Money-in' versus 'Money-out' The budget process Budgeting tips Other tips from students	Planning your budget Using the budget tool in this app Budgeting tips	INT 1 VID 6 INT 2 VID 2 & 3 INT 3 VID 1 INT 4 VID 4 INT 5 VID 4, 5, 6 INT 6 VID 4 & 5 INT 7 VID 2 & 3 INT 7 VID 3 INT 8 VID 3	1. Simple ways to save money 2. Eating healthy on a budget – shopping, cooking and eating for university students 3. Budgeting: Take charge of your money 4. Managing on a low income
Saving	Introduction Emergency fund Saving steps How to find the right savings account Opening a bank account Savings Tips The power of compound interest	Saving steps and savings goals Savings accounts Savings tips The power of compound interest	INT 1 VID 5 INT 3 VID 2 & 4 INT 5 VID 3 INT 6 VID 2 INT 8 VID 4	1. Saving goals calculator 2. MoneySmart: compound interest calculator
Student Fees & Loans	Introduction - Do you know how much your university fees are? Higher Education Loan System (HELP) Loans How and when do I have to pay my HELP debt? Is interest calculated on my HELP debt? I am an international student – what help is available for me? Scholarships and grants	Higher education loans Scholarships and grants	INT 1 VID 8 INT 4 VID 5 & 6 INT 6 VID 1 & 3	1. Find out more about the annual thresholds and repayments 2. Information about scholarships at Western Sydney University

Module/ topic name	Content structure	Lessons	Video/s	Resource links
Moving out of home / to Australia	Introduction Living expenses One-off costs Living with others	Living expenses Living with others	INT4 VID 1, 2 & 3 INT 7 VID 4 INT 11 VID 2	1. Goodbye family, hello bills. 2. Share housing, including rights and obligations 3. Home insurance 4. Contents insurance
Employment	Introduction Checking your pay, working conditions and entitlements How much Superannuation (‘Super’) should you earn? How to check Super Income Tax Lodging a Tax Return Ensuring you are covered at work for injuries Working rights for international students	Checking your pay Superannuation Income tax Student visa working rights	INT 3 VID 3 INT 1 VID 1-4 INT 3 VID 5 INT 5 VID 1 & 2 INT 7 VID 1A INT 7 VID 1 INT 9 VID 1, 3 & 4	1. Checking your pay 2. Minimum wages - Fair Work Ombudsman 3. Lodging your first tax return 4. Tax Clinic /Tax Help Programs
Buying a car	Introduction Buying the car Insurance for your car Types of car insurance Understanding your car insurance policy Running costs	Buying the car Car insurance Running costs	INT 1 VID 7 INT9 VID 8 INT9 VID 9 INT11 VID 1 INT11 VID 6 INT11 VID 7 INT11 VID 8	1. Service NSW 2. Money smart website: car insurance
Borrowing	Introduction Types of borrowing Making repayments Why is my credit rating important? Types of interest No interest loans (NILS)	Borrowing Basics Making repayments Interest on loans	INT9 VID 6 & 7 IN 8 VID 5	1. National Debt Helpline 2. MoneySmart calculator – credit card, personal loan, buy now-pay later

Evaluation Design and Methods

This evaluation was undertaken using mixed methods such as app usage data, a survey questionnaire and interviews to provide further insight. The following research questions were used to explore the effectiveness and impact of the financial capability app:

1. *Can a mobile financial literacy based 'App' improve the financial capability of university students?*
2. *What are the key factors to consider in developing a mobile 'App' to improve the financial capability of university students?*
3. *How can a mobile financial literacy 'App' change the attitudes and behaviours of university students with regards to personal financial management?*

Evaluation Participants

The participants in the evaluation were drawn from the diverse student population at Western Sydney University. The group of participants included undergraduate and postgraduate students, both local and international, across the University. There were a total of 530 students who downloaded the app and 86 students who participated in the survey questionnaire. Interviews were also conducted with four students to gain further insight into the app user experience and the influence on financial capability. All students have been anonymised for the purpose of this report.

Ethical Procedures

The research methods employed in this evaluation were approved by Western Sydney University's Human Research Ethics Committee (approval number: H13531). All prospective participants were provided with a plain language participant information sheet which explained the research project and the type of data that was being collected. This evaluation was conducted with participants who gave informed consent to participate.

Data Sources

Data informing this evaluation were drawn from the following sources:

App usage statistics

Data showing how students used the app was collected in the back-end of the app. This data included the amount of time that students spent on different topics in the app, how students performed in the entry/exit diagnostic tests and how students performed in the quizzes pertaining to the various lessons that they completed within the app.

Surveys

An online survey (Appendix 3) was designed and administered in Qualtrics for students to provide feedback on the app to assist in addressing research questions 1, 2 and 3 relating to the perceived impact on financial capability, how engaging they found the mobile app (including best aspects and suggestions for improvement) and the extent to which the app changed attitudes and nudged students towards the right financial behaviour. A sample of the survey questionnaire is contained in Appendix 3.

Surveys were administered at the end of a 5 month period that students were given to download and use the app and responses were anonymous. A total of 86 students participated in the survey, however half of the participants only partially completed the survey with 43 fully surveys being fully completed.

More than 90 percent of the respondents were aged under 30 years old with 40% having a first language other than English. Just over 60 percent of respondents were undergraduate students with 26% studying at postgraduate level and 5% undertaking a PhD. Living arrangements varied across the cohort. The demographic profile of participants is provided in Figure 10 (incomplete responses reported as 'missing').

Interviews

Semi-structured interviews were conducted with students who had used the app. Interviews were selected to gain in-depth information about the students' experiences with the app and how it may have influenced their financial capability as well as their attitudes and behaviours towards personal financial management. Interviews were also expected to gain detailed feedback from students regarding suggestions to improve the app in the future. There was initial interest from sixteen students to participate in an interview as part of the project. However, some students did not provide full or accurate contact details to allow them to be contacted, while after several follow-up attempts, others did not return a completed consent form to allow them to participate in an interview. There were four students who provided both written and verbal consent and participated in the interviews. The semi-structured interviews were carried out after the app had been available for download and use for five months and after the survey had been administered. The interviews were undertaken individually via a digitally recorded phone conversation which was later transcribed for analysis.

A sample of the open-ended semi-structured interview questions is included in Appendix 4.

Data analysis

Data from student interviews was audio-recorded and transcribed. This data, along with the survey data, was then analysed to identify emerging themes in response to the evaluation questions. The app usage statistics were also analysed to determine the impact of the app on the financial capability of students in terms of the lessons where students spent their time and the quiz and Wallet\$mart score results.

Figure 10: Demographic profile of survey participants

		Frequency	Valid Percent	
Gender	Male	37	45.1	
	Female	43	52.4	
	Prefer not to say	2	2.4	
	Total	82	100.0	
	Missing	System	4	
Total		86		
Language	English	26	60.5	
	Not English	17	39.5	
	Total	43	100.0	
	Missing	System	43	
	Total	86		
Study Type	Postgraduate	11	25.6	
	Bachelors	26	60.5	
	PhD	2	4.7	
	Not currently studying	3	7.0	
	Recently graduated	1	2.3	
	Total	43	100.0	
	Missing	System	43	
Total		86		
Living Arrangement	On my own	5	11.6	
	With a partner	12	27.9	
	With dependent children	1	2.3	
	Friends/other students	6	14.0	
	Parents	16	37.2	
	Close family	3	7.0	
	Total	43	100.0	
Missing	System	43		
Total		86		
Age Group	18-21	28	43.7	
	22-25	22	34.4	
	26-29	9	14.1	
	30-33	4	6.2	
	Over 33	1	1.6	
	Total	64	100.0	
	Missing	System	22	
Total		86		

Evaluation Results

The objective of the project was to develop and trial an app aimed at improving the financial capability of university students by providing just-in-time information about personal finance items such as budgeting, insurance, superannuation, employment, moving out of home, buying a car, saving and borrowing. The app was to be designed to provide easy access to authoritative, reliable personal finance information so that university students have the tools to make wise decisions when it comes to their finances. A self-assessment tool would feature in the app to direct students to the areas where they need the most help.

The evaluation of the project would determine the effectiveness of a mobile app in improving the financial capability of university students and also assist in future app development. In addition the evaluation would assist in determining the value of offering the app to a larger cohort of university students around Australia.

This section presents an analysis of the data gathered from app usage data, student surveys and interviews to respond to the research questions:

1. *Can a mobile financial literacy 'App' improve the financial capability of university students?*
2. *What are the key factors to consider in developing a mobile 'App' to improve the financial capability of university students?*
3. *How can a mobile financial literacy 'App' change the attitudes and behaviours of university students with regards to personal financial management?*



The Influence of the Wallet\$mart App on Student Financial Capability

Usage data, survey data and student interviews all indicated the Wallet\$mart app had a positive influence on the majority of participating students' financial capability. Financial capability was measured against the definition provided earlier in the background section of this report and refers to the combination of attitude, confidence, knowledge and skills to make decisions best suited to one's personal circumstances.

More than 75% of survey respondents indicated that their financial capability had increased since using the Wallet\$mart app, as shown in Table 4.

In explaining how the app influenced their financial capability, students commented openly in the survey free response section that the app had made them more aware of topics that were relevant to their personal circumstances and that the app provided them with access to information that improved their knowledge and understanding which positively influenced their financial capability. Some examples of these responses are as follows:

I thought my financial capability was high but I have been able to improve dramatically since having wallet smart.

I did not know much about how superannuation works and felt this information increased my capabilities.

Knowing how to access information to help me manage my money.

I had some knowledge of the majority of topics whether in depth or not so in depth. I felt the app increased and affirmed my previous knowledge and attitudes towards my finances.

The capacity to address individual circumstances was also strongly evident in the interview data. For example, one international student was very confident with financial literacy but did not understand specific topics in relation to the Australian context. In this case, the student found the app was particularly helpful in assisting her understanding of superannuation and taxation. Another student was planning the purchase of a car. Her engagement with the app allowed her to make a more informed decision. She commented: "I realised with my current savings and financial situation, it's best to put off buying a car as it is now and sticking to a [savings] cycle".

"Had I not used the app, I probably would have made a decision of jumping ahead and getting a car."

(Interview response)

Table 4: Financial capability of students since using the app

Question		Frequency (N = 41)	Percent
Using the definition provided ('the combination of attitude, confidence, knowledge and skills to make decisions that best suit one's personal circumstances'), would you say that since using the app, your financial capability...	Increased	31	75.6
	Stayed the Same	4	9.8
	Unsure	6	14.6
	Total	41	100.0

Table 5: Likert scale statements on financial capability

#	Statement	N	Mean	Mode	% Agree
1	I learned something valuable about managing my money	43	4.14	4	86
2	Improved my knowledge about how to manage my money	43	4.02	4	84
3	Helped me budget	43	3.86	4	72
4	Helped with important decisions about my financial situation	43	3.72	4	67
5	Made me more confident about making financial decisions	43	3.93	4	72

Note: 5 = strongly agree; 4 = somewhat agree; 3 = neither agree or disagree; 2 = somewhat disagree, 1= strongly disagree.

“I feel like I have more of an ability to be responsible because I have the information now. So like I feel like I’m more motivated to be very careful and make very smart decisions about my money.”

(Interview participant)

The app was also found to positively influence all individual aspects of financial capability such as attitude, confidence, knowledge and skills as demonstrated by the Likert scale survey results in Table 5. Students were asked to indicate the extent to which they agreed with financial capability statements 1-5 with regards to the app with ‘5’ representing strongly agree and ‘1’ representing strongly disagree. Students mostly agreed with each statement as indicated in the table, with the response to statement 1 having the strongest rating as to the influence of the app on financial capability.

The strong results for both statements 1 and 2 indicate that the app assisted students greatly with the knowledge aspect of financial capability with the mean ratings at 4.14 and 4.02 respectively. In terms of the skills aspect, the app was found to help students with their budget as indicated by the results for statement 3. It is likely that help with budgeting also contributes to student confidence. Both statements 4 and 5 show that the app had a positive influence on student decision making while statement 5 indicates that the app made students feel more confident about making financial decisions; an important aspect of financial capability.

Student comments in the free response area of the app and in interview data assist in further understanding the influence that the app has had on the various aspects of financial capability. The app appears to have had a positive influence on the financial capability of students.

The following sections provide exemplars of the students’ comments as to how the app influenced each aspect of financial capability.



Attitude

Attitude is an important aspect of financial capability as it ultimately decides how one may (or may not) use their knowledge and skills to make personal financial decisions. Student comments from the survey indicated that the app had a positive impact on their attitude towards their finances:

Easier to keep track and manage expenses without being overwhelmed.

I am more aware about superannuation, insurance and moving out expenses.

The information motivated me and increased my financial literacy.

Data from surveys reflected comments made by interview participants, who each reported that the app had positively influenced their attitudes to some degree. The interview data also indicated that the improvements in attitude are likely due to the capacity of the app to address the individual needs of users.

Confidence

As indicated in the background section of this report, confidence and self-efficacy has been shown to be a strong antecedent to financial capability. Students indicated in Statement 5 (Table 5) that the app was able to make them feel more confident about making financial decisions. This is further supported by the following sample of student comments from the survey:

Gained more knowledge and confidence in my understanding.

I gained knowledge from the modules. This has translated into increased confidence.

I have more knowledge and I know I have the information I will need in multiple places. I also feel more confident in the knowledge I already had.

Knowledge and Skills

Before students are able to make appropriate financial decisions that suit their personal circumstances, they require the knowledge and skills on which to base these decisions. The app provided access to a range of information relevant to university students to improve their knowledge and assist with their decision making with 84% of students agreeing that the app improved their knowledge about how to manage their money (refer Statement 2, Table 5). Further, 72% of students found the budget tool in the app assisted them to improve their financial management skills (as indicated in Statement 3, Table 5). Student comments from the free response section of the survey also allude to how the app influenced their financial capability through improved financial knowledge and skills as follows:

My knowledge was very low before using this app.

Better financial knowledge.

Greater idea of key financial information in regards to Australia which is beneficial for an international student.

Learnt more about how to handle my finances.

More knowledge on simple (but felt complicated) things.

It also gave me tools to manage my finances.

"The information motivated me and increased my financial literacy."

(Student survey respondent)

Financial Literacy

The app utilised a pre and post diagnostic test to measure financial literacy as part of the Wallet\$mart score (refer Appendix 1 Wallet\$mart score, questions 1, 6 & 7). A change in the students' Wallet\$mart score provides an indication as to whether the app improved students' financial literacy, specifically the 'Big 3' financial literacy questions (Lusardi and Mitchell, 2011).

Students who utilised all the features of the app and completed the entrance test as well as the exit test showed an improvement in all of the 'Big 3' questions as outlined in Table 6. Students showed an overall improvement of greater than 81%. For the question on compound interest (question 1), students improved by 120% with all students answering this question correctly on the exit test compared to 45% of students answering the same question correctly on the entry test. Similar results were found for the question on the time value of money (question 6) with all students answering the question correctly on the exit test. The question on investing (question 7) did not show as great an improvement with 55% answering the question correctly on the entrance test and 64% on the exit test. These results are a reflection of the ability of the app to influence a student's financial literacy as while the modules covered included a topic on interest and a specific lesson on compound interest, there was no topic or lesson that specifically targeted investing.

In addition to the Big 3 questions, the pre and post questions as part of the Wallet\$mart score included a question on superannuation and one on compulsory car insurance as indicated in Appendix 1 Wallet\$mart score questions 3 and 5 respectively. The superannuation question asked students to choose the correct rate for the superannuation guarantee which would apply to many working students. The pre-test showed 64% of students answered the superannuation question correctly but after students had completed the employment module (including a superannuation lesson), an improvement in the post -test resulted in 100% of students answering the question correctly. Similarly the question which asked students what was covered by Compulsory Third Party (CTP) insurance (green slip) showed an improvement from 27% correct responses to 100% correct. This indicates that the lessons on car insurance had a direct impact on students understanding of what is covered by different types of car insurance.

Table 6: Big 3 pre/post test results

Question ref	Question	Entry test	Exit test
1	Compound interest	45.45%	100.00%
6	Time value of money	45.45%	100.00%
7	Diversification/Investment	54.55%	63.64%

Key Factors to Consider in Developing a Mobile App to Improve the Financial Capability of Students

Results from the student surveys and interviews provided useful feedback regarding the key factors to consider in developing a mobile app to improve students' financial capability. The app usage data also provided some helpful insights.

App content

The app content covered seven topic areas, being borrowing, budgeting, buying a car, education fees, employment, moving out of home and saving. Students were asked in the survey to rate how useful they found these topics in the app, using a Likert scale ranging from 'extremely useful' (5) through to 'not at all useful' (1). In addition, students were asked how useful they found the Wallet\$mart app and the insurance and superannuation components of the respective modules on buying a car and employment.

Overall, survey results indicate that students found all of the topics and the Wallet\$mart score to be useful. The results suggest that students found the budgeting and savings topics most useful, with mean scores of 3.95 and 3.98 respectively and a mode of 5 ('extremely useful'). The Wallet\$mart score followed in terms of 'usefulness' with a mean score of 3.8. The remaining topics and modules, in order of how useful students found them were employment, superannuation, buying a car, insurance, borrowing, moving out of home and education fees. A summary of the results is included in Table 7.

The results on the usefulness of various topics signify that all of the topics included in the app were relevant to university student needs and should continue to be provided in future versions of the app. While some topics were rated more useful than others, this may also be a reflection of the different circumstances of the respondents. Interestingly, two out of the four interview participants indicated that the topic of investments should be included for students who are more confident with the basic concepts of financial literacy. However, the results show that both budgeting and saving are topics that are useful to the majority of students in a range of situations and thus essential parts of a mobile app designed to improve financial capability of university students.

Table 7: Usefulness of app topics

	Insur	Budget	Score	Super	Employ	Car	Moving	Educ Fees	Borrow	Saving
N	41	41	41	41	41	41	41	41	41	41
Mean	3.68	3.95	3.8	3.68	3.76	3.68	3.63	3.51	3.66	3.98
Median	3	4	4	4	4	4	4	4	4	4
Mode	3	5	4	4	4a	4	4	3a	3a	5

a. Multiple modes exist. The smallest value is shown

Note: 5 = extremely useful; 4 = very useful; 3 = moderately useful; 2 = slightly useful, 1= not at all useful.

App look & feel

Students were asked about how they found the look and feel of the app. Survey respondents indicated the extent to which they agreed with the statement ‘I liked the look and feel of the app’ using a five-point Likert scale (5 = strongly agree, 1 = strongly disagree). The mean result of 3.84/5 indicates that overall students liked the look and feel of the app, with over 74% of students agreeing with the statement. The results are shown in Table 8.

While the results are mostly positive, there were almost 12% of students who were undecided as to whether they liked the look and feel of the app and 14% who did not like the look and feel of the app. These results indicate that there is still some room for improvement in this aspect of the app development.

Interview feedback provided greater insights into how the look and feel of the app could be improved as indicated in the comments below:

It seems very basic and then, like, you know, it just seems the same. Like I mean, I am being brutally honest here but like, there wasn't a lot of effort put into it.

Like it looks clean and nice but not like super like stylised or anything. I don't know but it is a bit risky because some people don't like the style of it. So like I think just some options and maybe just giving the app more character I suppose.

App use

With regards to the use of the app, students surveyed generally found the app easy to use, fun, and a handy reference tool. Eighty-four percent of respondents also said they would recommend the app to others. The app being ‘easy to use’ had the strongest rating from students, with a mean of 4.3/5 and 86% of students agreeing that it was easy to use. Results are shown in Table 9.

While a large proportion of students found the app easy to use, a smaller proportion found the app to be ‘fun’ (60%). This was expanded on in the interviews, where two of the participants specifically mentioned that the app would be improved with the inclusion of gamification to make it more appealing and fun. Conversely, one student commented that the quizzes were a fun, gamified aspect of the app that she particularly enjoyed.

Making a finance app that is both easy to use and fun is a significant challenge in developing an app to improve the financial capability of students. Some ‘fun’ features can also be more expensive to develop and maintain; this is a future consideration for the app.

Table 8: Survey results: the look and feel of the app

Rating for statement ‘I liked the look and feel of the app’	N	Percentage of responses	Score*
Strongly Disagree	2	4.7	1
Somewhat Disagree	4	9.3	2
Neither Agree or Disagree	5	11.6	3
Somewhat Agree	20	46.5	4
Strongly Agree	12	27.9	5
Total	43	100.0	
Mean score			3.84

* 5 = strongly agree; 4 = somewhat agree; 3 = neither agree or disagree; 2 = somewhat disagree, 1= strongly disagree.

Table 9: Survey results: app use

	Fun	Ref tool	EasyUse	Recom
N	43	43	43	43
Mean	3.65	4.07	4.30	4.19
Median	4.00	4.00	5.00	4.00
Mode	4	4	5	5
Percent agree	60%	81%	86%	84%

* 5 = strongly agree; 4 = somewhat agree; 3 = neither agree or disagree; 2 = somewhat disagree, 1= strongly disagree.

Best and worst aspects of the app

Survey respondents identified both the best and worst aspects of the app in two free response questions; 'explain what you like least (most) about using the Wallet\$mart App'. The most common themes as to what students liked the most was how easy the app was to use and the information it contained. In addition, students also mentioned the budget tool, car module, quizzes and external links were the best aspects of the app. A sample of representative comments is below.

Convenience and helpfulness.

Friendly UI, easy to understand and access.

How easy and simple it is to use.

I like using the glossary to help define parts of financial literacy.

It's so informative and should've been used prior to finishing yr12.

Relevant information for my current circumstances. I like that there were external links provided for more info.

Great budgeting tool, learnt lots of new financial tips

The organised structure of the modules, how clearly the information was written, the provided links. I didn't feel like I was being talked down to or like the writing was too stylised or "how do you do fellow kids" etc.

The quiz at the end of a lesson, where you can choose an option till you get the right answer.

There was an overwhelming positive response to the question about what students liked most about the app and this flowed over into the section on what students liked least about the app where some students wrote positive things, for example, 'not much to fault'. However, there were also some key takeaways from the question about what students liked least about the app. The main themes here were that students would have liked the budget tool to be more flexible with more expense categories, that maybe the aesthetics of the app could be improved and there was some additional content that students would have liked with regards to savings and tax. Others mentioned that they would have liked to see notifications to remind them to use the app and that at times the app seemed to be slow to load. A sample of the comments are included below and are beneficial in considering further development of the app.

I wanted to know more about tax return in Australia but couldn't find in glossary.

Missing savings goals/trackers

Not enough categorizing for different expenses (e.g. laundry expense is not available in the app).

The budget was inflexible and couldn't help me plan when income was not steady.

Not significant but the icon seemed pretty dated and lacked aesthetics.

The paragraphs of writing - space out the paragraphs more.

Quizzes could be more detailed and fun, the appearance of the app could be more appealing, the award system could be more appealing(cute/fun?)...

It seems like the app crashes a lot and can be very slow sometimes.

That it doesn't send you notifications so you remember it's in your App Library.

Too many videos in one lesson, it became boring.

Again, the interview data reflected the survey responses in relation to what students perceived to be the best and worst aspects of the app. The static nature of the budgeting feature of the app appeared as a theme as did the need for reminders such as push notifications to make the app more interactive and engaging. On the other hand, two out of four interview respondents specifically mentioned that they enjoyed the use of videos and the fact that they provided a diverse set of real-life examples.

Student engagement

Continued use of the app

More than ninety percent of student survey respondents indicated that they would continue to use the Wallet\$mart app if it remained available to them. Students were asked via a free response question to provide the main reasons why they would continue to use the app. The most significant theme relating to the continued use of the app was that the app was easy to use. Students also indicated that they would continue to use the app because the information was helpful, easy to understand, improved knowledge and assisted them in managing their finances. The following quotes are representative of the students' sentiments:

Easy and simple to use.

I like having an app to keep track of my expenses.

It helps me budget and gives me advice for budgeting and other financial aspects.

It's convenient and very helpful.

It's easy to understand and also provides you basic or useful understanding all in one app.

I have found that the information provided is new to me and written in a way I understand quite well.

I have low knowledge of finance and I would like to think this app could improve that.

It helps manage my finances.

"It's easy to understand and also provides you basic or useful understanding all in one app."

(Student survey respondent)

The survey responses also provided evidence that students found the app helped them budget:

I like having an app to keep track of my expenses.

It helps me budget and gives me advice for budgeting and other financial aspects.

However, while the budget tool was the second most popular reason that students gave for continuing to use the app, one student also stated that the budget tool would limit their future use of the app as they would want additional expense categories and an ability to produce reports that showed a breakdown of their expenses and savings:

...the budget is limited in functionality. I cannot add or rename categories of income or expenditure. There is no method of comparing planned vs actual expenses. There is no ability to analyse and produce reports on breakdown of spending/saving.

Further, those students who indicated that they would be less likely to continue to use the app felt that they had mastered all the topics covered in the app as indicated by the following comments:

The app is good for gaining quick first-off knowledge about finances, however, it doesn't have much use after the modules are complete.

This would require further updates and the addition of new topics on a regular basis.

The app usage data indicated that there was significant variation in the time spent on each module by different student users. Some students spent up to 60 hours to complete all lessons and quizzes for a specific topic (for example, savings) while others may have spent only around 10 minutes on the same topic. In both cases, students were still able to achieve 100% in their quiz score for the respective topic. This indicates that the app was used by students with a range of abilities, with some students stronger (or weaker) in some topic areas than others and needing more or less time to master specific topics.

Motivating students to use the app

The student survey asked participants what they thought would motivate other students to use the Wallet\$mart app. This question received 50 responses from student participants. The most common theme in the survey responses was 'incentives'. Incentives suggested included vouchers, raffles, promotions and prizes for quizzes. The other main themes from this free response question were related to the budget tool and showcasing financial freedom. There were also some useful suggestions such as adding complexity to the quizzes and making the app more interactive through challenges or a live chat option. It was also suggested that more advertising and publicity might motivate more students. The following quotes are representative of the students' sentiments:

A live chat to ask questions or even a q and a open for everyone to ask and answer.

Financial freedom and understanding.

I think if the quizzes were more complex and if the app felt more interactive overall.

Incentives like quarterly quizzes to win prizes.

Weekly/monthly money challenges to complete- making it more socially interactive with other students.

More publicity.

As stated in the previous section, the incorporation of gamification features is something students feel would encourage continued use of the app. The incorporation of other ways to engage with students was also a feature of the interviews. The following excerpt provides a sample of one student's response:

I think that one thing for me at least is that once I had completed the educational module - I'm not sure what extent this is going to be practical, but I was hoping for a little bit more of what's a regular update on like the module. Little bits of information even if there was like a monthly newsletter. Like a way - to you know engage with the app past that point when I finished the module. Would have been a way to help me keep engaged with the app. But I also recognise that (a) it's a lot more work and (b), it's potentially out of scope of what you're looking at too.

The collective sentiment of interview participants indicates that regular updates, push notifications and additional opportunities of face to face workshops or seminars would increase motivation to continue to engage with the app once all modules have been completed.

**... push notifications
and additional
opportunities of face
to face workshops
or seminars would
increase motivation
to continue to engage
with the app...**

"I really loved the idea of the quizzes themselves, but I think they could like be really improved and they could like really help the people using the app."

(Interview Participant)

Student recommendations to improve the app

Students were asked to provide any suggestions they had to improve the app via a free response option. There were 5 main themes to the suggestions provided that were also reflected in the interview data. The first related to the budget – with suggestions that it be more flexible. Other themes included adding more complexity, adding a savings tracker, utilising push notifications and more sophisticated gamification. There was also one suggestion to add a shopping option. Student quotes that represent these suggestions are as follows:

Adjust budget to allow it to more flexibly manage actual income/expenses.

Classify knowledge into beginner, intermediate, advanced, further learning levels for users to progress to continue to develop financial knowledge.

Include notifications.

Including a saving goal/savings tracker would be motivating.

Making the quizzes more detailed/fun, making the appearance/award system more cute or fun...

Maybe include a few easy shopping options.

Use gamification to a greater degree to get users hooked.



Changes to Awareness, Attitude and Behaviour of Students: Personal Financial Management

Results from the survey and interviews indicate that the app had a positive impact on students' awareness, attitude and behaviour with regards to personal financial management.

It appears from the survey data (refer to question 9 and question 20 in Appendix 3 Student Online Survey) that the app substantially changed the financial behaviour of students. Question 9 asked students to rank on a five-point Likert scale (5 = strongly agree, 1 = strongly disagree) their agreement with the statement 'I have taken action/changed my behaviour based on information in the app'. Results showed over 65% of student had taken action /changed their behaviour based on information contained in the app. The results are shown in Table 10.

In addition, Question 20 of the survey included 8 statements pertaining to financial behaviour. Students utilised a five-point Likert scale (5 = strongly agree, 1 = strongly disagree) to indicate the extent to which they agreed with each statement. Overall, students had positive financial behaviour across all of the statements. The statement with the strongest response was with regards to tracking expenses, with a mean of 4.27/5 and 90% broad agreement. It is likely that the budgeting module and budgeting tool assisted in achieving this result. Seventy-three percent of students also indicated that they had a budget and a long term plan for their finances.

Regular savings and paying bills on time also rated highly with a mean of 4.15/5 (85% broad agreement) and 4.29/5 (83% broad agreement) respectively. While the literature has shown that confidence about making financial decisions often rates low among university students, 71% of the student respondents indicated that they felt confident about making financial decisions after using the app. Further, statement 3 indicates that only 32% of students spend all their income as they get it and the mean rating indicated that they mostly disagreed with the statement. Table 11 shows the survey result details regarding statements about the financial behaviour of participants.

Table 10: Student action taken based on information in app

Statement	N	Mean	Median	Mode	% Agree
I have taken action/changed my behaviour based on information contained in the app.	43	3.70	4.00	4	65

Note: 5 = strongly agree; 4 = somewhat agree; 3 = neither agree or disagree; 2 = somewhat disagree, 1= strongly disagree.



Data from student interviews strongly supported survey findings and provided further in-depth information with regard to students' perceptions of how the app changed their awareness, attitude and behaviour towards personal financial management:

I think I feel like I have more of an ability to be responsible because I have the information now. So like I feel like I'm more motivated to be like very careful and make very smart decisions about my money.

I think just like keeping on track instead of sort of spending or like giving up. Like I'm not going to reach that goal, I'll just give up. And start thinking about well no I'm actually on – I'm not going to make it by the date but at least I've made some progress and that's still a step forward.

As I said before, it's given me like the basics to grow my financial knowledge as a whole. So while I obviously can't say that it's responsible for all of it, but it's probably honestly one of the factors that set me on track to develop my financial knowledge. And as a result, I am a lot more confident about financial decisions and sort of what I'm doing with my money and how I'm managing it.

I realised that there's a lot of gaps in my knowledge in relation to this thing where...in relation to like, the Australian financial system. And then, knowing that I'm not perfect and that I can improve and the means to improve are right there in the app, because it was, like, you know like with terms and all that.

Table 11: Financial behaviour of students

#	Statement	N	Mean	Median	Mode	% Agree
1	I track my expenses	41	4.27	4	4	90
2	I have long term plans for my finances	41	3.90	4	4a	73
3	I spend all my income as I get it	41	2.59	2	1	32
4	I save on a regular basis	41	4.15	4	4	85
5	I pay my bills on time	41	4.29	5	5	83
6	I know the amount of my HECS debt/university fees	41	3.95	4	5	73
7	I have a budget	41	3.98	4	4	73
8	I am confident about making financial decisions	41	3.80	4	4	71

a. Multiple modes exist. The smallest value is shown
 b. This statement is a reverse statement; a lower number represents a positive behaviour response.

Note: 5 = strongly agree; 4 = somewhat agree; 3 = neither agree or disagree; 2 = somewhat disagree, 1= strongly disagree.

Summary

This research evaluation of the Wallet\$mart app trial for UniBank posed the following questions:

1. Can a mobile financial literacy based 'App' improve the financial capability of university students?
2. What are the key factors to consider in developing a mobile 'App' to improve the financial capability of university students?
3. How can a mobile financial literacy 'App' change the attitudes and behaviours of university students with regards to personal financial management?

The following summarise the findings presented in the previous sections to respond to the research questions.

How did the App influence the financial capability of university students?

More than 75% of students surveyed, indicated that their financial capability had increased since using the Wallet\$mart app. The app influenced the financial capability of university students in the following ways:

- It provided "just in time" information to support students at an individualised level;
- The information provided was tailored to the specific needs of university students;
- The app was user friendly;
- The range of topics covered addressed students' needs;
- Students improved their knowledge and understanding of financial concepts with more than an 80% improvement overall on pre/post-test results;
- Students could put what they were learning into practice during the trial period;
- Increased awareness of topics that were relevant to students' personal circumstances;
- Students made more informed decisions on their immediate financial situation;

- Positively influenced student attitudes to personal financial management;
- Improved student skills such as budgeting; and
- Made students feel more confident about making financial decisions.

What are the key factors to consider in developing an App to improve the financial capability of university students?

There were a number of key factors that were considered and adopted for the trial version of the app that students found particularly useful in improving their financial capability. These factors included:

- Provision of videos that include real students and real scenarios are valuable and engaging;
- Easy to download;
- Free to download and use;
- Up-to-date content was written in a relevant context for learning;
- Content written and provided by an authoritative source;
- Simple to navigate and easy to use;
- Easy to understand;
- Presented in a way that is respectful (i.e. not patronising or condescending);
- Inclusion of features such as a glossary, budget tool, day/night mode/ audio voice-over;
- Self-testing tools and progress feedback;
- Links to further resources; and
- Lessons on budgeting and savings, employment, buying a car, insurance, borrowing, moving out of home and education fees are all useful to building financial capability.



In addition, the evaluation of the app trial indicated that the following factors should also be considered in future development of an app to improve university students' financial capability:

- The inclusion of gamification features to improve student engagement with the app is highly desirable to university students;
- The aesthetic features of the app should be refined (e.g. colours, logo, spacing of paragraphs);
- Options for more complex information would be useful for confident students;
- Regular updates via newsletter or push notifications are desirable to ensure continued engagement with the app;
- Incorporating a savings tracker;
- Other than digital badges, prizes or challenges for reaching a certain point in the app or passing quizzes could be incorporated to make the app more engaging; and
- More flexibility around setting up and tracking income and expenses in the budget tool.

In what ways did the App change the attitudes and behaviours of university students with regards to personal financial management?

The app has changed the attitudes and behaviours of university students with regards to personal financial management in the following ways:

- Assisted students in developing positive saving behaviours;
- Provided students with knowledge that builds their confidence with making financial decisions;
- Increased awareness of the financial complexities related to employment and significant purchases such as cars;
- Improving student engagement with financial matters;
- Providing real-time and relevant context for learning;
- Helping students to make informed financial decisions;
- Helping students to plan their finances, track their expenses and pay their bills on time through using a budget; and
- Motivating students to want to learn more about their finances.

Recommendations

The following recommendations are provided to assist in the development of the app for future roll-out to university students.

- Due to the positive impact of the app on students, it is recommended that UniBank (Teachers Mutual Bank Limited) continue to make the app available to students at Western Sydney University and consider expanding the availability to other Australian universities;
- The app content needs to remain current/up-to-date with any changes in legislation or other financial issues that may impact on students;
- An expansion of the glossary to include additional terms;
- Keep the app relatively simple and easy to use and understand;
- Include an additional module to cover 'investing' and expand on the existing employment module to include additional lessons on taxation;
- Build flexibility into the budget tool to allow for additional expense types to be included and for variations in income;
- Further sophistication of the budget tool to allow for tracking of actual expenses versus budget expenses;
- Incorporate a section for inputting financial goals and a savings tracker;
- Include more advanced gamification features to improve student engagement;
- Refine aesthetic features of the app (e.g. colours, logo, spacing of paragraphs);
- Provide options for more complex information for confident students such as being able to transition between different 'levels' (e.g. beginner, intermediate, advanced);
- Regular updates via newsletter and push notifications and reminders to ensure continued engagement with the app;
- Possibly offer incentives, prizes or 'community' challenges for achieving a certain levels of progress in the app;
- Consider changing/testing the name of the app with students;
- Further opportunities for student feedback and use of the app should continue to be included in future iterations. This will ensure that the app runs smoothly, maintains a high standard of quality and that students gain the maximum benefit from using the app;
- It is recommended that access to the app be made simpler through switching the app release from private to public on the app store which will no longer require students to register to obtain a password and have access to the app;
- It is recommended that a link to an online survey be included as an option in the app itself to encourage users to provide feedback on their use of the app;
- Offer incentives for downloading and using the app – for example, free coffee/drink, vouchers or discount on textbooks;
- Consider partnering with the University to offer a micro-credential to students who complete all lessons within the app. This could possible be included on the student's university transcript.

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Appendix

Appendix 1 Wallet\$mart score

Wallet\$mart Financial IQ Pre/post-test questions

1. Compound interest

Investing one thousand dollars over one year at an interest rate of 10% per year is:

- a) Higher if compounded daily
- b) Higher if compounded monthly instead of daily
- c) \$1000 no matter if compounded or not
- d) \$1100 no matter if compounded or not

2. Choosing between a tax offset and tax deduction

If you were earning a taxable income and given the choice between a \$500 tax offset and \$500 tax deduction, which of the following statements is correct:

- a) The \$500 tax offset is more valuable
- b) The \$500 tax deduction is more valuable
- c) A tax offset and tax deduction are the same thing
- d) The choice would depend on your tax bracket

3. Superannuation

The current compulsory superannuation rate in Australia required to be paid by employers under the 'Superannuation Guarantee' is:

- a) 5%
- b) 3%
- c) 9%
- d) 9.5%

4. Student fees and HECS/HELP debt

Select the statement below that best describes your situation:

- a) I know exactly how much I currently owe for university fees
- b) I know approximately how much I owe for university fees
- c) I have no idea how much I owe for university fees
- d) I do not currently owe anything for my university fees/I have paid all my university fees in full

5. Car Insurance

Compulsory Third Party (CTP) insurance (also known as a 'green slip') covers:

- a) Damage to the driver's car in the event of a car accident
- b) Damage to property or other cars that may be involved in a car accident
- c) Injury to the driver or passengers in the driver's car in the event of a car accident
- d) All of the above

6. Interest and inflation

Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

- a) More than today
- b) Exactly the same
- c) Less than today
- d) Do not know

7. Investing

Is the following statement true or false:

"Buying a single company's stock usually provides a safer return than a stock mutual fund."

- a) Do not know
- b) Do not know what a stock mutual fund is
- c) True
- d) False

8. Budgeting

To prepare a budget you should:

- a) Determine income and expenses
- b) Find ways to decrease spending and increase income
- c) Track daily spending
- d) All of the above

9. Credit

Which loans should you pay off first?

- a) The loans with the longest term
- b) The loans with the highest balance
- c) The loans with the highest interest rate
- d) The loans with the shortest term

10. Self-rated financial knowledge

How would you rate your own level of personal finance knowledge?

- a) I have a high level of knowledge of personal finance
- b) I have a reasonable level of knowledge of personal finance
- c) I have a low level of personal finance knowledge
- d) I know almost nothing about personal finance.

11. Compound interest / 'Big 3' financial literacy question

Suppose you had \$100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- a) More than \$102
- b) Exactly \$102
- c) Less than \$102
- d) Do not know

12. Financial Attitude

Is the following statement true or false: "I pay my bills on time."

- a) False
- b) True
- c) Sometimes
- d) Someone else pays my bills

13. Attitude

Select the statement below that best describes your situation:

- a) I have a short-term plan for my finances
- b) I have both short-term and long-term plans for my finances
- c) I have a long-term plan for my finances
- d) I live week to week with no real plan for my finances

Demographic Questions

1. Age (rolling numbers from 18 -99)
2. International or domestic student
3. Relationship status
 - Single with dependant children
 - Single with no dependant children
 - Partnered with dependant children
 - Partnered with no dependant children
4. Students' living arrangements
 - With Parents
 - Sharing rental accommodation
 - Own home
 - Renting home on own / with partner

Appendix 2 Frequently Asked Questions (FAQs)

1. What is the Wallet\$mart Score?

The Wallet\$mart Score is a score expressed as a percentage which is calculated by the App using a range of financial knowledge and attitude questions to indicate a level of financial literacy.

2. Where can I go to get financial assistance?

Your University welfare service can assist. Western Sydney University has a range of resources at: <https://westernsydney.edu.au/moneymatters> and can be contacted on 1300 668 370.

You can also contact a financial counsellor on the National Debt Helpline for free and confidential help on 1800 007 007.

3. Where can I go to borrow money in an emergency?

If you are a low income earner you may be eligible for a loan of up to \$1,200 that has no interest, fees or charges. The loan can be used to help pay for essential household items (e.g. fridge), health items (e.g. dental services) and education (e.g. computer, textbooks). Details are at <https://nils.com.au/>.

Your University welfare service can also assist. Western Sydney University has a range of resources at: <https://westernsydney.edu.au/moneymatters> and can be contacted on 1300 668 370.

4. How can I learn more about personal finance?

The MoneySmart website has some useful information, resources and tools to assist you with your financial decisions and can be accessed here: <https://moneysmart.gov.au/>.

5. What is the easiest way to save money?

The easiest way to save money is not to spend it! It is easier if you start with a small amount and gradually build it over time. It helps to also have a savings goal to work towards. You may also want to look at your spending habits to see where you can maybe cut back a little to put more into your savings.

6. Should I get a credit card?

There are times when it is appropriate to get a credit card, and if used carefully, credit cards can be used to manage funds efficiently. For example, credit cards can allow you to take advantage of special genuine sales prices on items you need. Sometimes it is also a requirement to have a credit card in order to book travel and accommodation. It is important that you already have a disciplined savings plan and budget before you get a credit card so that you know you are able to repay your credit card each month before interest accrues. So, while credit can be used wisely, it is also easy for the debt to get out of control if it is not managed carefully. You do not want to be using it to withdraw cash or purchase things you don't really need or can't afford.

7. How do I check which Bank has the best interest rate for a loan?

There are so many different loans and different financial institutions available that this can be a difficult exercise. The best approach is to firstly know how much you want to borrow, how long you want to have to repay the loan and what the loan is for. You will also need to know if it going to be a secured loan or unsecured loan and whether you are looking for a fixed rate or variable rate product. This will then narrow down the type of loan you need, whether it is a mortgage, car loan, personal loan for example. You should then compare at least 2 different providers (one might be your local branch) and make sure you check if there are other costs involved.

You can also go to a comparison website such as Canstar: <https://www.canstar.com.au/interest-rate-comparison/> or Finder: <https://www.finder.com.au/bank-interest-rates> but note that some of the links are sponsored and may not be what you are looking for, Focus on comparing the rates and conditions of the loan. You can always use this site as a bargaining tool with your current financial institution where it may be possible to negotiate a better rate or at least match the rate offered by a competitor.

Note that secured loans typically have lower interest rates than unsecured loans. Variable rate loans change as the cash rate changes (they can go up if interest rates go up or they can go down if interest rates go down) whereas fixed rates do not change over the term of the loan.

8. What is a managed or mutual fund?

A form of an investment fund where your money is pooled together with the money of other investors and managed by a fund manager who uses the funds to buy a portfolio of cash, shares, bonds and listed property trusts.

Appendix 3 Student Online Survey

Survey Questions

Q1. I have read the Participant Information Sheet and want to proceed to the questionnaire (Y/N)

Q2. What is your gender?

Q3. What is your age (in years)?

Q4. What language do you speak at home?

English (1)

Other – please specify (2) _____

Q5. Select the most appropriate response from below regarding your current study situation.

I am currently studying a postgraduate course e.g. Graduate Certificate, Graduate Diploma, Masters (1)

I am currently studying a bachelors degree (2)

I am currently studying a PhD (3)

I am not currently studying (4)

Other - please specify (5) _____

Q6. How likely would you be to continue using the Wallet\$mart App (if it remains available and free to use) [Likert scale 0 – 10]

Q7. What are your main reasons for your answer above?

Q8. Prior to using the app, had you learned about managing your personal finances from any of the following (choose all that apply):

Face-to-face workshop (1)

Audio recording (2)

Internet tutorials (3)

Other - please specify (4) _____

I have not previously used any other training method to learn about my personal finances (5)

Q9. Please indicate the extent to which you agree with the following statements about the Wallet\$mart App.[5-point Likert scale: Strongly Disagree – Strongly Agree]

- Improved my knowledge about how to manage my money

- Easy to use

- Helped me budget

- Handy reference tool

- Helped with important decisions about my financial situation

- Made me feel more confident about making financial decisions

- Difficult to use

- Easy to understand

- I learned something valuable about managing my money

- I would recommend to other students

- Fun

- I was motivated to improve my financial literacy score/Wallet\$mart score

- I have taken action/changed my behaviour based on information in the app.

- I am more likely to take control of my finances if I have access to the app.

- I liked the look and feel of the app

Q10. Select one or more of the following statements that best corresponds with your current living arrangements

- I live on my own (1)

- I live with my partner (2)

- I live with dependent children (3)

- I live with friends or other uni students (4)

- I live with my parent/s (5)

- I live with close family members e.g. grandmother, aunt, uncle (6)

Q11. Explain what you like least about using the Wallet\$mart App?

Q12. Explain what you like most about using the Wallet\$mart App.

Q13. Are there any additional features or improvements you would recommend for the Wallet\$mart App ?

- No
- Yes

Skip To: Q15 If Are there any additional features or improvements you would recommend for the Wallet\$mart App ? = No

Q14. Please describe any suggestions you have to improve the Wallet\$mart App.

Q15. How useful did you find the following topics in the Wallet\$mart App.

	Extremely useful (25)	Very useful (26)	Moderately useful (27)	Slightly useful (28)	Not at all useful (29)
Insurance (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Budgeting (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Financial Literacy Score/Quiz (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Superannuation (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buying a Car (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Moving out of home (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
University fees (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Borrowing (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Saving (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q16. Using the definition of financial capability as 'the combination of attitude, confidence, knowledge and skills to make financial decisions that best suits one's personal circumstances', would you say that since using the Wallet\$mart App, your financial capability has:

- Increased (1)
- Decreased (2)
- Stayed the same (3)
- Unsure (4)

Q17. Explain your main reason/s for your answer to the previous question about your financial capability.

Q18. Are you:

- An international student (1)
- A local/domestic student (2)

Q19. What would motivate other students to use the Wallet\$mart App?

Q20. Please indicate the extent to which you agree with the following statements about your financial behaviour.

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
I track my expenses (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have long term plans for my finances (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I spend all my income as I get it (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I save on a regular basis (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay my bills on time (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know the amount of my HECS debt/ university fees (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a budget (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confident about making financial decisions (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Borrowing (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Saving (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q21. Please use the space below to include any other information you feel is relevant to this study.

Appendix 4 Student Semi-structured interview questions

1. Tell me a little bit about how you feel about finances in general (is it something you generally feel comfortable with or maybe anxious about)?
2. What were your initial thoughts about using the financial literacy app?
3. Why do you think you thought that?
4. Tell me about your experience using the app.
5. How do you think using the app has impacted on your financial literacy levels? Why?
6. Do you think that using the app has changed the way you think about your finances?
7. How might the app have influenced your behaviour towards financial decision making?
8. What parts of the App were most useful to you? Why?
9. Were there parts of the App that you did not use? Why?
10. Would you keep using the App? Why/why not?
11. Do you think that the app is useful to university students – why/why not?
12. How do you think that university students could be motivated to use the app?
13. What would you change to make the app better?
14. Do you think that the app is enough on its own to help university students improve their financial knowledge and behaviour? Explain.
15. Has the app changed your attitude towards your finances – how?
16. When you first started using the App, what types of information did you think you needed? Technical ? Behavioural? Has your view changed ? Why or Why not?
17. What did your family/friends say when they found out you were using the app?
18. How has the app impacted on your confidence around financial decisions?
19. Is there anything further you would like to tell me about your experience with the app?

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