10th International Conference on Higher Education Advances (HEAd'24)
Universitat Politècnica de València, València, 2024
DOI: https://doi.org/10.4995/HEAd24.2024.17290

A review of Financial Education Implementation in Higher Education

Melany Lotter[1], Chioma Okoro[2]
Department of Finance and Investment Management, University of Johannesburg, South Africa.

How to cite: Lotter, M.; Okoro, C. 2024. A review of Financial Education Implementation in Higher Education. In: 10th International Conference on Higher Education Advances (HEAd'24). Valencia, 18-21 June 2024. https://doi.org/10.4995/HEAd24.2024.17290

Abstract
While undeniably enriching, the academic odyssey sometimes leaves a void where financial education should reside. Graduates should have optimal knowledge of financial matters to maximise their financial planning. Recognising this gap, higher education institutions have implemented financial education to bridge the gap for students before they enter the workforce. This paper reviews existing studies where higher education has implemented financial education and its outcomes, including program length, format, platform, and voluntariness. The findings reveal a diverse landscape of financial education initiatives in higher education, with varying degrees of success in achieving desired outcomes. The study will benefit higher education and policymakers considering implementing financial education. The review highlights the importance of ongoing evaluation and refinement of financial education initiatives to meet students' needs better and maximise their long-term financial well-being.

Keywords: *Higher education; Financial literacy; Financial education; Students.*

1. Background

Students would gain from obtaining financial knowledge early in life (Lusardi & Mitchell, 2014). Equipping students with financial knowledge before they commence their careers can profoundly impact their ability to navigate the complexities of personal finance, leading to enhanced financial well-being (Lusardi & Mitchell, 2007). The problem is that university students invest several years in completing specific qualifications yet frequently lack crucial skills such as financial literacy (FL). A significant concern for higher education (HE) students is student debt and credit cards. Norvilitis et al. (2006) found that higher debt translates into greater stress, impacting the students' financial well-being, where students need holistic financial education (FE). Furthermore, some students are at increased financial risk due to their extended training programs (Barrett et al., 2023). FE and counselling often occur when it is too late, and individuals are already in debt (Moore, 2004).

Across the globe, students consistently exhibit low to average FL scores. In Malaysia, studies observed low FL for students from eleven public and private colleges (Sabri et al., 2010), four HE institutions (Yew et al., 2017) and first-year university students from private and public universities (Wee & Goy, 2022). A cross-country study found that Indonesian students achieved higher FL scores than Malaysian students' average FL scores (Khalisharani et al., 2022). Low to moderate financial knowledge was observed for students in India (Kanduri, 2021), Turkey (Akben-Selcuk & Altiok-Yilmaz, 2014), South Africa (Antoni et al., 2020; Van Deventer, 2020), and public universities in the US (Artavanis & Karra, 2020). Medium or moderate FL levels were found among students from eight European countries (Ergün, 2018).

Many authors see FE as the bridge that connects individuals to FL (Lusardi, 2019; Wee & Goy, 2022). FE has been introduced at HE institutions to address low levels of FL among students. It is the foundation for improving knowledge associated with improved behaviour and FL, ensuring the next generation of workers and consumers has financial knowledge (Lusardi, 2019). Education on its own may not be sufficient, but it is a necessary element for behaviour change (Arlinghause & Johnston, 2018) and prior knowledge (Brady et al., 2021; Fürstenau & Hommel, 2019; Xiao et al., 2014). Studies highlighted the benefit of prior learning, where informal learning is ineffective without previous knowledge (Fürstenau & Hommel, 2019) and loan literacy before accumulating debt may serve as a mastery experience for students, enhancing financial self-efficacy when student loan repayments begin (Brady et al., 2021). FE positively influences financial well-being later in life (Xiao et al., 2014). Therefore, this paper sheds light on the implementation of FE in HE, offering invaluable insights into that program's direct outcomes and relevance.

2. Method

A literature search of articles on Scopus was performed. The combination of search terms included (financial literacy AND financial education AND students) and delivered 240 articles. The keyword 'higher education' was not included in the search words as it limited the search results; many studies referred to colleges and universities without reference to HE. Therefore, the search included many more results (especially on schools), but by reviewing them, schools and other organisations that are not HE were excluded. The researcher worked through the articles to identify studies reporting on specific FE implemented at HE. It is pivotal to distinguish between studies evaluating the role of a particular FE program and those assessing general financial educational exposure lacking specifics on quality, depth, or duration.

3. Financial Education

The role of FE programs has been debated, with scholars presenting contrasting views on its effectiveness. Goyal and Kumar (2020) reviewed 502 FL articles over ten years. They observed the delineation of two aspects of FL among young individuals: parental socialisation during adolescence and continuous financial learning within educational institutions or workplaces. Fernandes et al. (2014) performed a meta-analysis examining the correlation between FL, FE, and financial behaviours across 168 papers, encompassing findings from 201 previous studies. They discovered that efforts to enhance FL account for only 0.1% of the differences observed in the financial behaviours under examination, mainly showing less impact in samples from low-income backgrounds. In contrast, a national study by Wagner (2019) found a correlation between FE and FL, where individuals who received FE were less inclined to exhibit lower FL scores and more likely to demonstrate high FL scores. These studies have largely overlooked the heterogeneity of FE programs and did not consider the specific type, duration, or intensity of instruction. While previous research has overlooked the specific components of FE programs, this paper addresses this gap by focusing on articles that examine the implementation of tailored FE initiatives within HE institutions.

4. Specific financial education

In America, four studies of FE implemented at different HE institutions are included here: a) an outside institution developed FE consisting of one presentation that took an hour and a half (on average) on credit, budgeting, and investing. It was presented in a co-curricular module for business students at a university. The study noted the benefits of outside organisations offering FE at HE as well as increased basic financial knowledge, communication and technical skills (DeLaune et al., 2010);

b) FE was offered by appointing a financial and educational specialist who presented financial content as part of the curriculum in all four years of study, gave workshops, and offered one-on-one student advice for veterinary students. Relevant topics were identified, ensuring information was pertinent to their current circumstances (Jones et al., 2019);

c) librarians offered FE during first-year workshops as part of one-credit-hour courses. The content included savings, interest, budgeting, loans, debt, insurance, tax, and research skills. Positive changes were observed from before to after the course; however, the most positive changes were in improved research skills (Li, 2012);

d) libraries introduced many FL initiatives, where most of the support included FL collection development, collaborations with different partners on campus, events, workshops and online resources (Reiter & Ford, 2019);

e) an elective one-session, three-credit undergraduate course (saving, budgeting and debt) presented by business librarians on how advertising impacts spending behaviour. The course offered an opportunity to engage students in discussions about financial behaviour. Although students had mixed responses about the topic, most agreed it is a valuable inclusion in the personal finance course (Vaaler & Wilhelm 2020).

In China, a voluntary FL programme (face-to-face and online) was introduced to college students, measuring the driving forces behind the decision-making to attend the programme and how it impacted their FL. The study adopted an endogenous switching regression model focusing on how students decide to attend or not to attend (Tan et al., 2022). The face-to-face offering includes 36 hours of structured sessions. Participating students significantly increased FL, especially regarding their knowledge, behaviour and attitude. Students with a higher self-perceived level of FL did not prefer attending FE. In another Chinese HE institution, FE offered to finance students focused on using an internet-integrated programme provided over 18 weeks (90 hours in total), which found that education provided through the internet is cost and admin-effective and avoids real-life pitfalls in learning (Liu & Lin, 2021). The study found that FE has the potential to boost individuals' financial knowledge, instruct them in assessing personal financial health, and instil a lifelong interest in the study of money.

In New Zealand, FE was structured according to insights from literature reviews. This approach emphasised translating financial knowledge into actionable steps, involving consultations to reflect on spending pressures, follow-up appointments to track progress, identification of teachable life experiences, and simplifying technical and financial information for better understanding (Subactagin-Matto & Goncalves-Rorke, 2010). The knowledge gained positively affected the students' experience, retention and completion of studies. In Australia, a study examined the effects of FE on undergraduate students three years after completing a semester-long elective FE course, equivalent to other major options in their qualification. The study discovered that students retained substantial effects of both objective and subjective FL, although there was a slight decrease over time. The evidence for behavioural change did not demonstrate consistency over time (Gerrans, 2021).

In Singapore, FE is offered as an elective to undergraduate students, which covers various aspects of assets and finance management (investments, budgeting, debt, taxes, etc). Students receive a fixed amount to bid on courses. The study included students who bid for FL courses and divided them between those who bid and enrolled for the module and those who did not bid enough and could not register for the programme. The study found that students who attended FE had an 11% increase in financial knowledge and 16% in financial planning (Barua et al., 2018). In Malaysia, a study found that FE for undergraduate students from different higher institutions does not significantly impact personal management performance and is ineffective. The study did not refer to the FE offered or if all students attended FE (Bakar & Bakar, 2020).

In Italy, an introductory financial course of 20 minutes included interest rates, the time value of money, inflation, and risk. Students were invited to participate in the study (standard randomised trial treatment), which included the presentation to the treated group. It found a significant impact on FL and an even greater effect on the self-assessment of FL (Brugiavini et al., 2020). Another university in Italy offers free online FE to the public and teaches basic FL concepts. An experiment was conducted to compare the effectiveness of the online vs. on-campus offering. A portion of the FE content was offered over three hours, focusing on investments, bonds and interest rates. No statistically significant distinction is observed between attending the program in a lecture room or online, suggesting a causal effect estimation (Agasisti et al., 2023). In Croatia, a randomised field experiment introduced FE to a training group four times for 90 minutes, where FE positively impacted knowledge (Torma et al., 2023).

In Chile, FE was piloted for the Pedagogy of History and Geography students as an elective course for 16 weeks (32 hours) with the aim of targeted education on economics and finance, fostering practical skills development and cultivating positive attitudes (Alí et al., 2021),

5. Conclusion

Many initiatives worldwide incorporate and initiate FE; however, the slow movement to improve FL levels sheds light on the fact that not all approaches work for everyone and should be custom-designed for a specific audience. This review provides a comprehensive overview of the implementation of FE in HE, highlighting the diverse approaches taken across different institutions. The literature reveals variations in the length, format, platform, and voluntariness of FE programs, underscoring the need for flexibility and adaptability to cater to the diverse needs of students. Despite these differences, the review sheds light on the importance of FE and its perceived value among students, guiding HE and policymakers on the diverse options available to introduce FE. Thus, while FE at HE may not yield immediate transformations, it is a foundational element conducive to gradual development. The paper guides policymakers and higher educational institutions on how FE has been implemented. Limitations of this study include FE implemented but not reported in research papers, research papers from other databases, and business- or finance-related academic programmes with financial knowledge as part of the educational curriculum. Furthermore, the findings should be interpreted with caution as they may not reflect what every country experiences in delivering FE. Future research should focus on comparing different implementation strategies, voluntary vs compulsory offerings, technology in the offering and the impact of finance-related academic curriculum content.

References

Alí, Í., Sepúlveda, J., Sepúlveda, J., & Denegri, M. (2021). The impact of attitudes on behavioural change: a multilevel analysis of predictors of changes in consumer behaviour. *Revista Latinoamericana de Psicología*, 53, 73-82. https://doi.org/10.14349/rlp.2021.v53.9

Agasisti, T., Barucci, E., Cannistrà, M., Marazzina, D., & Soncin, M. (2023). Online or on-campus? Analysing the effects of financial education on student knowledge gain. *Evaluation and Program Planning*, 98, 102273. https://doi.org/10.1016/j.evalprogplan.2023.102273

Akben-Selcuk, E., & Altiok-Yilmaz, A. (2014). Financial literacy among Turkish college students: The role of formal education, learning approaches, and parental teaching. *Psychological reports*, 115(2), 351-371. https://doi.org/10.2466/31.11.PR0.115c18z3

Antoni, X. L., Saayman, M., & Vosloo, N. (2020). The relationship between financial literacy and retirement planning, Nelson Mandela Bay. *International Journal of Business and Management Studies*, 12(2), 579-593. https://www.sobiad.org/eJOURNALS/journal_IJBM/arhieves/IJBM_2020-2ek/xl-antoni.pdf

Arlinghaus, K. R., & Johnston, C. A. (2018). Advocating for behavior change with education. *American journal of lifestyle medicine*, 12(2), 113-116. https://doi.org/10.1177/1559827617745479

Artavanis, N., & Karra, S. (2021). Financial literacy and student debt. *The Europen Journal of Finance*, 26(4-5), 382-401. https://dx.doi.org/10.2139/ssrn.3327151

Bakar, M. Z. A., & Bakar, S. A. (2020). Prudent financial management practices among youth consumers. *Malaysian Journal Of Consumer And Family Economics*, 24, 101-123. https://majcafe.com/wp-content/uploads/2022/11/Vol-24-2020-Paper-5.pdf

Barrett, J. R., Leonard, L. D., Kovar, A., McCarthy, D. P., Harms, B., & Tevis, S. (2023). Medically Smart, Fiscally Illiterate: Lack of Financial Education Leads to Poor Retirement Savings Strategies in Surgical Trainees. *The American Surgeon™*, 89(6), 2427-2433. https://doi.org/10.1177/00031348221096579

Barua, R., Koh, B., & Mitchell, O. S. (2018). Does financial education enhance financial preparedness? Evidence from a natural experiment in Singapore. *Journal of Pension Economics & Finance*, 17(3), 254-277. https://doi.org/10.1017/S1474747217000312

Brady, S., Miller, J., Balmuth, A., D'Ambrosio, L. A., & Coughlin, J. F. (2021). Factors contributing to the financial self-efficacy of student loan borrowers. *Journal of Financial Counseling and Planning*, 32(3), 493-506. DOI:10.1891/JFCP-19-00067

Brugiavini, A., Cavapozzi, D., Padula, M., & Pettinicchi, Y. (2020). On the effect of financial education on financial literacy: evidence from a sample of college students. *Journal of Pension Economics & Finance*, 19(3), 344-352. https://doi.org/10.1017/S1474747218000276

DeLaune, L. D., Rakow, J. S., & Rakow, K. C. (2010). Teaching financial literacy in a co-curricular service-learning model. *Journal of Accounting Education*, 28(2), 103-113. https://doi.org/10.1016/j.jaccedu.2011.03.002

Ergün, K. (2018). Financial literacy among university students: A study in eight European countries. *International journal of consumer studies*, 42(1), 2-15. https://doi.org/10.1111/ijcs.12408

Fernandes, D., Lynch Jr, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. *Management Science*, 60(8), 1861-1883. https://doi.org/10.1287/mnsc.2013.1849

Fürstenau, B., & Hommel, M. (2019). Developing financial competence about mortgage loans by informal learning using banks' online calculators. *Empirical Research in Vocational Education and Training*, 11, 1-33. https://doi.org/10.1186/s40461-019-0085-z

Gerrans, P. (2021). Undergraduate student financial education interventions: Medium term evidence of retention, decay, and confidence in financial literacy. *Pacific-Basin Finance Journal*, 67, 101552. https://doi.org/10.1016/j.pacfin.2021.101552

Goyal, K., & Kumar, S. (2021). Financial literacy: A systematic review and bibliometric analysis. *International Journal of Consumer Studies*, 45(1), 80-105. https://doi.org/10.1111/ijcs.12605

Jones, C., Fouty, J. R., Lucas, R. B., & Frye, M. A. (2019). Integrating individual student advising into financial education to optimise financial literacy in veterinary students. *Journal of Veterinary Medical Education*, 46(4), 562-572. https://doi.org/10.3138/jvme.1117-156r1

Kanduri, S. (2021). Financial literacy knowledge assessment among college students in Hyderabad, India. *International Journal of Business Performance Management*, 22(2-3), 117-139. https://doi.org/10.1504/IJBPM.2021.116413

Khalisharani, H., Johan, I. R., & Sabri, M. F. (2022). The Influence of Financial Literacy and Attitude Towards Financial Behaviour Amongst Undergraduate Students: A Cross-Country Evidence. *Pertanika Journal of Social Sciences & Humanities*, 30(2), 449-747. https://doi.org/10.47836/pjssh.30.2.03

Li, J. (2012). Serving as an educator: A southern case in embedded librarianship. *Journal of business & finance librarianship*, 17(2), 133-152. https://doi.org/10.1080/08963568.2012.661198

Liu, H. C., & Lin, J. S. (2021). Impact of internet integrated financial education on students' financial awareness and financial behavior. *Frontiers in Psychology*, 12, 751709. https://doi.org/10.3389/fpsyg.2021.751709

Lusardi, A. (2019). Financial literacy and the need for financial education: evidence and implications. *Swiss Journal of Economics and Statistics,* 155(1), 1-8. https://doi.org/10.1186/s41937-019-0027-5

Lusardi, A., & Mitchell, O. S. (2007). Financial literacy and retirement planning: New evidence from the Rand American Life Panel. *Michigan Retirement Research Center Research Paper No. WP, 157. http://ssrn.com/abstract=1095869*

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *American Economic Journal: Journal of Economic Literature*, 52(1), 5-44. http://dx.doi.org/10.1257/jel.52.1.5

Moore, R. (2004). *Credit card knowledge, attitudes, and practices of college students*. Unpublished doctoral dissertation. Lubbock, TX: Texas Tech University. https://ttu-ir.tdl.org/handle/2346/10060

Norvilitis, J. M., Merwin, M. M., Osberg, T. M., Roehling, P. V., Young, P., & Kamas, M. M. (2006). Personality factors, money attitudes, financial knowledge, and credit-card debt in college students. *Journal of Applied Social Psychology*, 36(6), 1395-1413. https://doi.org/10.1111/j.0021-9029.2006.00065.x

Reiter, L., & Ford, B. (2019). Library support for student financial literacy: A survey of librarians at large academic institutions. *College & Research Libraries*, 80(5), 618. https://doi.org/10.5860/crl.80.5.618

Sabri, M. F., MacDonald, M., Hira, T. K., & Masud, J. (2010). Childhood consumer experience and the financial literacy of college students in Malaysia. *Family and Consumer Sciences Research Journal*, 38(4), 455-467. https://doi.org/10.1111/j.1552-3934.2010.00038.x

Subactagin-Matto, A., & Goncalves-Rorke, M. (2010). Improving the fiscal fitness of young adults: translating knowledge into action. *JANZSSA-Journal of the Australian and New Zealand Student Services Association*, 18(1), 45-54. https://janzssa.scholasticahq.com/article/91571.pdf

Tan, X., Li, X., Hu, Z., Niu, Y., Ying, Q., Lu, Y., & Xu, J. (2022). Is It Necessary to Launch a School-Based Financial Literacy Curriculum? Evidence From China. *Frontiers in Psychology*, 13, 846382. https://doi.org/10.3389/fpsyg.2022.846382

Torma, J., Barbić, D., & Ivanov, M. (2023). Analysing the Effects of Financial Education on Financial Literacy and Financial Behaviour: A Randomised Field Experiment in Croatia. *South East European Journal of Economics and Business*, 18(2), 63-86. https://doi.org/10.2478/jeb-2023-0019

Vaaler, A., & Wilhelm, J. (2020). Teaching financial literacy through the use of market research and advertising instruction: A non traditional approach. *Reference Services Review*, 48(2), 258-270. https://doi.org/10.1108/RSR-11-2019-0081

Van Deventer, M. (2020). African Generation Y students' personal finance behaviour and knowledge. *Investment Management and Financial Innovations*, 17(4), 136-144. http://dx.doi.org/10.21511/imfi.17(4).2020.13

Wagner, J. (2019). Financial education and financial literacy by income and education groups. *Journal of Financial Counseling and Planning*, 30(1), 132-141. http://dx.doi.org/10.1891/1052-3073.30.1.132

Wee, L. L. M., & Goy, S. C. (2022). The effects of ethnicity, gender and parental financial socialisation on financial knowledge among Gen Z: the case of Sarawak, Malaysia. *International Journal of Social Economics*, 49(9), 1349-1367. https://doi.org/10.1108/IJSE-02-2021-0114

Xiao, J. J., Ahn, S. Y., Serido, J., & Shim, S. (2014). Earlier financial literacy and later financial behaviour of college students. *International Journal of Consumer Studies*, 38(6), 593-601. https://doi.org/10.1111/ijcs.12122

Yew, S. Y., Yong, C. C., Cheong, K. C., & Tey, N. P. (2017). Does financial education matter? Education literacy among undergraduates in Malaysia. *Institutions and Economies*, 43-60. https://mojes.um.edu.my/index.php/ijie/article/view/5057