

Bridging The Gap: *How Neurodevelopment Shapes Financial Behavior Beyond Financial Literacy*

Abstract

Financial literacy is widely promoted as essential for improving financial outcomes, yet a persistent gap remains between knowledge and behavior—especially during adolescence. This study examines how neurodevelopmental processes shape financial decision-making beyond financial literacy, emphasizing cognitive engagement, perceived relevance, and emotional regulation.

Using survey data from first-year college students, we analyze relationships among financial education, teaching methods, financial behavior, financial stress, and academic performance. Results show that financial education alone does not significantly predict behavior; instead, behavioral engagement and financial stress are key mechanisms.

These findings challenge knowledge-based approaches and highlight the need for developmentally aligned, behaviorally informed financial education interventions.

Keywords: Financial Literacy, Adolescent Development, Financial Behavior, Financial Education, Decision-Making

Introduction

Financial literacy is widely regarded as a critical skill for improving financial well-being; however, a persistent gap remains between financial knowledge and real-world financial behavior, particularly during adolescence (Lusardi, 2019; Mandell & Klein, 2009). Despite expanded financial education initiatives, young people often fail to apply sound financial principles to saving, budgeting, and spending decisions, suggesting that knowledge alone is insufficient to drive behavior (Kaiser & Menkhoff, 2017).

Drawing on behavioral finance and developmental neuroscience, this study proposes that adolescent financial decision-making is shaped by neurodevelopmental factors, including cognitive control, reward sensitivity, and susceptibility to social influence (Steinberg, 2008; Casey et al., 2008). During adolescence, the imbalance between heightened reward processing and still-developing executive function may limit the ability to translate knowledge into action.

This research addresses the question: *How do neurodevelopmental processes influence the relationship between financial literacy and financial behavior?* By integrating cognitive and emotional mechanisms into financial literacy models, this study aims to explain why traditional education approaches often fail to produce meaningful behavioral change.

Method

This study employs a quantitative research design using survey data collected from first-year college students, a population positioned at the transition from adolescence to financial independence (Arnett, 2000; Shim et al., 2010). The sample includes approximately 100–190 participants recruited through university channels.

Key variables include financial education exposure (binary), teaching method (categorical), financial behavior (11-item scale), financial stress (8-item scale), and academic performance (6-item composite). Additional measures include financial knowledge and demographic controls (Lusardi & Mitchell, 2014).

Hierarchical regression, moderation, and mediation analyses are used to test: (1) the effect of financial education on behavior, (2) the moderating role of teaching method, and (3) the mediating role of financial stress (Hayes, 2018).

Results (Preliminary Findings)

Preliminary findings indicate that financial education alone is not a significant predictor of financial behavior, reinforcing the presence of a knowledge–behavior gap (Fernandes et al., 2014; Kaiser & Menkhoff, 2017). Instead, perceived effectiveness and behavioral engagement emerge as stronger drivers of financial decision-making.

Experiential teaching methods show stronger effects than lecture-based approaches (Reyna & Farley, 2006). Financial stress significantly mediates the relationship between financial behavior and academic performance, with better financial behaviors associated with lower stress and improved academic outcomes (Mani et al., 2013).

Conclusion

This study contributes to both theory and practice by demonstrating that financial literacy, while necessary, is insufficient to drive behavioral change. Instead, financial behavior is shaped by cognitive engagement, emotional regulation, and developmental constraints associated with adolescence.

These findings challenge traditional education models and support developmentally aligned, experiential approaches that emphasize behavioral reinforcement (Thaler & Sunstein, 2008). By identifying financial stress as a key mechanism, this study highlights the broader impact of financial capability on academic success.

The research offers actionable insights for educators and policymakers seeking to improve financial education and reduce long-term economic inequality.

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