

## **Socioeconomic Status and Digital Literacy in Primary School Students: Trajectories, Mechanisms, and Challenges**

Educational digitalization offers both opportunities (e.g., low-cost e-learning) and risks (e.g., overuse) that together affect young students' well-being. Digital literacy (DL)—the learned ability to critically, responsibly, and healthily engage with digital tools—is essential for maximizing benefits while minimizing risks. Young students often rely on external support, such as digital resources and parental regulation, to navigate this balance; typically, students from higher socioeconomic status (SES) families or schools have more resources and support for greater learning opportunities, leading to better DL, greater access to digital benefits, and fewer risks. Despite this cross-sectional SES-DL relation, critical gaps remain in our understanding of (a) how family, class, and school SES interact to influence DL over time, (b) whether parental engagement can help bridge the SES-DL gap, and (c) how families establish and implement rules to balance digital benefits and risks. These gaps are particularly concerning, as a widening SES-DL divide and technology victimization of young students may hinder their learning and well-being in the digital age, deepening the digital divide and exacerbating social inequalities. To address these gaps, this study aims to (1) examine the longitudinal associations among family/class/school SES and students' DL, (2) investigate how to bridge the SES-DL relation through parental engagement, and (3) understand how families establish and implement family rules for technology use and the challenges they face. This two-and-a-half-year longitudinal study consists of two sub-studies. In Study I, 300 dyads of 3rd grade students from six schools and their parents will both complete objective tests and self-report surveys three times, separated by nine-month intervals. School information and communication technology coordinators will report on school characteristics related to DL education. We will analyze these data via structural equation growth modeling. Among the Study I participants, 30 parent-child dyads with various SES/DL backgrounds will be interviewed for Study II about how they establish and implement family rules for healthy technology use and the challenges they face. We will apply thematic analysis to these interview data. This study extends previous research by examining how the SES-DL relationship evolves over time and how the SES-DL gap can be bridged. The findings will benefit students, parents, and educators by (a) identifying students in need of DL support, (b) enabling the design of effective strategies to address SES-DL disparities through parental engagement, and (c) revealing good practices and challenges in balancing digital benefits and risks in the family.