Early Smartphone Use in Children? Two Studies Highlight Long-Term Consequences

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A group of researchers from the University of Milano-Bicocca and SUPSI, by means of longitudinal data provided by INVALSI (Italian Institute for the Evaluation of the Education System), has confirmed that early smartphone usage before the age of 12 does not bring benefits. Instead, it is associated with lower digital skills, higher problematic smartphone use and can, in fact, diminish the academic performance of students.

Milan, January 29, 2023 – The intensive and premature use of smartphones among children and pre-adolescents shows negative relationships with learning, digital skills, problematic smartphone use and active use of social media. In particular, it diminishes the academic achievements of a substantial portion of the student population. Two studies from Milano-Bicocca and SUPSI substantiates these findings using INVALSI data, also moving beyond mere correlations.

The first study, titled "The Age of the Smartphone: An Analysis of Social Predictors of Children's Age of Access and Potential Consequences Over Time" and published in "Youth&Society", investigates the associations between the age of access to the device and selected life outcomes in a representative sample of 3,247 Italian students in grade 10. While showing that females and students from less-educated families are more likely to receive smartphones earlier, the study finds that early smartphone access is negatively associated with adolescents' well-functioning at the age of 16 (even controlling for a number of socio-economic variables). Deferring access also reduces the gender gap in language proficiency, digital skills and life satisfaction. The study was conducted by **Tiziano Gerosa**, a researcher at the University of Professional Studies of Southern Switzerland (SUPSI), **Marco Gui**, Director of the Digital Transformation and Wellbeing Lab at the University of Milano-Bicocca (Department of Sociology and Social Research) and **Lucilla Losi**, postdoc and research assistant at the Department of Business Development and Technology, Aarhus University.

The second study, titled "Earlier Smartphone Acquisition Negatively Impacts Language Proficiency, but Only for Heavy Media Users. Results from a Longitudinal Quasi-Experimental Study" - authored by Tiziano Gerosa and Marco Gui - tested the main theoretical hypotheses regarding the role of smartphones in the learning process (both those positing benefits and those anticipating negative effects) using longitudinal data.

"This study is one of the first to delve into the impact of early smartphone use on learning levels using a more sophisticated counterfactual design and nationwide standardized tests," says Tiziano Gerosa. "It is, in fact, a quasi-experimental study that uses longitudinal INVALSI data on children and pre-adolescents transitioning from primary to lower secondary school. This methodology allows us to approach, albeit with certain assumptions, a causal interpretation of the results."

The research encompassed an age range of 10-14 years, comparing those who acquired the device at 10 and 11 years old, during the transition from primary to lower secondary school, to those who received it in later years, specifically at 12, 13 and 14 years old. The total sample consisted of 1,672 italian students from lower secondary schools, with administrative information collected over time by the National Institute for the Evaluation of the Education System (INVALSI).

The results do not indicate any benefits at the end of the lower secondary school for those who obtained smartphones early, even for the most academically motivated students. However, participants who built intensive media usage habits before owning a smartphone (more than two hours per day of TV and video games) experienced a significant negative impact on their Italian language learning. At the time of data collection, students with intensive screen use – and therefore subject to the potential negative effect of smartphones – comprised 23.5 percent of the Italian student population.

"These results not only confirm the existence of negative relationships between early smartphone use and life outcomes in the long-run - says Marco Gui - but also show that behind such correlations lies a direct negative impact, which becomes visible for those with a reduced ability to limit screen time due to family context or specific psychological characteristics."

There has long been a significant debate about the impact of digital media use on the development of minors. The literature has already identified a negative relationship between early and excessive smartphone use and academic results, but often, there have been complaints about the absence of more

robust scientific evidence beyond mere correlations.

Further research on this topic is ongoing at the Milano-Bicocca 'Digital Transformation and Wellbeing Lab ', in collaboration with the University of Brescia and local associations (Sloworking and Socialis). In particular, the **EYES UP project** (EarlY Exposure to Screens and Unequal Performance) aims to analyze the impact of a range of early online devices and experiences on learning levels throughout students' academic careers, from primary to upper secondary school.

For more information

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