CHANDARIA RESEARCH CENTRE
BRANKSOME HALL

Girls & Gadgets:

Navigating Technology-Enhanced Learning in IB Junior School

2024

Natasha Koustova, Jordan Sutcliffe, and Mira Gambhir

Introduction

WHY WAS THIS STUDY CONDUCTED?

We conducted a research pilot to better understand (a) how teachers are implementing the use of technology in the classroom; (b) the strengths, challenges, and concerns associated with technology; and (c) challenges and opportunities for increasing accessibility and equity.

HOW WAS THIS STUDY CONDUCTED?

This study involved immersion and observation in JS classrooms (n = 5) across K-6 and the JS iHub, along with semi-structured interviews about technology use at school with teachers and staff (n = 10).

Observed lessons included: using iPads and Minecraft to explore the anatomy and function of the brain, coding Ozobots and learning about emotions, detecting lines of symmetry using Sketches School app, student groups preparing for the Primary Years Program (PYP) exhibition, and student groups presenting at the PYP exhibition. All teacher participants identified as women and represented a range of duration regarding teaching experience. No other demographic information was collected.

Discussion

COMPETENCE

Students: technology can support personalization and differentiation (if done so deliberately) but can also impact the loss of traditional skills like writing, thus teachers should seek balanced approach.

Teachers: learning new technologies required much trial-and-error. Professional development is crucial and should involve continuous, evolving support and dedicated time for exploring new tools.

AUTONOMY

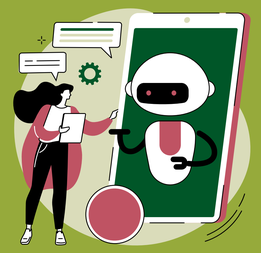
Students: Technology can support increased autonomy which increases intrinsic motivation. However, we've also observed increased screen time, reliance on technology for engagement, and classroom isolation.

Teachers: Teachers highlighted the importance of being a self-starter and experimentation, something they struggled with due to lack of time and access to resources.

RELATEDNESS

While technology can facilitate new forms of collaboration and teacher-student relatedness, it also presents challenges in maintaining genuine human connections. This dichotomy is reflective of the broader discourse on the impact of digital tools on social interactions within educational settings.

Results

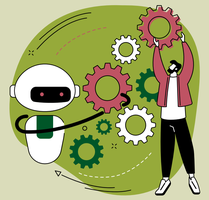


ENGAGEMENT IN LEARNING WITH TECH

Students show **high engagement and joy** in learning experiences that involve technology. This **enthusiasm can be leveraged** to enhance the learning process and **keep students motivated.**

VARIABILITY IN TECH LITERACY

Students come with a **wide range** of technological skills. This diversity offers a chance for **peer-led learning**, with tech-savvy students helping others. However, it also poses a challenge to ensure all students **benefit equally** from technology-enhanced lessons.



IMPACT ON SKILL DEVELOPMENT

Technology aids in developing **skills like design thinking, articulation of ideas, pattern recognition and problem-solving**. However, teachers expressed a concern about a loss of **physical skills** (like handwriting) and **foundational skills** (like spelling, grammar).

TEACHERS' ROLE AND PROFESSIONAL DEVELOPMENT

Teachers are key **role models** for intentional technology use and self-regulation with personal devices. Continuous professional development and time for **personal exploration of digital tools** are crucial for empowering teachers in this evolving landscape of technology-enhanced education.

PERSONALIZATION AND IMPLEMENTATION

While digital tools offer opportunities for personalized learning experiences, tailoring education to individual student needs requires significant time and effort from teachers. Schools should **provide support and resources** to teachers for effective implementation of technology.

Small Print

SELF-DETERMINATION THEORY

OBSERVATIONS/INTERVIEWS

The study utilized observational suggestions put forward by Holloway (1997) asking questions that span (a) who (e.g., who was present in the setting, what were their roles); (b) what (e.g., what was happening, what behavioral observations were observed); (c) where (e.g., where were people located in the space); (d) when (e.g., what was the order of activities, when did conversations occur); and (e) why (e.g., why did certain people behave the way they did), as well as additional guiding questions with relation to the teacher role, student experience.

Interviews were semi-structured, and focused on their experience with using tech in the classroom, changes they have observed over time in relation to tech in the classroom, comfort, knowledge and PD, concerns, opportunities, and their recommendations for the way forward.

ANALYSIS

We used abductive analysis (Tavory & Timmermans, 2014) to code all the data from observations, interviews, and artifacts/pictures. The first step involved semi-structured coding and generated initial themes that addressed the changing experiences of students, changing role of teachers, and equity/accessibility as well as emergent codes. We then reviewed and revised the initial codes based on literature review and critical discussion among research team. We used the SDT as a guiding framework for our final themes. We also conducted a participatory analysis session with teachers to validate our themes.

Website: www.branksome.on.ca/about-the-crc

Email: crc@branksome.on.ca