Multimodal Literacy in English Language and Literature Teaching
The Design, Implementation and Evaluation of a One-to-one Wireless Laptop Programme in a Singapore High School

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THIS PROJECT INVESTIGATED what happens in English Language and Literature learning when every student has a laptop computer to use in school and at home. The data were collected from teachers, students and school administrators in a series of questionnaires, classroom observations, meetings, focus group discussions, informal conversations, and interviews. Findings revealed a complex web of relationships between the stakeholders that translated into an uneven picture of professional practice in the laptop initiative. Whereas teachers opted for direct and traditional instructional methods, a fine-grained analysis showed that students were able, on occasions, to create meanings using a range of representational modes. Overall, the study highlighted the need to further build teachers' capabilities in multimodality, knowledge creation, and the design of student-centred learning.

INTRODUCTION
This project was conducted by NIE’s Centre for Research in Pedagogy and Practice within the broad context of Singapore’s extensive research, development and innovation agenda in the creation and use of digital tools and new media (Infocomm Development Authority, 2006).

There is a widespread belief that one-to-one computing—defined as the provision of a laptop computer to every staff member, teacher and student for continuous use both in the classroom and

KEY IMPLICATIONS

• To support effective one-to-one laptop use in English Language and Literature learning, it is essential to acknowledge, address and map the shifts of positional and epistemic authority, and technological expertise towards students.

• Collective action is key to learning with laptops. English teachers should work in level-specific professional learning communities that have the use of laptops as a primary concern.

• Teachers can show leadership by partnering their students in making decisions about how laptop-mediated tasks are completed and assessed.
at home—has great potential to enhance teaching and learning in disciplinary and subject-based contexts (Livingston, 2009; Warschauer, 2006).

Yet, teachers in laptop-enabled classrooms also face a multitude of complex issues, including challenges to existing teacher-centric practices (Burns & Polman, 2006); conflicts with the requirements of high-stakes written tests (McGrail, 2007); and dissatisfaction with professional development opportunities and technical training (Khambari, Moses, & Wong, 2009).

A different approach to laptop implementation work moves beyond the overt barriers to change with computer technology toward easing the conditions that make innovation difficult. The present study investigated one-to-one laptop computing in English Language and Literature learning in a particular high school in Singapore. The researchers were curious about how pedagogy and school-based classroom practices could be influenced positively by the requirement to spread an increasing communicative load across multiple modes of representation using digital tools and multimedia as key mediators in curriculum design, and classroom implementation processes and procedures (Ministry of Education, 2010).

The study provided opportunities for teachers to engage in continuous learning in situ. It also provided a diverse platform for the discussion of the merits and pitfalls associated with the use of mass mobile learning in high school language education.

**RESEARCH DESIGN**

The research followed design experiment prototyping practices (Bannan-Ritland, 2003) and descriptive case study methods (Cresswell, 1998). The data were collected from teachers, students and school administrators through a series of questionnaires, classroom observations, meetings, focus group discussions, informal conversations and audio-taped interviews.

A key aspect of the research design was a repeated intervention with nominated and willing teachers in level-specific, laptop-mediated, curriculum decision-making. The researchers mentored the teachers in framing measurable and meaningful learning objectives, monitoring students’ work, giving formative feedback, promoting critical and creative dialogue, and designing summative assessment rubrics. This work also involved co-planning, co-teaching and co-evaluating exemplars of thematic units of work (e.g., summary and report writing) using a model inspired by Roth and Tobin (2002).

The intervention data were analysed and interpreted using the Concerns-based Adoption Model (CBAM; Hall, Wallace, & Dosset, 1973). CBAM provides a suite of diagnostic tools for recording and analysing the impact of innovations from practitioners’ personal (and therefore unique) perspectives. Personalized Concerns Profiles were generated and compared at two time periods (pre- and post-invention) during the study.

**KEY FINDINGS**

There were four main findings that emerged from the analysis.

First, on-site classroom observations, meetings with senior and middle managers, dialogues with participating teachers, and focus group discussions with selected students showed that there was a complex web of relationships and lines of influence between various stakeholders in the department and school as a whole. Key players seemed to interact in different ways depending on either strong, predictable connections (usually based on seniority or reporting lines) or weaker, contingent peer-to-peer associations. The upshot—especially at the start of the study—was a diverse and sometimes unclear picture of professional practice that translated unevenly into how the one-to-one laptop programme was understood, implemented and evaluated in classrooms.

Second, despite widespread digital access, data from questionnaires, classroom visits, post-lesson interviews and other conversations showed that teachers favoured direct, print or word-based instructional methods that reinforced their positional and epistemic authority.

Third, detailed case study findings showed that learners were able to create meanings using a range of modes of representation (both individually or in combination) that went far beyond what might be normally expected in print-based academic work.
but these opportunities were few and far between. Overall, students in the laptop programme seldom explored mobile technologies as sites of exploratory learning. Further, what they knew of the world (often mediated by the use of their laptops) was rarely, if ever, invited into the classroom.

Fourth, the interventions resulted in greater knowledge and confidence in the teachers’ laptop-mediated work. But it was equally clear from meetings conducted with teachers and school officers that the school’s laptop initiative was as ambitious as it was disruptive to the status quo. The teacher–researcher–student relationships undertaken highlighted numerous possibilities and tensions that can arise when the “tectonic plates” of teaching and learning in formal and informal contexts abut and collide.

**IMPLICATIONS**

**For Policy**
The study showed that one-to-one laptop teaching and learning practices for English Language and Literature did not equate easily to the school’s strategic plans and national policies relating to the use of digital tools and new media. Technology, it would seem, is no respecter of traditional positional and epistemic authority, and unquestioned or unquestionable procedures.

Different thinking is therefore required that acknowledges, addresses and maps the inevitable shift of positional and epistemic authority, and technological expertise towards students, especially in one-to-one laptop learning. Positive change in one-to-one laptop language learning is realizable given two interrelated conditions: (1) policymakers need to know how learner independence that is crucially mediated by technology and teacher direction relate to each other in practical terms; and (2) teachers need to recognize and respond positively to the ever-increasing reality that they no longer occupy the roles of sole source and arbiter of knowledge in the classroom that they once did when print-based and analogue resources ruled the day.

**For Practice**
Teachers have to work in subject- and level-specific professional learning communities that have the deliberate use of laptops as a primary concern. They also need to confer and co-ordinate their curriculum, assessment and pedagogical intentions with administrative and managerial colleagues. The purpose being to understand collectively what they are aiming to achieve in and through subject- and level-specific curriculum maps and articulate why this is important to students, in particular. English teachers’ pedagogic conversations should be seriously considered as a new defining mark of inquiring, future-oriented, one-to-one laptop language educators.

**For Teacher Training**
Teachers are not totally bereft of agency in one-to-one laptop learning contexts even though the epistemic ground has shifted around them. They need to be taught and learn how they can show leadership at their level. This can be done in two ways: (1) partnering (not battling against) students in task design—that is, allowing them to make decisions about how work is completed and assessed; and (2) working collectively with colleagues, drawing on commonalities and affinities that may go beyond (but certainly not circumvent) overt school-based structures. This idea challenges accepted (and largely unquestioned) notions of where expertise is located in schools and schooling.

**REFERENCES**


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