

Collaborating for Impact: Digital Technology and STEM/Literacy Coaching to Support Literacy Learning Across the Curriculum

Dr. Tiffany L. Gallagher, Professor
Dr. Arlene Grierson, Adjunct Professor
Rachel Sulisz (St. Hilaire), Sessional Faculty
Brock University, ON, Canada

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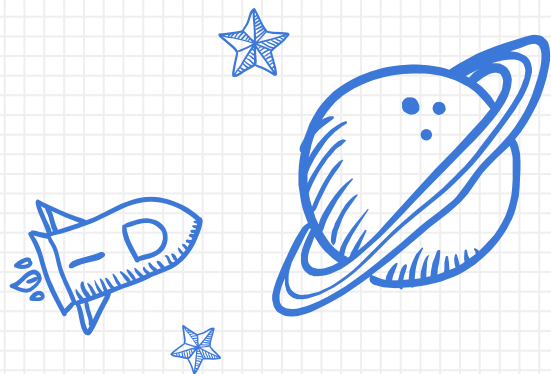


Purpose

We highlight the experiences of a Digital Technology Coach (DT) and STEM/Literacy Coach (STEM/L) as they supported classroom teachers' use of technology-enhanced methods with literacy across the curriculum.

RQ: How are the roles of a Digital Technology Coach and a STEM/Literacy Coach enacted when providing literacy professional learning for elementary teachers with technology integration?

We collaborated with coaches, learned from their ability to encourage elementary and middle school classroom teachers to adopt new methods, and view literacy and technology as seamlessly embedded in their teaching for all students



Perspectives



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**Nelson & Webb, 2016;
Sugar, 2015**

Instructional technology professional development that is on-site, individualized, and includes continuous support, has a direct influence on students' abilities to use technology effectively

Ansyari (2015)

It is essential for teachers to be actively engaged in authentic learning experiences in a collaborative environment, with guidance, support, and feedback

**Doering, Koseoglu,
Scharber, Henrickson, &
Lanegran, 2014**

Instructional scaffolding provided by a coach plays an important role in improving teachers' ability to integrate technology in pedagogically meaningful ways



Methods

Methods: Context, Participants, Data Sources & Analyses



Coaches

A Digital Technology (DT) Coach and a STEM/Literacy (STEM/L) Coach from neighboring, but different Ontario school districts

Interviews

Ten (n=10) of the thirty (n=30) teacher participants + two (n=2) coaches were interviewed individually

Coaching Method

District coaches supported 30 teacher participants, co-planning and co-teaching lessons with them that were focused on a variety of cross-curricular literacy-based topics over one school year

Analyses

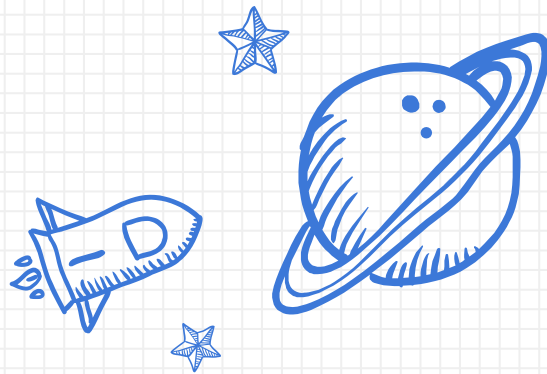
Data analyses used NVivo program (QSR International Pty Ltd, 2015) to import all field notes and interview transcripts; data were coded and codes collapsed

Observation Data

Field notes and artifacts (e.g., instructional resources) were gathered during observations of twenty-four (n=24) classroom coaching sessions

Themes

Findings were clustered and categorized into four common themes



Results

- (1) Having a full technology toolbox
- (2) Enhancing literacy skills and strategies with technology
- (3) Cross-curricular connections
- (4) Students who are ELL or have exceptionalities benefit from technology in literacy instruction

(1) Having a full technology toolbox.

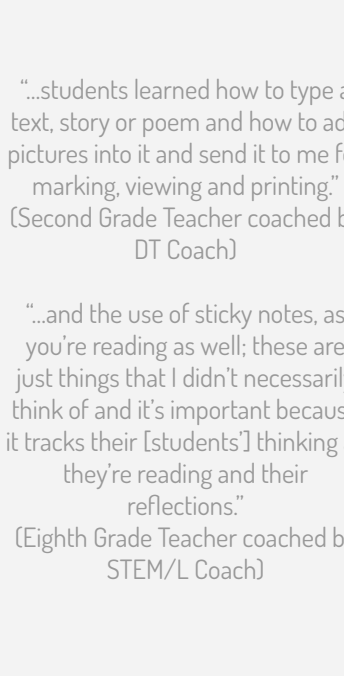
- DT Coach ensured technological enhancements to literacy lessons were frontloaded and coached teachers using an extensive range of tools within the context of literacy focused cross-curricular instruction
- STEM/L Coach focused on the language learning strategies that suited learners and technology was an enabler

DT Coach used an extensive toolbox of devices, apps, programs, and websites to draw from:

GOOGLE suite, Minomo, Pixton, Bitstrips, SMART Board, iPads and Chromebooks

STEM/L Coach used e-text forms (e.g., Nelson Literacy series) on Chromebooks



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- “...students learned how to type a text, story or poem and how to add pictures into it and send it to me for marking, viewing and printing.”
(Second Grade Teacher coached by DT Coach)
- “...and the use of sticky notes, as you’re reading as well; these are just things that I didn’t necessarily think of and it’s important because it tracks their [students’] thinking as they’re reading and their reflections.”
(Eighth Grade Teacher coached by STEM/L Coach)

(3) Cross-curricular connections

- DT Coach worked with a 2nd grade teacher's math lessons on a SMART board with PPT links on how to microbit code
- STEM/L Coach and 7th/8th grade teachers had cross-curricular content text choices (infographics and videos) on water quality, the environment, and history of W/W1

"...Second Graders helped each other, within that lesson to ensure that there is a progression of things not just with coding, but with students communicating to help each other" (DT Coach)

The STEM/L Coach was more transmission-oriented than instrumental in her modelling of how to use digital technology resources.

(4) Students who are ELL or have exceptionalities benefit from technology in literacy cross curricular instruction

- DT Coach used GOOGLE Read and Write and Translate to assist ELL students to understand texts; coached a 5th grade teacher to enable students on IEPs to demonstrate their learning and knowledge using technology
- STEM/L Coach provided online tools for 7th and 8th students that struggled in literacy

"ELL students appreciated that they can listen to the reading and questions being asked...Students are able to use GOOGLE Translate on the computer to help them understand key mathematical terms" (DT Coach)

"They used technology to help them write or read questions or to just present their material in an alternative way" (Fifth Grade Teacher coached by DT Coach)

"...my students show what they know through writing. So being able to use that online tool, I think that that was the huge impact. Because they're so focused on the technology now" (Eighth Grade Teacher coached by STEM/L Coach)



Educational Importance of the Study



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Promise

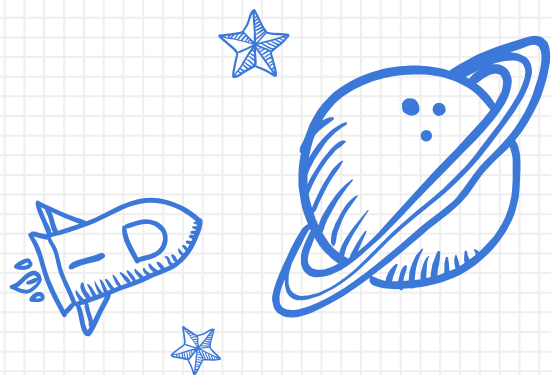
Teachers who receive mentoring on technology improve in its use, are confident, and can navigate some of the usage barriers (Kopcha, 2012).

Teachers can work together in a community of practice to transfer technology knowledge to instructional and curricular integration (Courduff & Szapkiw, 2015).

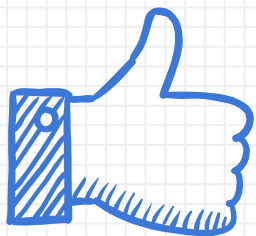
Practice and TPACK

The process of supporting teachers to shift their practice to use digital technologies can take up to three years (Skues & Cunningham, 2013).

Teachers supported by coaches experience pedagogy shifting from a traditional mode to a technologically enhanced delivery mode; this is the transfer of practice from PCK to TPACK (Mishra & Koehler, 2006).



Interest to the Audience: Conclusions



THANKS!

Any questions?

- ✕ tgallagher@brocku.ca
- ✕ agrierson@brocku.ca
- ✕ rsthilaire@brocku.ca

Special thanks to all the people who made and released these awesome resources for free:

Presentation template by [SlidesCarnival](#)

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