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Research summary

Social constructivist approaches to language learning in multilingual early and elementary years classrooms

Summary developed by the IB Research department based on a report prepared by:

Sally Humphrey, Honglin Chen and Lucy Macnaught

Australian Catholic University and the University of Wollongong

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Background

This study, conducted in two phases, investigated professional learning practices in language education. The first phase, a comprehensive literature review, investigated literature related to professional learning practices in language education. The purpose of the review was to gain insight into the teaching and learning of language that is influenced by social-interactionist perspectives and, in particular, the social-semiotic theories of Systemic Functional Linguistics (SFL). SFL provides a distinctive and robust theoretical framework, largely due to its focus on the complexity of language and how specific patterns of language use relate to context.

The second phase of the study involved applying and testing the principles that emerged from the literature review. This second stage examined teachers' knowledge about language before professional learning and any shifts that occurred as a result of their professional learning experience. The researchers reported on their implementation and evaluation of professional learning with two teachers in one European and one Australasian International Baccalaureate (IB) Primary Years Programme (PYP).

Research design

The researchers conducted a qualitative linguistic analysis in order to illuminate what teachers and students do in professional learning and classroom activity. An underlying assumption with this approach is that detailed analysis, such as the close linguistic analysis of language and other semiotic resources, is central to understanding pedagogic activities and pedagogic relationships (Hammond, 2011). This qualitative approach is further informed by theoretical frameworks in the field of applied linguistics (Halliday and Matthiessen, 2004; Martin and Rose, 2007, 2008) and design-based research approaches (Andersen and Shattuck, 2012; Reeves and McKenney, 2013; Reeves, Herrington, and Oliver, 2005). The findings from this phase of the study culminated in the formation of preliminary design principles for professional learning experiences that target PYP teachers.

Stage two involved the design of language and literacy interventions to conduct professional learning in schools with existing Primary Years Programmes. The authors conducted two detailed case studies in order to identify critical aspects in the design of professional learning experiences in PYP contexts. The timing of data collection involved pre-, during and post-professional learning data. In line with design-based research, this format enabled an assessment of change/no change in classroom practices to be related to the content and delivery of professional learning. Lastly, the extended and detailed discussion and analysis of the researchers' collaboration with teachers provided significant insights into the consolidation of the design principles.

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Findings

Phase one
The IB language framework

The analysis of curriculum documents focused on how socio-cultural theories inform the IB's current curriculum documents about language teaching and learning. The findings indicated the need for an overarching theory to connect language concepts and inform decisions for the selection and sequencing of language in classroom practice. Currently, there is no emphasis placed on developing and using a shared metalanguage (language about language) with which teachers and students can identify and talk about specific language choices. In light of the fact that on-going feedback across units of work is valued, there is the potential for the IB curriculum framework to consider how a common metalanguage can assist with reflecting upon and assessing language use. As Gibbons (1999) argues, without a language framework it is difficult for:

> *"teachers and students to reflect on language itself, so that teachers are guided in language planning and student assessment by an explicit model of language and can make explicit to students who are unfamiliar with the language of school how to use the registers associated with power and educational success" (1999, p. 24).*

A further finding was the absence of a teaching and learning model to guide teachers' choices about specific instructional steps to support students' literacy development. Concepts like "scaffolding", for instance, tended to be discussed more in terms of configurations of student learners and less as examples of theoretically informed classroom activities. Given that reflection in both teaching and learning is a core feature of the IB approach, there is a need to identify and critique the value of specific models of instruction, in particular, how sequences of classroom activity in language learning target specific literacy goals.

Both these findings involve the process of drawing on teachers' knowledge of language and language learning. In this regard, research suggests that professional learning needs to include knowledge from outside of teachers' collective knowledge base (Alton-Lee, 2008; Stoll, 2009; Stoll, Bolam, McMahon, Wallace and Thomas, 2006) in order to extend their existing "horizons of observation" (Little, 2003, p. 917). Newly developed knowledge can then be integrated with existing pedagogic content knowledge and shared with monolingual and multilingual students for the benefit of their language development.

Social-semiotic theory in elementary teachers' professional learning

The synthesis of professional learning studies related to social-semiotic theory involved 30 studies in elementary school contexts. Findings consistently showed a strong relationship between extending teachers' knowledge about language and supporting students' inquiry of how texts work. In particular, a systemic view of language can support teachers to recognize, connect and explain language patterns in texts targeted for composition as well as in texts students read and critique.

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In terms of pedagogical practice, the review also found that teacher-guided analysis of exemplar texts provides a valuable context to support students' critical inquiry of texts. **In this regard, a crucial finding is that a shared metalanguage is imperative for investigating the meaning-making resources of texts. More specifically, a metalanguage informed by systemic functional linguistics was found to support students' confidence in composing texts and facilitate their understanding of language use across curriculum contexts.** In Shulman's (1986) terms, these findings highlight areas of pedagogic content knowledge that are related to language teaching and learning and essential for the successful integration of deep language knowledge in specific teaching and learning contexts.

Foundational design principles

The analyses of IB language framework documents and the synthesis of past professional learning studies culminated in the formation of twelve design principles for professional learning in PYP contexts. The twelve principles informed the design and implementation of the researchers' professional learning with PYP teachers.

Phase two

Situating professional learning in authentic teaching and learning contexts

A key finding of the project relates to the importance of the enactment of ongoing "elbow to elbow" professional learning (professional learning involving close collaboration between the instructor and the student) within teaching and learning contexts, which are immediately relevant to teachers. While such a model may require intensive resourcing initially, there is far more likelihood that knowledge is used and developed in meaningful classroom activity.

The importance of research partnerships between academic mentor and teacher

A further finding relates to developing a research partnership between the academic mentor (researcher) and teacher. Teachers were guided to investigate how semiotic theory and a metalanguage, developed from SFL theory, could provide a toolkit for inquiry and to appreciate text inquiry as a focus of instruction. At the same time, the academic mentor was challenged to investigate ways in which space for inquiry could be opened within the teaching and learning cycle, foregrounding the shared interrogation of meanings, which can occur as teachers model meanings in texts and gradually shift responsibility from guided to independent activity.

Designing a pathway for language learning in the context of scientific inquiry

Analysis of the lesson sequence provided significant insight, not only to inform models of professional learning and classroom language instruction, but also to inform decisions related to the scope and sequence of knowledge about language within science inquiry.

While images were used in both units, primarily to open an inquiry into verbal text, researcher analysis of the case study teachers' work enables a possible pathway for developing students' repertoire of semiotic understandings related to images as well as those for exploring verbal language in information reports.

Impact on student writing

Positive impacts were also found on students' language use, particularly in writing for scientific inquiry. Analysis of extended literacy practices revealed students' engagement in analysing and composing texts and distinguishing and using semiotic features of scientific register. Through these activities all students were guided to be "multi-modal scientific writers" (composition of texts using two or more forms of communication, such as, text and images).

Evidence of teachers' satisfaction with their students' engagement in and achievement of composing multimodal texts in a scientific register is found not only in the range of semiotic resources deployed but also in teachers' reports. One of the case study participants sent the following message to her mentor, commenting,

> *"My students are now quite fixated on being "multi-modal scientific writers".*

While assessment of students' written texts requires further analysis of patterns of language in a range of genres over time, the range of texts produced over three weeks and the reflections of changed practice reported by teachers attests to the efficacy of pedagogies which are infused with explicit language instruction.

Revisiting the design principles

Through insights gained from the professional learning stage of the project, the researchers proposed a number of revisions to the foundational principles presented in phase one of the project. These changes involved amending and integrating the initial twelve individual principles to form eight revised principles to guide the future collaboration between PYP teachers/co-researchers and external mentors—specifically in professional learning which draws upon social-semiotic theories of language and learning to investigate how texts work.

Revisited design principles	Rationale
1. PYP teachers have invaluable knowledge of their specific teaching contexts, which needs to be drawn upon prior to and during professional learning. This will cultivate a co-researcher relationship during the joint investigation of texts in context.	The case study research has foregrounded the crucial role of teachers as co-researchers in the design and implementation of professional learning and curriculum design. Such partnership is compatible with design-based research approach principles.
2. Supporting students' language development requires teachers to have knowledge of methodological tools to investigate language patterns in texts and to be able to apply these tools in analysing students' learning goals and assessment tasks.	This principle foregrounds semiotic knowledge as a resource for teachers' ongoing inquiry, oriented towards effective teaching practice.
3. In order to support reasoning in the practical inquiry of how language works in the PYP framework, semiotic theory needs to be functionally oriented. A systemic functional linguistic theory can explain meanings in the context and connect these meanings with discourse and grammatical patterns in print and digital multimodal texts.	This principle foregrounds the explanatory power of the SFL model of language and particularly its understanding that contextual meanings are realized as patterns within text. Teachers in the case studies emphasized the role of SFL understandings in making more abstract concepts visible.

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4. A metalanguage that is responsive to learning contexts is crucial for mediating language learning, that is, making language knowledge accessible, relevant and fun to apply in PYP text-based inquiry.	Teachers in the case studies emphasized the role of metalanguage in both their own classroom explanation and their students' ongoing investigation of text. Teachers gained confidence through experiencing their students' use and engagement with metalanguage.
5. Developing deep knowledge of language is best accomplished with specific guidance in how it can be explicitly and creatively shared with students as a resource for learning. **6. For professional learning to be successful and sustainable, PYP teachers need on-going support from expert mentors as well as collaboration within school communities and PYP networks.** **7. Iterative cycles of professional learning activity with PYP teachers supports the gradual refinement of professional learning design and content.**	Teachers emphasized that embedding "elbow-to-elbow" professional learning within authentic teaching and learning contexts was essential, not only in developing their own knowledge and confidence, but also in providing immediate evidence of its efficacy and relevance to their students' learning.
8. While text comparisons between pre- and post-data are essential for investigating change/lack of change (particularly in longitudinal studies), data types need to include dialogic talk around texts.	The analyses of data from all stages of professional learning are essential for exploring possible changes in the process through which teachers and students investigate how language works. Dialogic talk around texts is also critical to understanding how teachers are using knowledge about language to realize curriculum goals.

Table 1. Summary and rationale of changes to foundational design principles

References

Alton-Lee, A. (2008). *Designing and supporting teacher professional development to improve valued student outcomes*. Paper presented at the Education of Teachers Symposium at the General Assembly of the International Academy of Education, Limassol, Cyprus.

Anderson, T. and Shattuck, J. (2012). "Design-based research: A decade of progress in education research?" *Educational Researcher*, 41(1), 16–25. doi: 10.3102/0013189X11428813.

Gibbons, Pauline. (1999). *Discourse contexts for second language development in the mainstream classroom*. (unpublished doctoral dissertation), University of Technology, Sydney, Sydney, Australia.

Halliday, M. A. K. and Matthiessen, C. M. I. M. (2004). *An introduction to functional grammar* (3rd edn). London, UK: Hodder.

Hammond, Jennifer. (2011). Classroom discourse. In K. Hyland and B. Paltridge (Eds.), *Continuum companion to discourse analysis* (pp. 291–305). London, UK: Continuum.

Little, J. W. (2003). "Inside teacher community: Representations of classroom practice". *Teachers College Record*, 105(6), 913–945.

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Martin, J. R. and Rose, D. (2007). *Working with discourse: Meaning beyond the clause* (2nd edn). London, UK: Continuum.

Martin, J. R. and Rose, D. (2008). *Genre relations: Mapping culture*. London, UK: Equinox.

Reeves, T. C. and McKenney, S. (2013). Computer-assisted language learning and design-based research: Increased complexity for sure, enhanced impact perhaps. In *Design-based research in CALL*. CALICO Monograph Series (11). The Computer Assisted Language Instruction Consortium, San Marcos, Texas, 9–21.

Reeves, T., Herrington, J. and Oliver, R. (2005). "Design research: A social responsible approach to instructional technology researcher in higher education". *Journal of Computing in Higher Education*, 16(2), 96–115.

Shulman, L. (1986). "Those who understand: Knowledge growth in teaching". *Educational Researcher*, 15(2), 4–14. doi: 10.3102/0013189x015002004.

Stoll, L. (2009). "Capacity building for school improvement or creating capacity for learning? A changing landscape". *Journal of Educational Change*, 10(2–3), 115–127. doi: 10.1007/s10833-009-9104-3.

Stoll, L., Bolam, R., McMahon, A., Wallace, M. and Thomas, S. (2006). "Professional learning communities: a review of the literature". *Journal of Educational Change*, 7(4), 221–258. doi: 10.1007/s10833-006-0001-8.

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