

# Can Teachers' Pedagogical Content Knowledge in Subject English Really be Measured?

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There is a growing awareness that it is teachers' level of pedagogical content knowledge (PCK) that is a critical influence on students' learning. To date most of the initiatives associated with understanding PCK have come from researchers investigating teachers' PCK in the subject areas of mathematics, science and technology, with limited PCK research on subject English. Subject English refers to what is taught in schools under the banner of the English curriculum. In the Australian context, subject English has three interconnected strands that focus on Language: Literature and Literacy. This paper will overview why teachers' PCK in subject English is a complex construct to define and will briefly review the development of a multidimensional measure of teachers' PCK in subject English.

The claim is that it is the teachers' knowledge and ability to teach the content that is a critical factor in students' learning that content. Since the seminal work of Shulman (1987) interest in the nature of teachers' knowledge has been growing. His work identified seven types of knowledge that teachers draw upon: content knowledge; general pedagogic knowledge; curriculum knowledge; pedagogical content knowledge; knowledge of learners and their characteristics; knowledge of educational contexts; and knowledge of educational ends, purposes, and values, and the philosophical and historical issues. Of particular importance for this paper are the fields of content knowledge, curriculum knowledge, and pedagogical content knowledge (PCK).

Shulman considered that PCK:

identifies the distinctive bodies of knowledge for teaching. It represents the blending of content and pedagogy into an understanding of how topics, problems, or issues are organised, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction (Shulman, 1987, p. 8).

For Shulman, pedagogical content knowledge was the category of teacher knowledge that was most likely to distinguish the advanced skilled teacher who was more of the content specialist, from that of the general teacher. With reference to pedagogical content

knowledge Baumert et al. (2010) further claimed that learning and instruction were both domain specific and the structure of the domain or school subject influenced teacher's instructional processes and necessitated specific teacher expertise. There is also considerable evidence that teachers need an understanding of their subject content that refers to specialised ways to teach that content that is in addition to simply knowing the content or the curriculum (Darling-Hammond, 2006).

To date much of the research and conceptualising about teachers' pedagogical content knowledge has been explored in the domain of mathematics. When there has been a focus on English it has been more in the field of the English curriculum rather than teachers' knowledge of subject English. There are at least three possible reasons why teachers' content knowledge about English and their pedagogical content knowledge have been poorly studied in relation to subject English: (i) English is too broad a construct and so it is difficult to define its "content" knowledge; (ii) there is less concern about teachers' English knowledge because once the student has mastered reading and writing the teaching of English is more about extension and elaboration; and (iii) the research in the domain has focussed on different approaches to teaching proficiencies and in particular students' reading competencies, such as the debate about whole language or the phonologic approach (Hay & Fielding-Barnsley, 2012) and so the PCK is more about teaching reading and writing abilities than English.

The critical question then is how is pedagogical content measured? On this point Hill, Rowan, and Ball (2005) incorporate content knowledge, pedagogical content knowledge, and knowledge of students as learners, into a rich description of teachers' knowledge for teaching mathematics. This construct was assessed using a series of complex multiple choice items. Chick and Pierce (2008) included these three types of knowledge, as well as curriculum knowledge, in their expanded framework for pedagogical content knowledge in mathematics.

The nature of teachers' mathematical knowledge has been researched by Callingham and Beswick and colleagues (Beswick, Callingham, & Watson, 2012; Callingham and Beswick 2011). These researchers designed a specific teachers' mathematics knowledge questionnaire that, in part, used the Australian National Mathematical curriculum as a framing document. Their *Mathematics Knowledge for Teaching Survey* reflected their conceptualised that there were three critical dimensions pertaining to teachers' knowledge in mathematics. These dimensions are: (1) teachers' beliefs about mathematics; (2) the content knowledge of mathematics; and (3) teachers' knowledge of how they would teach a specify aspect of the mathematics (pedagogical content knowledge).

In the Australian context, subject English has three interconnected strands that focus on language; literature and literacy and therefore teachers' knowledge of subject English would need to consider each of these strands. Adapting the Callingham and Beswick mathematics teachers' knowledge research, it is possible to design a taxonomy grid for both primary and secondary teachers of English. The taxonomy would have on the Y axis of the grid the three dimensions of: (1) teachers' beliefs about English; (2) teachers content knowledge of English; and (3) teachers' knowledge of how they would teach a specify aspect of English as subject (pedagogical content knowledge). On the X axis of the grid the English curriculum dimensions of: language; literature; and literacy.

The full team involved in the development of this instrument are listed as co-authors of this paper.

The appendix contains some examples of such a questionnaire called the *English Knowledge for Teaching Survey* that aims to investigate teachers' English knowledge. These examples are items that are indicative of: (1) teachers' belief about English; (2) English teachers' content knowledge; and (3) English teachers' pedagogical content knowledge.

## Key References

- Baumert, J., Kunter, M., Blum, W., Brunner, M., Voss, T., Jordan, A., & Tsai, Y. M. (2010). Teachers' mathematical knowledge, cognitive activation in the classroom, and student progress. *American Educational Research Journal*, 47(1), 133-180.
- Beswick, K., Callingham, R., & Watson, J. (2012). The nature and development of middle school mathematics teachers' knowledge. *Journal of Mathematics Teacher Education*, 15(2), 131-157.
- Chick, H. L., & Pierce, R. U. (2008). Teaching statistics at the primary school level: Beliefs, affordances, and pedagogical content knowledge. *Joint ICMI/IASE study: Teaching statistics in school mathematics. Challenges for teaching and teacher education. Proceedings of the ICMI Study*, 18.
- Darling-Hammond, L. (2006). Constructing 21st-century teacher education. *Journal of teacher education*, 57(3), 300-314.
- Hay, I., & Fielding-Barnsley, R. (2012). Social learning, language and literacy. *Australian Journal of Early Childhood*. 37, 24-29.
- Hill, H. C., Rowan, B., & Ball, D. L. (2005). Effects of teachers' mathematical knowledge for teaching on student achievement. *American educational research journal*, 42(2), 371-406.
- Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard educational review*, 57(1), 1-23.

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## Appendix

### *Indicative Teacher Belief items about English*

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Learning English is essential for getting a good job.					
All students should know formal English grammar.					
It is important that students experience some of the great works of English literature.					

### *Indicative English content items*

**In the sentence *You may collect your assignments after I have finished marking them*, the underlined word is which of the following?**

- A. preposition
- B. verb
- C. adverb
- D. coordinating conjunction
- E. subordinating conjunction

**To say that a poem, play or novel is an *allegory* means that:**

- A. the complete text conveys abstract ideas or concepts
- B. the text is fictional
- C. the text features deliberate and extravagant exaggeration
- D. the text is instructional or informative

**The Joseph Heller novel that gives its name to any ridiculously impossible situation from which a person cannot escape, is:**

- A. *Article 11*
- B. *Bomb in New Haven*
- C. *Catch-22*
- D. *Section 8*

*Indicative English Pedagogical Content Knowledge items*

**A Year 4 child was reading this sentence out loud:**

*His grandmother came to the house and gave Sam a parcel.*

The student read this as:

*His grandmother come to the house and give Sam a present.*

**What problems does this student have?**

- A. No problem at all. The text is predicted well.
- B. The student is substituting the a sound with the o sound.
- C. The child is reading for meaning, but is not making grammatical sense.
- D.** The student has a problem with tense. The parcel/present substitution may be because they are only reading the first letters. .
- E. The student lacks grammatical knowledge of tenses, or just doesn't care and has got into bad habits.

**How would you intervene to help this student?**

- A. Tell them to slow down with their reading and to read every word.
- B. Talk about the difference between give and gave. Say parcel is another word for present but that it has been read incorrectly.
- C. Work on tenses. Reading out the sentence aloud can sometimes help the child recognise the error of the sentence.
- D.** Re-read the sentence, ask if it makes sense and if the words look right. Then I would do extra vocabulary work on tense