Bostancioğlu, A., & Handley, Z. (2018). Developing and validating a questionnaire for evaluating the EFL 'Total PACKage': Technological Pedagogical Content Knowledge (TPACK) for English as a Foreign Language (EFL). *Computer Assisted Language Learning*, 8221, 1–27. http://doi.org/10.1080/09588221.2017.1422524

A self-assessment tool to evaluate teachers' Technological Pedagogical Content Knowledge

What this research was about and why it is important

The use of technology is now part of most language learning curricula. There appears to be a belief that the use of technology will automatically improve learning outcomes. But specialists in the field of Computer-Assisted-Language Learning (CALL) have pointed out that this can only be achieved when technology actually supports and enhances subject teaching and aligns with learning theories. In other words, if technology is only used for the sake of using technology, it is unlikely to lead to improved learning outcomes. That is why it is important that teachers receive training in CALL and learn more about the different available technologies and how they could best support different aspects of the language learning process. The knowledge that teachers need to make decisions about the potential use of technology in educational settings, is called Technological Pedagogical Content Knowledge (TPCK). This study developed a tool for teachers to assess their own TPCK.

What the researchers did

- Based on previous studies, the researchers developed a pool of items to assess teachers' TPCK.
- 36 international experts in CALL evaluated the items.
- 542 EFL practitioners completed the self-assessment tool and the researchers analysed their answers.
- The self-assessment tool had 45 questions on teachers':
    - Technological Knowledge (TK): how to operate technology
    - Pedagogical Knowledge (PK): understanding of learning processes
    - Content Knowledge (CK): understanding of the subject matter (subject knowledge)
    - Pedagogical Content Knowledge (PCK): how to teach the subject
    - Technological Content Knowledge (TCK): how to use technology to support subject knowledge
    - Technological Pedagogical Knowledge: how to use technology to support learning processes
    - Technological Pedagogical Content Knowledge (TPCK): how to use technology to support subject learning
- After the analysis, researchers removed 9 items and the final version of the tool contained 36 questions.

What the researchers found

- The self-assessment tool did not prescribe a particular approach to language teaching or the use of specific technologies.
- Teachers' scores on PK and PCK were strongly linked. If they had higher PK, they also had higher PCK. This was also true for TCK and TPK.
- Teachers' CK was independent from their PK and their PCK. This is, their content knowledge was not linked to their understanding of learning processes or their understanding of how to teach their subject. Teachers might have had a good knowledge of English but were less secure about teaching it (or vice versa).
- TK was independent of other factors. Teachers' ability to use technology was not linked to their pedagogical, subject or content knowledge. This is, teachers might have had a good understanding of technology in general but did not necessarily know how to apply this knowledge to (subject) teaching.

Things to consider

- This study showed that teachers' PK and PCK as well as TCK and TPK were strongly linked. This might be the case because any attempt to communicate subject content is essentially an attempt to teach.
- The fact that teachers' CK was independent from their PK and their PCK might be due to how teacher training is still organised. In many English teacher training programmes, teachers already have to have a good knowledge of English before they can start the course. During the course, they study general pedagogical principles independently from subject-specific pedagogy. This might explain why they feel confident in one aspect but less so in another.
- The study also suggests that TK, PK and CK should be taught together and not separately as still tends to be the case in many language teaching programmes. Teachers need to link their understanding of technology and their content, subject and pedagogical knowledge if they are to use technology effectively to support language learning.

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