

Teacher-Made Videos As Professional Development for STEM Teachers

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BACKGROUND

Research in education contains ample literature on the use of videos as a form of professional development for teachers (Borko et al., 2011; Brouwer, 2011; Gaudin & Chalies, 2015; Karsenty & Sherin, 2017; Tekkumru-Kisa & Stein, 2017; Tembrevilla & Milner-Bolotin, 2019).

There are video clubs, where teacher-participants analyse videotaped classroom instruction in the context of teaching-learning process (van Es & Sherin, 2008, 2010).

Videos are used for specific STEM subjects like simulations and animations to make abstract concepts visible (Wieman et al., 2008; Wieman et al., 2010).

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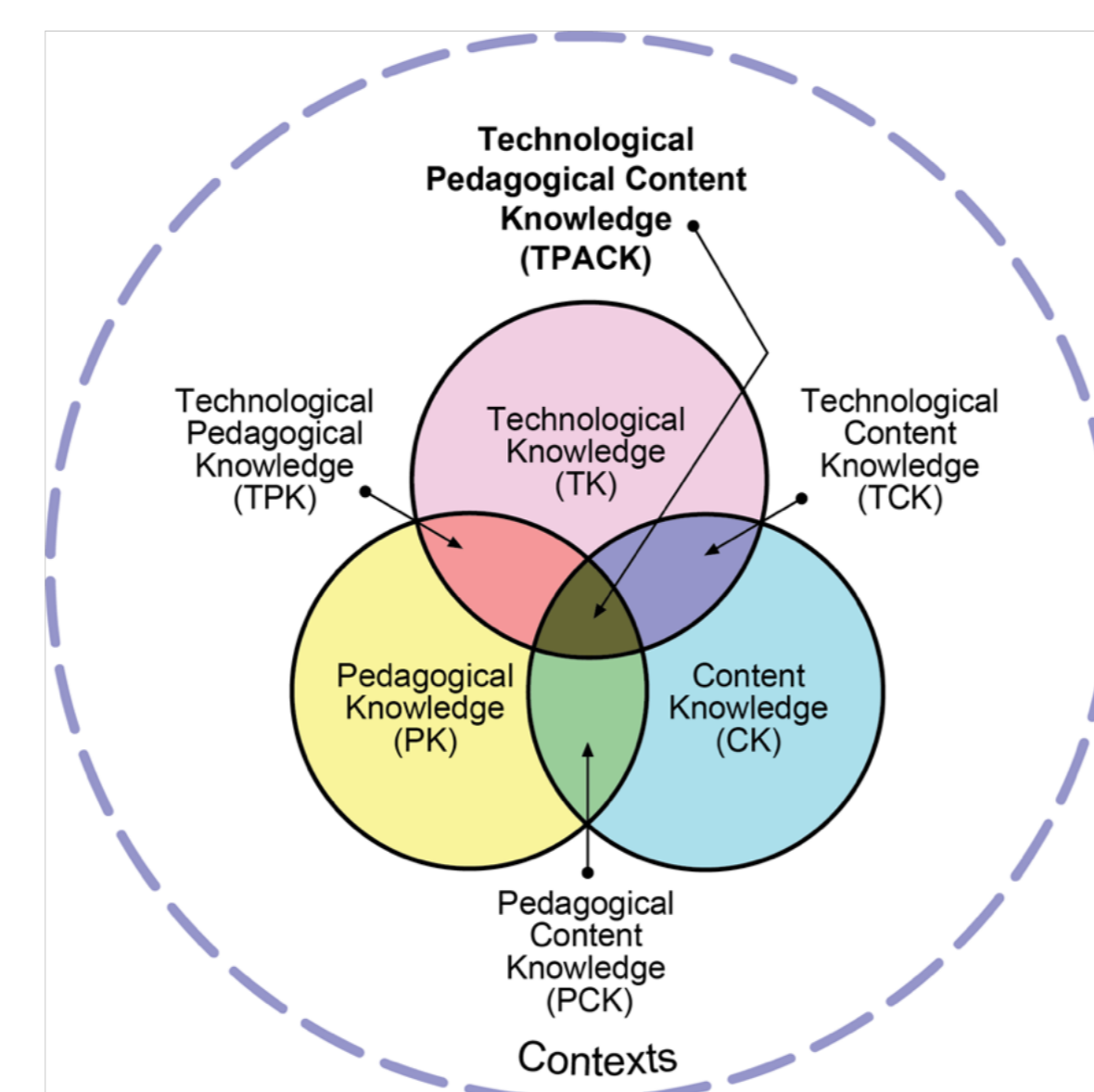
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HIGHLIGHTS

Teacher-made videos used as a form of professional development.

1. Teacher-made videos viewed through the lens of TPACK & FoK

TPACK : Technological, Pedagogical Content Knowledge



TPACK Framework (Reproduced by permission of the publisher © 2012 by tpack.org, 2009)

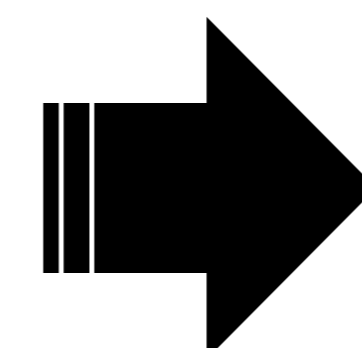
FoK: Funds of Knowledge



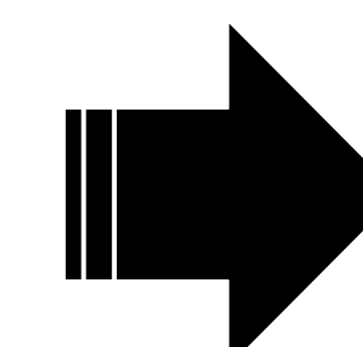
González, Moll, & Amanti, 2005

2. Teacher-made videos integrating FoK

The Superstitious Belief

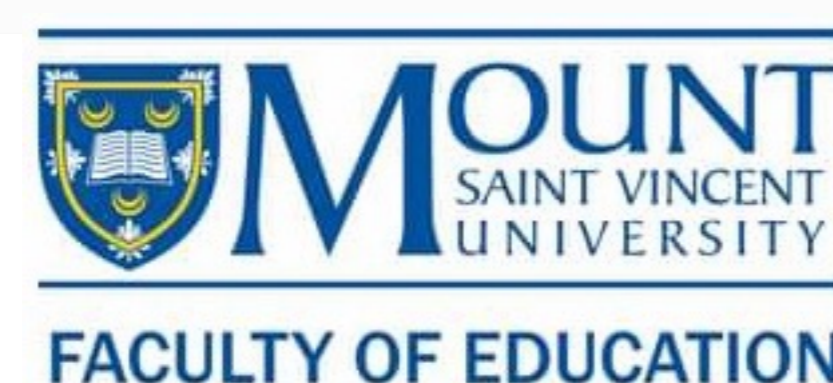
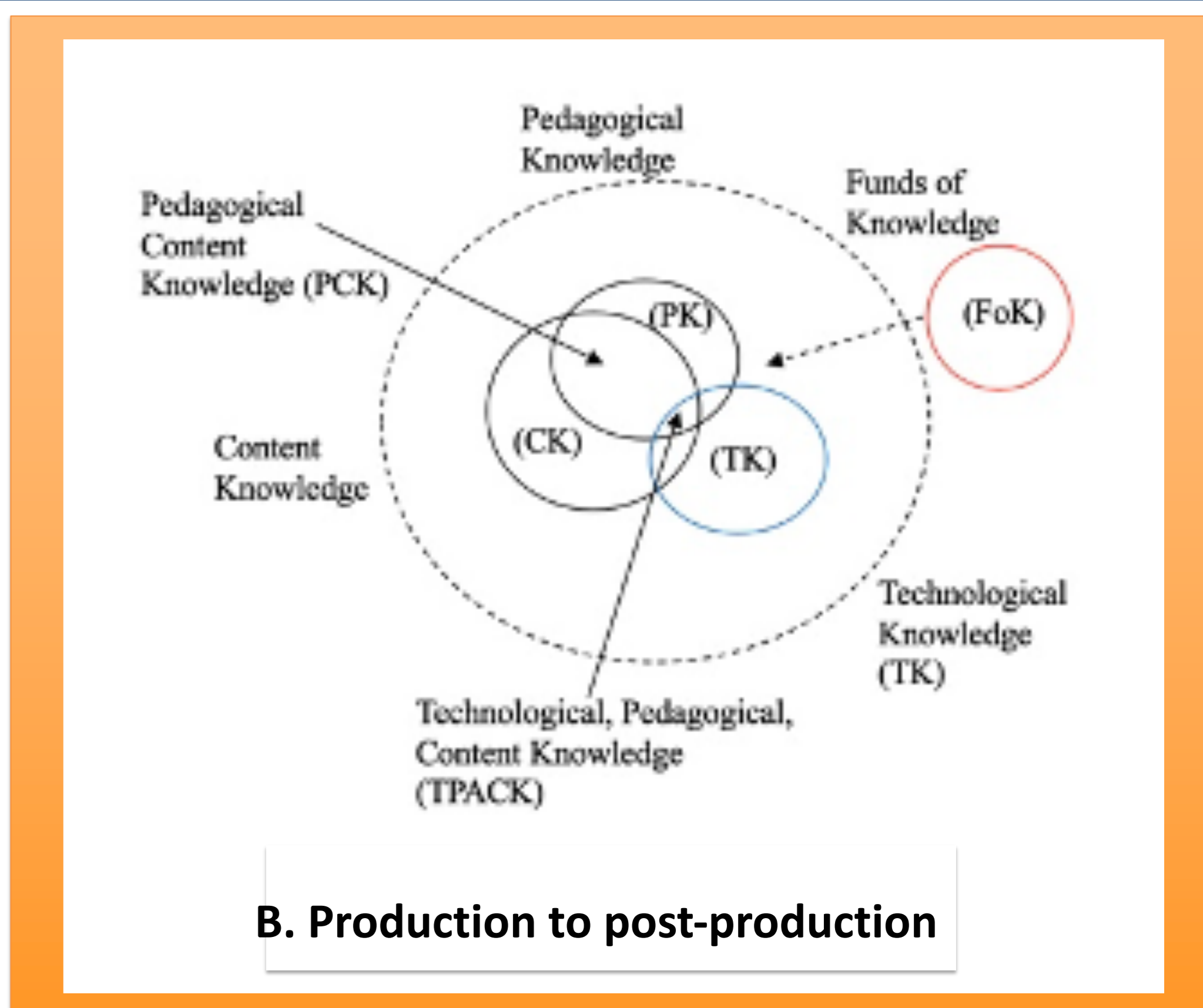
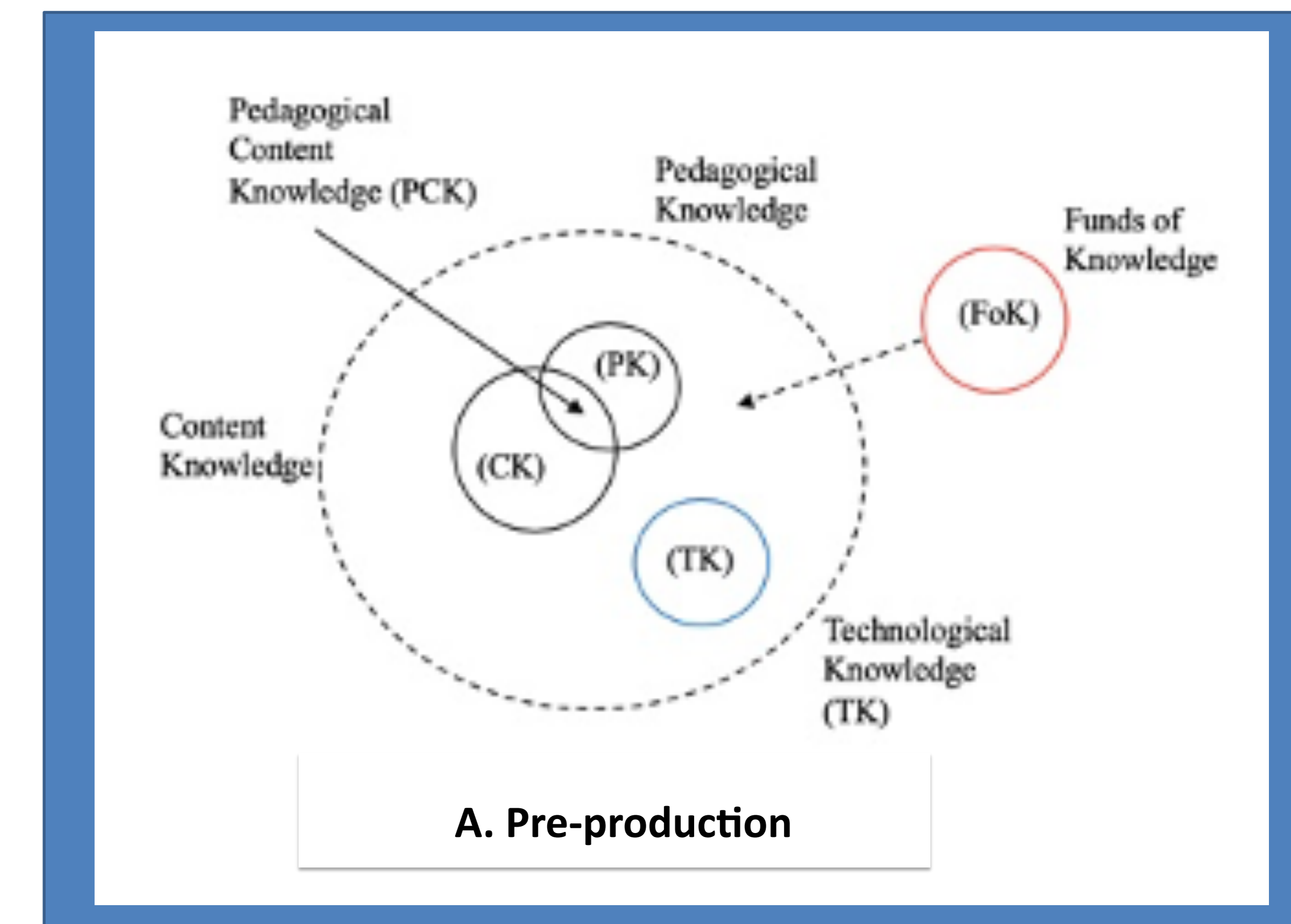


The Alternative Belief/Perspective Science Video Production



3. Teacher-made videos expanding teachers' TPACK by integrating FoK

Detached (A) and expanded (B) TPACK



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