



# Prospective language teachers' pedagogical reasoning about technology use: TPACK or not?

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**Anneke Smits**  
**Henk la Roi**  
**Roland Bruijn**  
**Floor van Renssen**  
**Heleen Vellekoop**  
**Ottavia Trevisan**

Windesheim University of Applied sciences  
English Teacher Education department  
Education innovation and ICT research group  
the Netherlands

University of Padova  
Italy

# Start of the project

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- Commitment to enhancing TPACK in pre-service teachers
- Lapadat, J. C., Brown, W. I., Thielmann, G., & Mcgregor, C. E. (2011). Teaching with blogs: a case study of technologically mediated literacy. *IJLM*, 2(2), 63–79.
  - Research into a good practice at high school level
  - Positive effects on: motivation/engagement, multimedia skills, amount of reading and writing

# Commitment to the project

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- Alternative for book reports / lengthy portfolio's
- Create engagement / reading motivation
- TPACK development

# ‘untraditional’ teacher design team

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- Issues
- Design of assignments with technology
- Redesign of literature education
  - Book choice
  - Reading in the classroom
  - Literary analysis
  - Book talks – furniture arrangements
- Reading and teaching together
- Pedagogical reasoning

# Yields



EXCITED YOU LOOK OUT OF YOUR WINDOW. THE plane is high above all the clouds. All you can see is the blue sky.

Today you are on a schooltrip to England! You can't wait to see...

*The Big Ben*

*The London Eye*

*Buckingham Palace*

# And columns, blogs, ....



## Neerlandistiek

Online tijdschrift voor taal- en letterkundig onderzoek

[voorpagina](#) [tijdlijn](#) [categorie](#) [e-books](#) [archief](#) [over Neerlandistiek](#) [Neerlandistiek voor de klas](#)

**Tagarchief:** [literatuuronderwijs](#)

### De verhalen in onze taal zijn de troef van ons vak

Geplaatst op [11 mei 2018 13:47](#) door [Redactie Neerlandistiek](#)

Door Floor van Renssen. Met medewerking van Anneke Smits en Erna van Koeven. Enkele weken geleden verschenen er vlak achter elkaar een aantal emotionele artikelen over literatuuronderwijs aan tweedegraads lerarenopleidingen. Collega's vielen elkaar aan op een snibbige toon. Het begon ... [Lees verder →](#)

Geplaatst in [column](#), [Neerlandistiek voor de klas](#) | Getagged [canon](#), [hoger onderwijs](#), [leesonderwijs](#), [literatuuronderwijs](#), [middelbaar onderwijs](#), [verhalen](#) | [6 Reacties](#)

#### Neerlandistiek

Elektronisch tijdschrift voor de neerlandistiek sinds 1992 (voorheen: Neder-L)  
ISSN 0929-6514

Bijdragen zijn welkom op [neerlandistiek.nl@gmail.com](mailto:neerlandistiek.nl@gmail.com)

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E-mail

# TPACK research in year 3

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- Reading motivation
- TPACK
- Pedagogical reasoning



# TPACK Goals

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- Foster students' TPACK
- With focus on pedagogical reasoning
- In the context of literature education



# Theoretical framework

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- **TPACK**  
(Koehler & Mishra, 2011)
- **SQD key themes** (Tondeur et al., 2012); role models, collaboration, instructional design, authentic experience, reflection, feedback
- **Students as creative producers with technology**  
(Beemt, v.d., Akkerman, S. & Simons, 2011; NMC Horizon, 2017)
- **Development of pedagogical reasoning**  
(Heitink, Voogt, Verplanken, van Braak, & Fisser, 2016; Shulman, 1987)

# Main research questions

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What (if any) development can be seen in the students' TPACK?

What kinds of pedagogical reasoning do students show after the course?

How does their pedagogical reasoning relate to their score on the TPACK core questionnaire?

# Methodology

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## Participants

- 39 students of English (3<sup>rd</sup> year, two cohorts, convenience sampling)

## Course

- 12 weeks History of English literature / 1 large group
  - 18 contact hours

## Instruments

- TPACK-core survey (Fisser & Voogt, 2011) N=39
- Student interviews, semi open N=39 (2-3 interviewers present)

## Analysis

- Open coding of 14 transcribed interviews
- Construction of a code book
- Marking and coding of all 39 audiofiles (Audio Notetaker), three coders
- TPACK-core; Pearson correlations with outcomes of qualitative analysis

# TPACK-core

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- TPACK survey: N=39

T1: Mean=3.4(0.75)

T2: Mean=3.8(0.57)

$t=2.4$ ,  $p<0.01$ ,  $d=0.6$

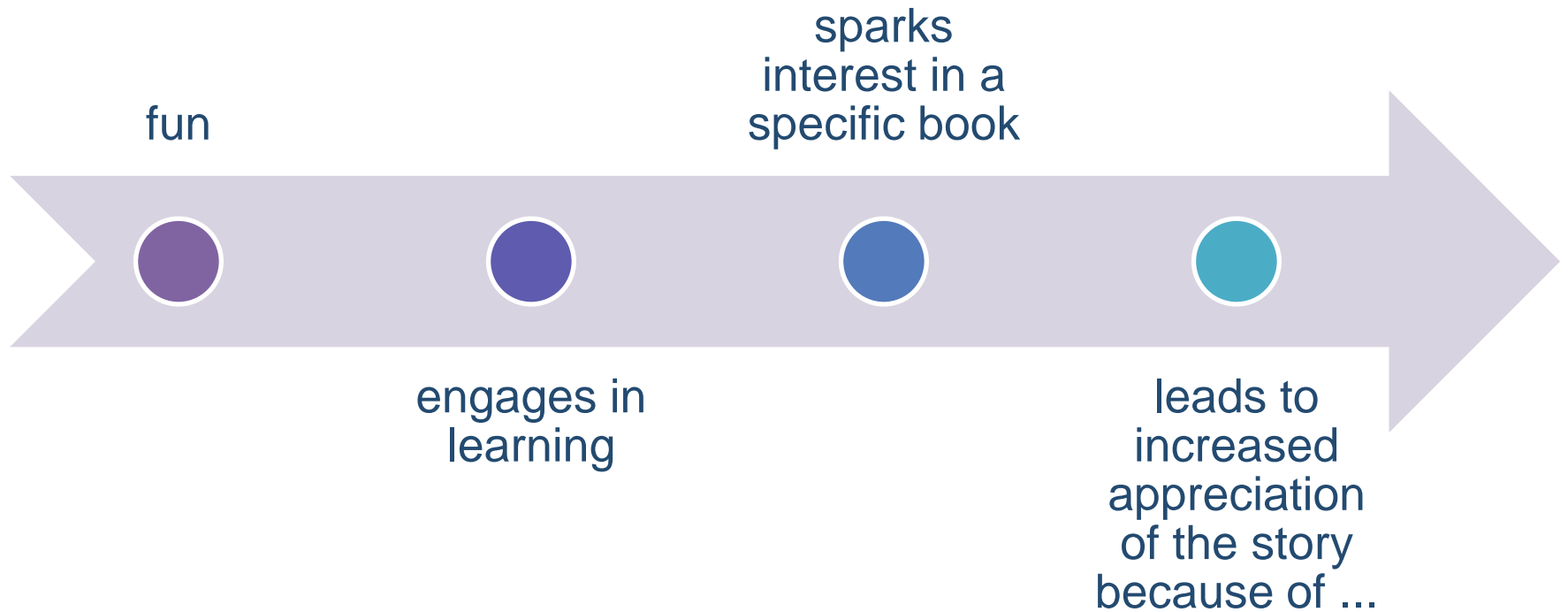
# Kinds of reasoning

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- 4 'levels' of TPACK related reasoning
  - Superficial (Non-pedagogical) reasoning
  - TP reasoning
  - TPC reasoning (students as recipients)
  - TPC reasoning (students as producers)
- Inhibiting themes
- Aligning themes

# 4 levels

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# 4th level reasoning

<b><i>Kinds of reasoning</i></b>	Number of students (N=39)
facilitate deep processing and understanding of the story (having to read it over and over again, writing a script, visualizing)	17
to show student understanding of the story (given their individual frame of reference)	11
Stimulates talking about the story, seeing each others' perspectives	9
Leads to increased appreciation of the story	8
Make the story more memorable	6
Offers students autonomy in the way they understand the story	6

# Number of identified reasonings

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	<b>Level 1 Superficial</b> N=39	<b>Level 2 TP reasoning</b> N=39	<b>Level 3 TPC student as recipient</b> N=39	<b>Level 4 Student as producer</b> N=39
Sum	86	21	46	71



# Inhibiting themes

<i>Kinds of reasoning</i>	Number of students (N=39)
low expectations of students	17
personal experience is the predominant basis	15
needs control	10
activity oriented	8
performance orientation	7

# Aligning themes

<i>Kinds of reasoning</i>	Number of students (N=39)
students can be producers	25
use of technology in education is rewarding	13
takes risks in lessons	11
strong focus on student learning	11
mastery oriented: integration of knowledge	10

# Relation between themes, reasoning and TPACK

		Inhibiting themes	Aligning themes	TPC stud-prod	TPACK
Inhibiting themes	Pearson Correlation	1	-,651**	-,485**	
	Sig. (2-tailed)		,000	,002	
Aligning themes	Pearson Correlation	-,651**	1	,528**	,324*
	Sig. (2-tailed)	,000		,001	,044
Non-pedagogical reasoning	Pearson Correlation		-,390*		
	Sig. (2-tailed)		,014		
TPC stud-prod	Pearson Correlation	-,485**	,528**	1	
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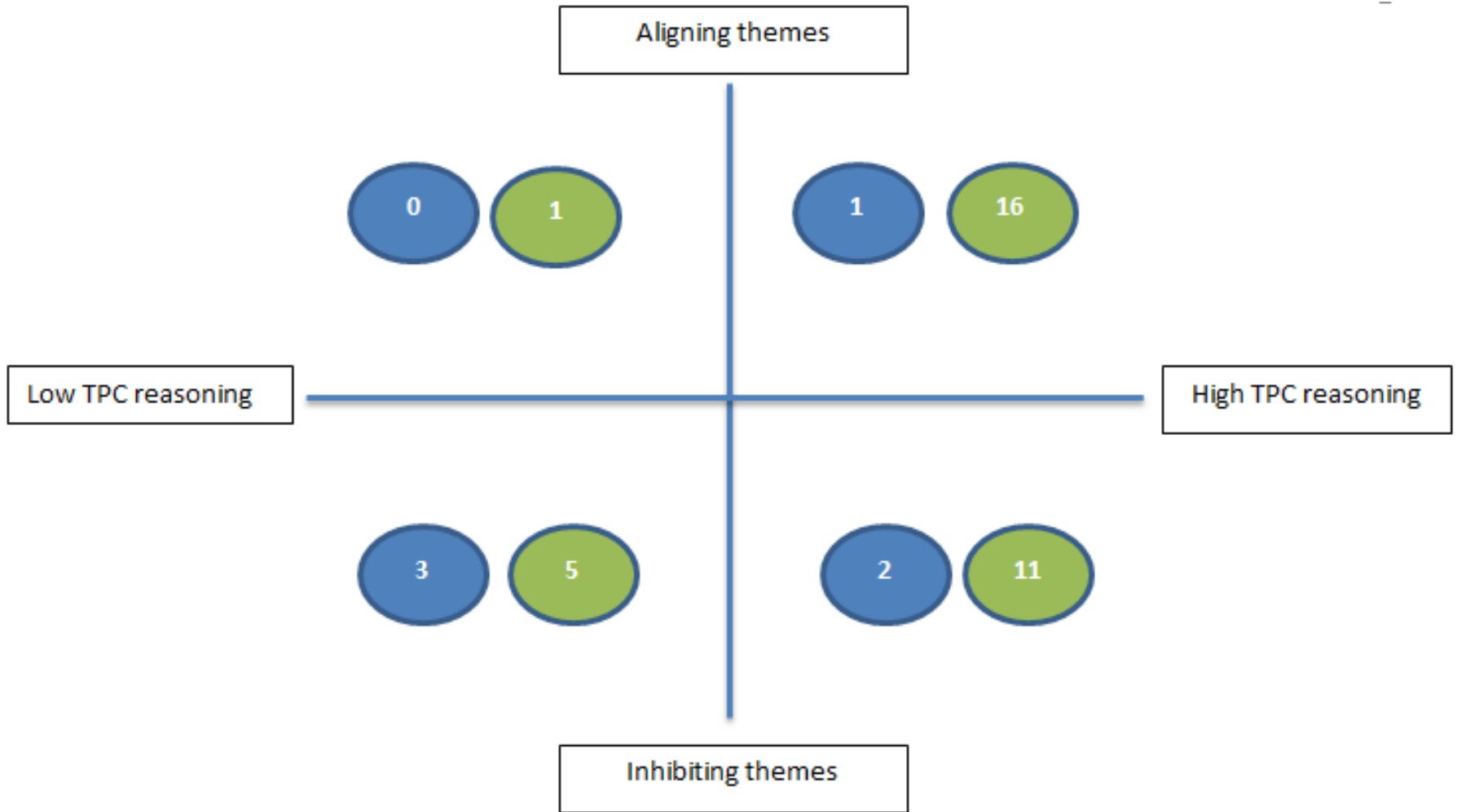
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# Survey results TPACK-core N=39

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Number of students	TPACK-core
6	Below 3.5
6	3.5
27	Above 3.5

# Themes x TPC reasoning x TPACK-core



● = low TPACK score    ● = acceptable/high TPACK

# Conclusions

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- The course design yields TPC reasoning
- Large differences in outcomes
- More than half of the group shows inhibiting themes in many cases with TPC reasoning
- In some students TPACK scores are seriously inflated
- Inhibiting themes warrant attention



# Discussion

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- Inhibiting themes may inhibit TPACK enactment in future teaching situations
- Concepts of inhibiting/aligning themes
  
- How to influence the themes?
- What could lead to inflated TPACK-core?