

An analytical framework for longitudinal study: Out-of-field learning journeys

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A methodological problem of representation of research:

Analytical frameworks

Did only one researcher contribute **to analysis**? There needs to be a discussion of how the **validity of choosing pertinent extractions from the original data corpus and the coding and interpretations** were established (regardless of how many people analyzed the data), but if it was more than one person, a discussion of reliability should also be included.

Provide a citation for "mining" and describe the **analytic process** for the present study in more detail.

Another change related to data is that there needs to be more information in the methods section about how these data align with the four elements.

- How did you target these areas in data collection to ensure that you had a sufficient sense of their identity (for example) each year?
- **How did your analysis bring out these elements?**
- How did you make sure you weren't **missing other elements** beyond these four that were critical to these new teachers' development?
- Relatedly, I would like to see each of these four elements addressed in the reporting of the cases.

As such, there is **no complete methodology section, rather a description of the project.**

Key information in relation to Case Study methodology:

- how the overall participants were chosen,
- their background and experiences,
- contexts in which they were teaching etc. is missing.

Similarly, detail relating to the **data analysis**

- e.g. approach and coding is missing.
- You refer to **thematic analysis but greater detail and explanation needs to be provided.**
- Moreover, I have not read any justification for why you chose 2 participants from a potential group of 8 and thereafter you largely draw on one participant's data.

Issues with qualitative research

- A systematic approach to conduct research
 - *Researchers aiming to use a qualitative description approach need to address from the outset (as indeed do all researchers regardless of approach) their theoretical positioning, congruence between methodology and methods, strategies to establish rigor, and the analytic lens through which data analysis is conducted. (Bradshaw et al, 2017)*
- Dealing with issues of validity and reliability OR ‘verification’, research integrity and robustness; *trustworthiness, credibility, applicability and consistency are the evaluative criteria (Hammarberg et al, 2016)*

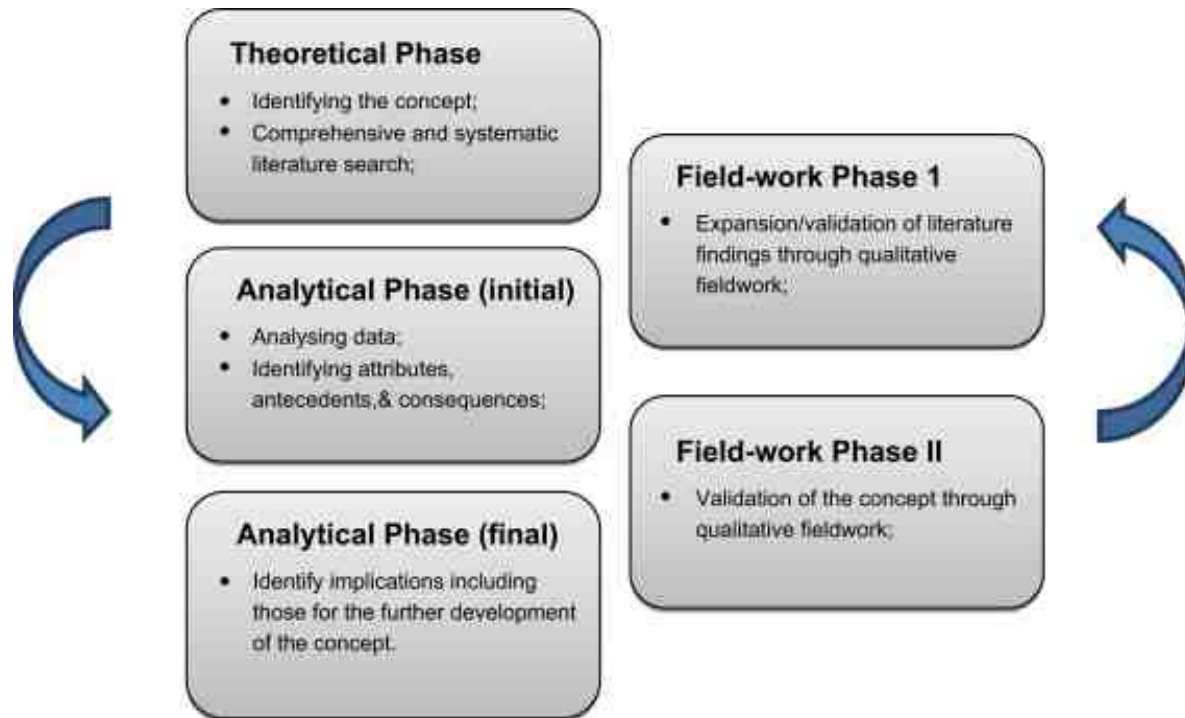
Quantitative description of Analytical framework

- An analytical framework is combined of two factors, a theoretical and a conceptual framework.
- **Analytical framework** = theoretical + conceptual framework (secondary data review, analysis plan, methodology, tools)
- A *theoretical framework* precedes a conceptual framework and has a general and visual representation of a topic.
- A *conceptual framework* includes specific information on the research scope and objectives, as well as how the problem will be explored and investigated (synthesis of what is already known about the issue, information gaps and needs, indicators, data collection techniques, tools, etc.). This means **an analysis plan is often included in a conceptual framework, outlining a research question and steps to conduct the research** (Chataigner 07/2017)

A good theoretical framework generally shares these five characteristics:

1. **Hierarchy and association:** Break down the issue at hand into main components/sub-components. Connect/group components and show the presumed associations between them
2. **Focused:** It structures main analytical outputs. It clearly displays and separates inputs, outputs, and outcomes
3. **Logical:** It makes common sense, is theory-driven, is causal, and has a clear chain (e.g. baseline, input, outputs and outcomes)
4. **Interactive:** It details how components are related and intersect analytically to provide more analytical value (e.g. $A+B=C$)
5. **Visual & intuitive:** Fits on one page, is visually displayed, and easy to communicate and understand (Chataigner 07/2017).

Analytical framework for concept analysis



An example of a general analytical structure for a particular type of analysis

combining elements of Rodger's evolutionary approach (1989) with Schwartz-Barcott and Kim's (1993) hybrid model of concept development.

Analytical framework for Phenomenographic study

- What is discerned
- *Interpretive awareness means 'to acknowledge and explicitly deal with our subjectivity throughout the research process instead of overlooking it' (p. 209)*
- *Describe and contrast different ways of experiencing a phenomenon in terms of the contents of, and relationships between the three principal components of awareness—the theme, thematic field and margin (Gurwitsch, 1964).*

Ensuring validity and reliability in phenomenographic research using the analytical framework of a structure of awareness

Chris Cope
Qualitative Research Journal, Vol. 4, No. 2, 2004, pp. 5–18

An example of using the analytical framework as a choice of what to focus on

Developing an analytical framework for multiple perspective, qualitative longitudinal interviews (MPQLI)

Susanne Vogl, Ulrike Zartler, Eva-Maria Schmidt & Irene Rieder

2018, International Journal of Social Research Methodology, 21:2, 177-190

According to Lewis (2007) qualitative longitudinal studies reveal different types of change:

(1) *Narrative change* refers to the unfolding of individual stories across time. Qualitative longitudinal studies refer to narratives rather than chronological change because participants do not tell stories in a neat linear way. 'People forget things, they think they have already mentioned them, they prefer not to volunteer them until the relationship with the researcher has developed over several interviews, or something only becomes relevant in the context of later events' (Lewis, 2007, pp. 548–549).

(2) *Participants' reinterpretation of experiences or feelings* that they described earlier; that is, issues that seem very important at one time-point but whose perceived importance may change in the course of a study (Calman et al., 2013).

(3) *Researcher's reinterpretation* could emerge after a series of interviews, when new information shows a participants' experiences in a different light.

Being clear about what is to be focused on

Multiple perspectives – according to Vogl et al.

- Information from related individuals (Mccarthy et al., 2003) on a joint matter
- Different views or ‘realities’ exist within one group (Gager & Sanchez, 2003) and different perspectives on the same experience exist between individuals coexisting in complex relationships.
- Research questions for multiple perspective studies take their units of analysis to be **relational units**, like staffrooms, and the mutual impact of related individuals. Contrasting views allow for insights regarding the dynamics of a relationship.

→ **Relational unit: multiple perspectives (teacher, teacher, mentor, principal) on the learning journey of OOF teachers and how context influences these learning journeys.**

→ **Multiple units: schools**

	Individual cases	Across cases
Cross-sectional	<p>a</p> <ul style="list-style-type: none"> • Case profiles • Provisional codes and categories 	<p>b</p> <ul style="list-style-type: none"> • Expansion of coding scheme • Criteria for comparison • Typology
Longitudinal	<p>c</p> <ul style="list-style-type: none"> • Individual trajectories • Provisional categories for change (Timing, structure and causes of change) 	<p>d</p> <ul style="list-style-type: none"> • Types of change and underlying dynamic • Criteria for longitudinal comparison • Clusters of types of participants, types of change, and process of change

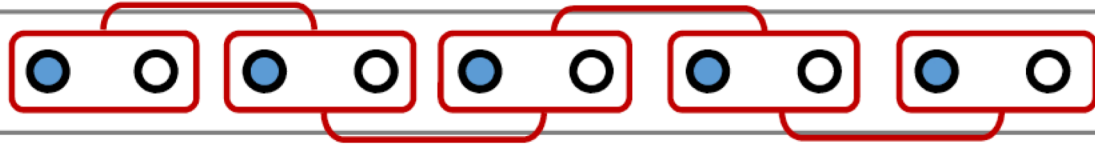
1. cross-sectional individual



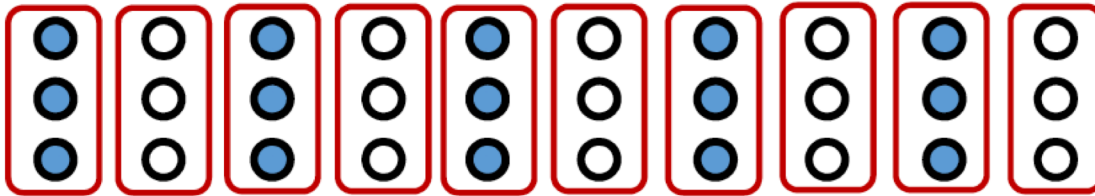
2. cross-sectional within unit



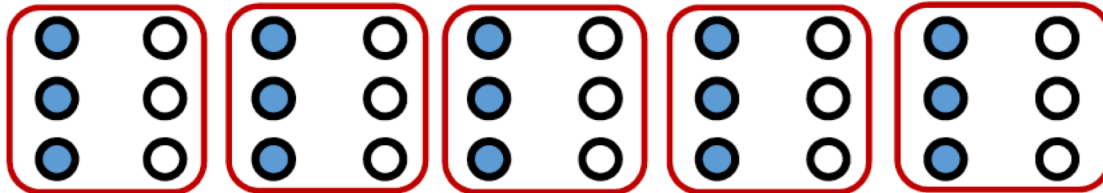
3. cross-sectional between units



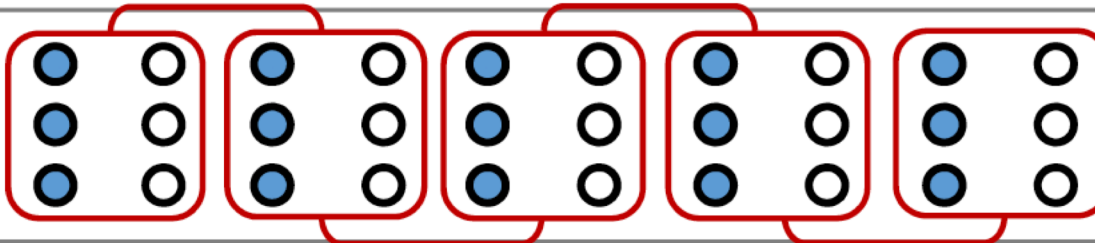
4. longitudinal individual



5. longitudinal within unit



6. longitudinal between units



Research questions

TASB Research questions:

3. What school practices successfully support the development of teacher knowledge, identity and practice during boundary crossings between specialisations?

For this analysis:

1. What features of a teacher's context and personal experiences have a bearing on their development as out-of-field teachers?
2. What is the nature of changes that can occur within the school context?




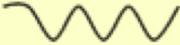
Analytical framework

1. Categories of capacity and enjoyment
2. Typologies of change
3. Categories of influence

Method: Fortune lines

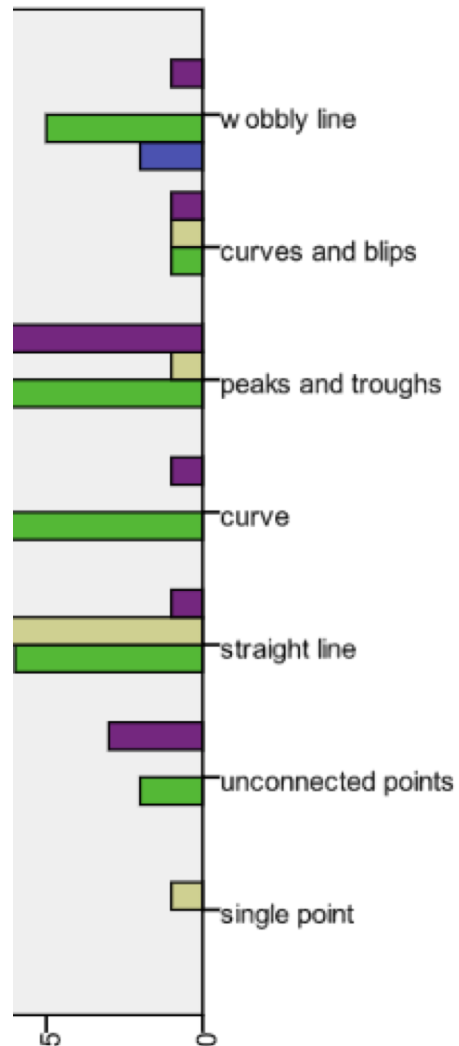
Originally from White and Gunstone (1998) as part of conceptual change processes for teachers and pre-service teachers:

- Examining how something changes over time or across a sequence of events

Symbols of Fortune Lines	Meanings of Symbols Fortune Lines
	Developing, positive fortune lines
	Worsening, negative fortune lines
	Unchanging, constant fortune lines
	Changing, variable fortune lines

From ÖZARSLAN and ÇETİN (2014)

Used in other studies to examine:



Affective response along a trajectory of learning (Wall et al, 2010)

- examined whether +ve or –ve trajectory, complex and simple;
- y axis = neutral, neutral=happy, happy and could quantify # graphs falling into these ranges.
- Peaks and troughs lines; curve and blip lines
- Led to understandings of students' conceptions of learning

Wall, K., E. Hall, V. Baumfield, S. Higgins, V. Rafferty, R. Remedios, U. Thomas, L. Tiplady, C. Towler, and P. Woolner. 2010. *Learning to learn in schools Phase 4 and learning to learn in further education projects: Annual report*. London: Campaign for Learning

Our Fortune Line interviews

School: Name: Teacher or Critical friend (circle) Subject:

Mentor/Mentee interview #2 – teacher and mentor asked to complete 4 graphs showing change over time (x=time, y=level of perceived competence and enjoyment):

- In-field competence and enjoyment
- Out-of-field competence and enjoyment



What could capacity relate to: knowledge, skills, beliefs, identity, orientation, resilience, effectiveness, competence, self-efficacy

The cases and participants

- Case 1 – 3 teachers
- Case 2 – 3 teachers

Case description of the schools and the teachers: summarise

MM interview: capacity and enjoyment as defined by the individual. IF v OOF

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Categories for capacity and enjoyment

Fortune lines: code graphs, changes, patterns

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Typologies of change

MM interview: Identify influences on change: associations, causes, reasons, critical incidences

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Categories of influences

Other interviews: triangulation using categories of C&C/influences

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Re-configure the Categories and Typologies

- Nature of the context from the categories of influence
 - Nature of changes that occur within that context
- How different teachers experience the same 'context'

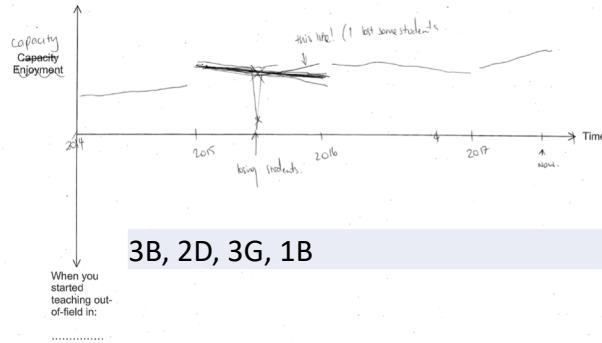
1. Categories of capacity and enjoyment

TERM/CONSTRUCT	IF CAPACITY	OOF CAPACITY	IF ENJOYMENT	OOF ENJOYMENT
Effectiveness	Y	Y		
Confidence	Y	Y		
Comfort	Y	Y		
Teaching Knowledge and skills	Y	Y		
Knowledge of content	Y			
Identity	Y			
Frustration			Y	Y
Enjoyment			Y	Y
Excitement			Y	Y
Passion			Y	Y

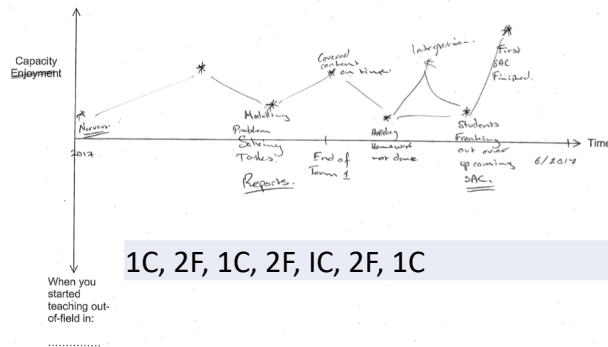
Types and directions of trajectories

	Types		Direction
A	wobbly	1	Upward
B	gradual	2	Downward
C	peak	3	Plateu/constant
D	trough		
E	curve		
F	steep		
G	straight line		
H	blip		

School: *Bradup* Name: *Janet* Teacher or Critical friend (circle) Subject: *Math*

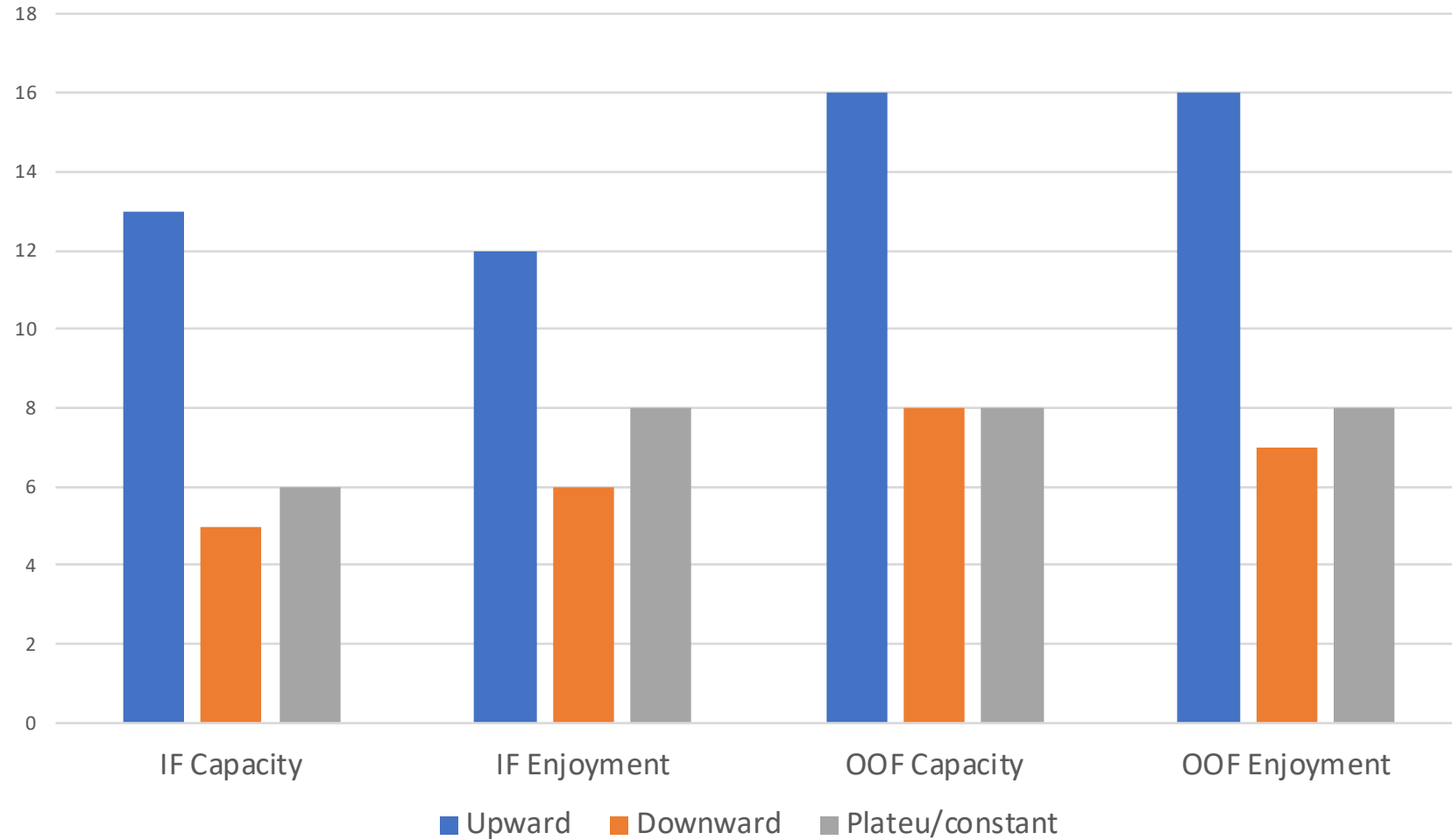


School: *Bradup* Name: *Janet* Teacher or Critical friend (circle) Subject: *Math - uncomfortable (new)*



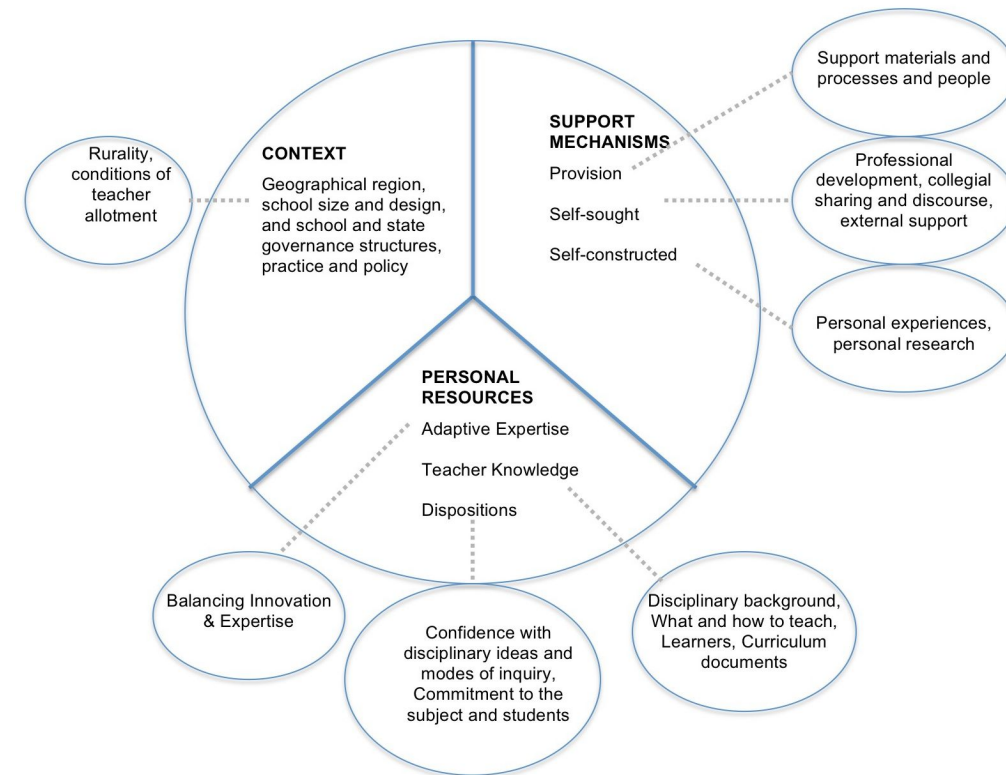
2. Typologies of change

Number of trajectories



School A	School B
School context	School context
Small school	Proactive leader
Physical environment	PBL
Timetabling issues	
Teacher factors	Teacher factors
Time constraints	Experience
Limited teaching experience	Teacher preparation
Time for Planning	IF background
Student factors	Student factors
Parent complaints	Student factors
Students upset	Student learning
Camp issues	
Student behaviour	Supports
	Another teacher
Key temporal events	PD course
Reporting	Mentor
VCE ranking	External expertise
	Access to resources
	Subject discourse in staffroom
	Teaching same subject again

3. Categories of influence



← Need to come up with a combined set and go back and recode.

Still need to do:

Typologies of change

Other interviews: triangulation using categories of C&C/influences

Other interviews: triangulation using categories of C&C/influences

Re-configure the categories

Nature of the context from the categories of influence

Nature of changes that occur within that context

How different teachers experience the same 'context'