

Achieving depth of understanding of
historical influences on literature and
coherence across methodological,
theoretical and analytic frames

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YOUR STUDY

DEPTH
(in theoretical and
conceptual frames)

BREADTH
(across your entire study)

All research is based on previous research

- Research comes from 2 sources
 - Data collected through the study:
 - Interviews
 - Observations etc.
 - Previously published research
 - From other research
 - The 'Literature'

“Oh yeah, says who?”

- Research literature as EVIDENCE / SUPPORT for your argument and review
- Key theories
 - Who are the KEY thinkers in your field about your concepts
 - Awareness of opposing views and counter-arguments
- Key concepts and ideas
 - Who are the KEY thinkers in your field about your concepts
 - Awareness of opposing views and counter-arguments
- Primary sources
- Secondary sources

If the purpose of the Literature Review is to ...

- Unpack concepts
- Be aware of a range of perspectives and counter-arguments
- Show evidence of critical and extensive reading
- Situate your research in the broader field of research
- Identify a knowledge gap
- Identify criteria for data analysis (analytical framework)***

... Then it is the thread that runs through your entire study from beginning to end

- Achieving DEPTH:
- Your lit review:
 - Is your most important argument about where your concepts and theories come from **HISTORICALLY** and how they **RELATE** to your work
 - Literature is your **EVIDENCE**
 - **REFERENCING** convinces the reader of your argument ***
 - So it must be correct and accurate

(Badenhorst, 2007 p. 21)

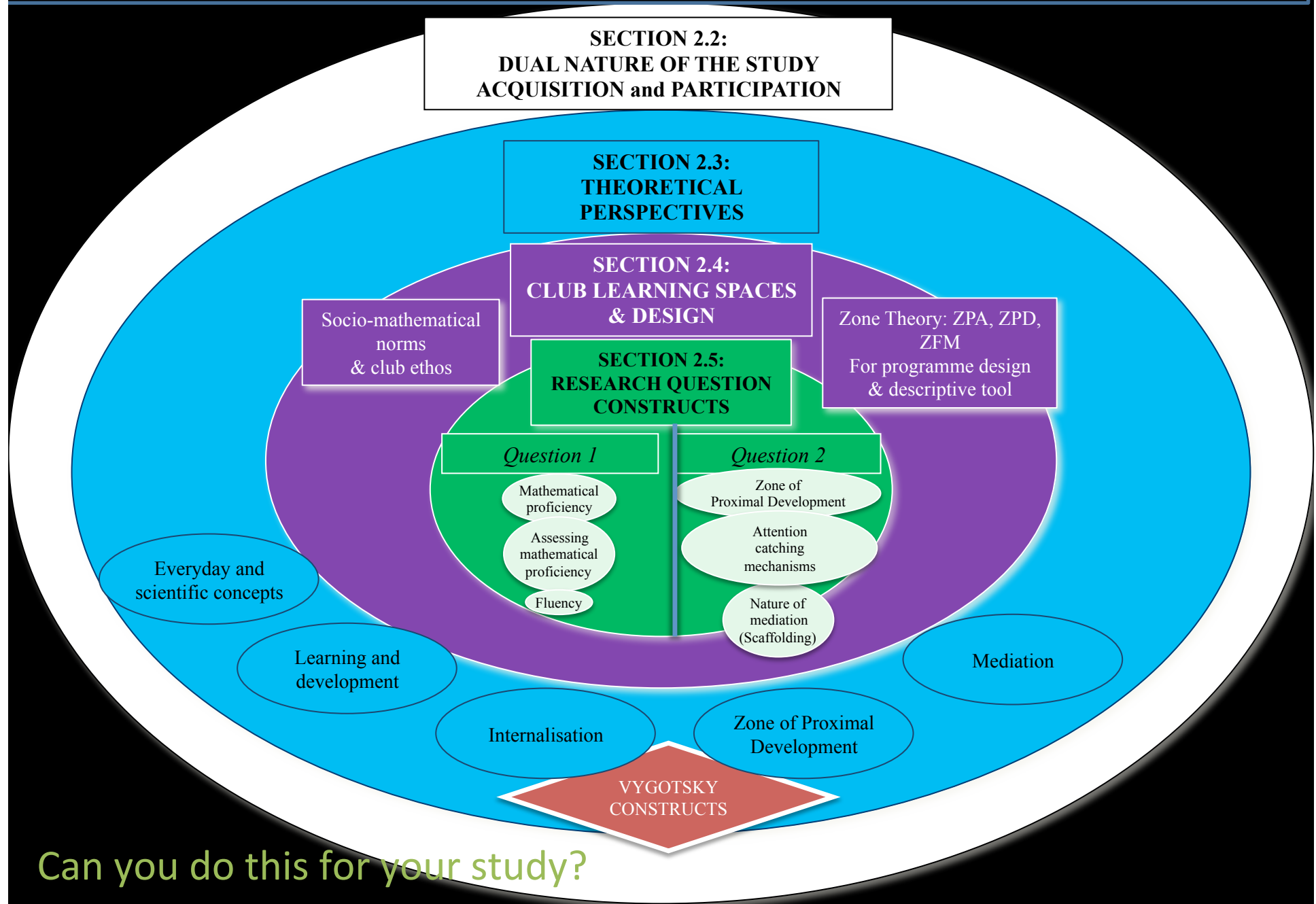
BEWARE OF

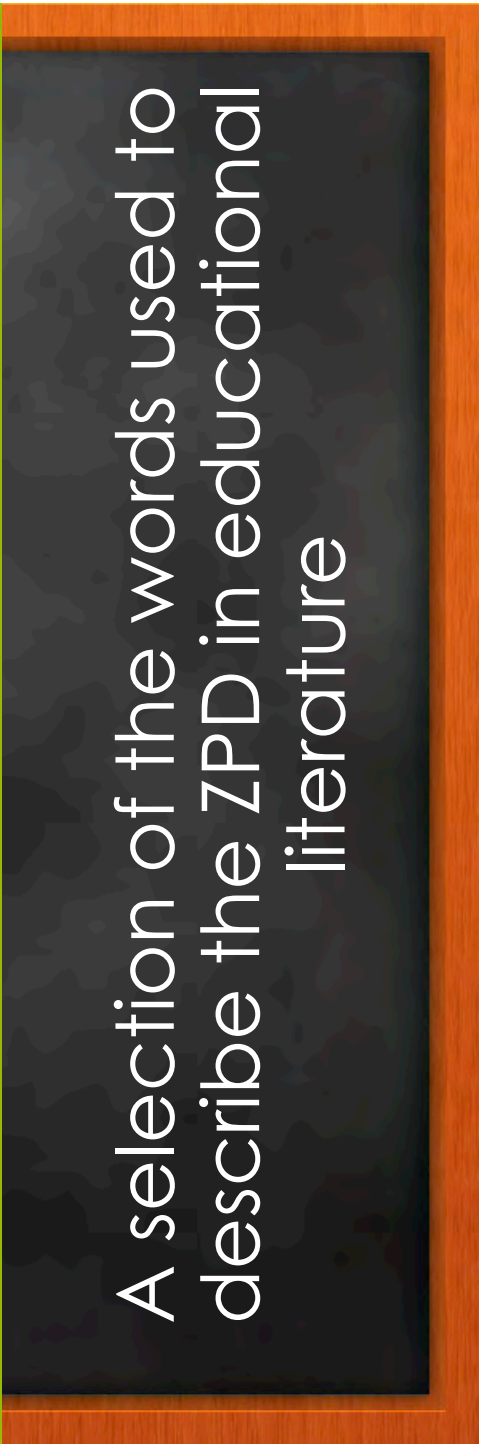
- Trivial Applications
- Superficial referencing of other people's work

Theories, concepts and ideas cannot just be 'plucked out of thin air' and used

- They have history
- They have connotations
- They have different meanings in different contexts
- e.g. scaffolding

Learners' numeracy progression and the role of mediation in the context of two after school mathematics clubs





A selection of the words used to describe the ZPD in educational literature

Diversity of interpretations ...

- Popular construct since Vygotsky's work became accessible in the West
- Language and translation issues
- No consensus of which is Vygotsky's own definition of it (due to inconsistencies in translations of his work), although 2 classic examples include:
 - *It is the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers*
(Vygotsky, 1978 p. 86)
 - *What the child is able to do in collaboration today, he will be able to do independently tomorrow*
(Vygotsky, 1987 p. 206)
- Diversity of interpretations makes it complex to review, thus many researchers categorise it to make sense of these interpretations

Interpretation of ZPD for my study:

- Supports a deeper understanding of the ZPD in context:
 - the participants, their interaction, collaboration and activity, the types of tools / artefacts used, the type of mediation used and the cultural-historical context (following Levykh, 2008).
 - A symbolic space that encompasses:
 - the whole person, the learning activity and context
 - where there is possible learning for all participants.
- The emergence of a ZPD is encouraged by:
 - presenting activities that are meaningful to the learner
 - activities that can be accomplished with assistance (from people or tools / artefacts)
 - ones that allow learner agency to benefit and take advantage of the assistance from others

When sociocultural researchers conduct research on developmental processes, they “become part of that setting and thus become **mediating** factors” in the learning they are hoping to research. This does not ‘contaminate’ the research environment; rather the researcher becomes an “additional mediational means in a learner's development”.

any assessment instrument “embodies the **researcher's** sense of an appropriate developmental path for people to follow, and produces data that identifies people's progress ... according to the direction of the path”

Smagorinsky (1995)

My interview instrument and the task-based interviews were introduced into the club environment and became mediational in nature.

ALIGNMENT

ACHIEVING BREADTH

- One important aspect of a research study is the **coherence** between the frameworks used
- What is the **relationship** between the different aspects across the frameworks?
 - Theoretical
 - Conceptual
 - Methodological
 - Analytical ***
- **HOW?**

How to do think about this alignment? Here's one way ...

ALIGNMENT BETWEEN FRAMEWORKS			
THEORETICAL Chapter x	CONCEPTUAL Chapter x	METHODOLOGICAL Chapter x	ANALYTICAL Chapter x

Methodology Thinking it through – templates available from:
<http://www.ru.ac.za/sanc/resources/researchresources/>

ALIGNMENT BETWEEN FRAMEWORKS

THEORETICAL Chapter Two	CONCEPTUAL Chapter Two	METHODOLOGICAL Chapter Four	ANALYTICAL Chapter Four
Broad socio-cultural perspective		Interpretative paradigm Case study design Qualitative data with some quantifiable data	
Vygotsky	Linking mathematical progression and fluency to Vygotsky	From theoretical standpoint of Vygotsky: <ul style="list-style-type: none"> • Researcher's role • Research participants • Research context (Empirical field) • Means of data collection (see below§) 	Overall approaches used: Change over time and basic statistical analysis (Q1) Constant comparison and grounded approach for attention catching mechanisms (ACMs) (Q2)
Learning and development	Progression of mathematical proficiency (Q1) ZPD (Q2)		
Internalisation	Progression of mathematical proficiency (Q1) ZPD (Q2)		
Everyday and scientific concepts	Wright et al (2006) Mathematical progression LFIN (Q1) Fluency: Mathematical proficiency (Kilpatrick et al, 2001) (Q1)	§MP interviews (Q1) §Fluency assessments (Q1)	LFIN framework (Q1) 3 Strands of mathematical proficiency (CU, PF, AR) (Q1)
ZPD **	ZPD (Q2) Meira & Lerman (2001, 2009) Attention Catching	§Task-based-interviews (Q2)	ZPD emergence & sustainment via ACMs (Q2)
Mediation	Anghileri's (2006) Scaffolding (Q2)	§Task-based-interviews (Q2)	Nature of mediation and relationship between this and ACMs (Q2)

Data analysis is a systematic search for meaning. It is a way to process qualitative data so that what has been learned can be communicated to others. Analysis means organizing and interrogating data in ways that allow researchers to see patterns, identify themes, discover relationships, develop explanations, make interpretations, mount critiques, or generate theories. It often involves synthesis, evaluation, interpretation, categorization, hypothesizing, comparison, and pattern finding

(Hatch, 2002 cited in Leech & Onwuegbuzie, 2007, p. 564).

How to do this for analysis? Here's one way

Structure this section by taking **each instrument in turn** and describing:

- A. The analysis strategy used
- B. The analysis framework or filter used
- C. How the data will be represented in the reporting of findings

Table 1: Approach to Analysis summary

	Question 1:	Question 2:	Question
<i>Collection instrument</i>			
<i>Analysis strategy</i>			
<i>Analysis filter or framework</i>			
<i>Representation of data in reporting of findings</i>			

The importance of analysis filters / frameworks / codes

"I read the data several times. In the first reading, I generated provisional categories to guide my subsequent readings. Then, I read the data and refined these categories, looking for themes and patterns. Upon further reading I created the ultimate categories used for the analysis. And now, my Results."

Is pretty much like a recipe that goes like this ...

"First, select all ingredients that could conceivably go in the dish. Review them carefully, then pick the ones you want to use and put the rest back in the pantry, perhaps saving them for another meal that you will prepare later. Then reconsider the ingredients you've selected and decide which are most important. Do this again just to make sure. Then mix the important ones together and give it a taste, adding other ingredients as necessary. Put them in cookware, heat, and serve."

Smagorinsky, 2008 p. 393

What did you do to the data to achieve results?

- need to know specifically:
 - what the categories are
 - how they evolved through the process of data reduction and analysis
 - how they are applied as codes to transcripts etc.
 - how they work in relation to the framing theory
 - how they are reduced from a “raw” state to “cooked”

Smagorinsky, 2008 p. 393