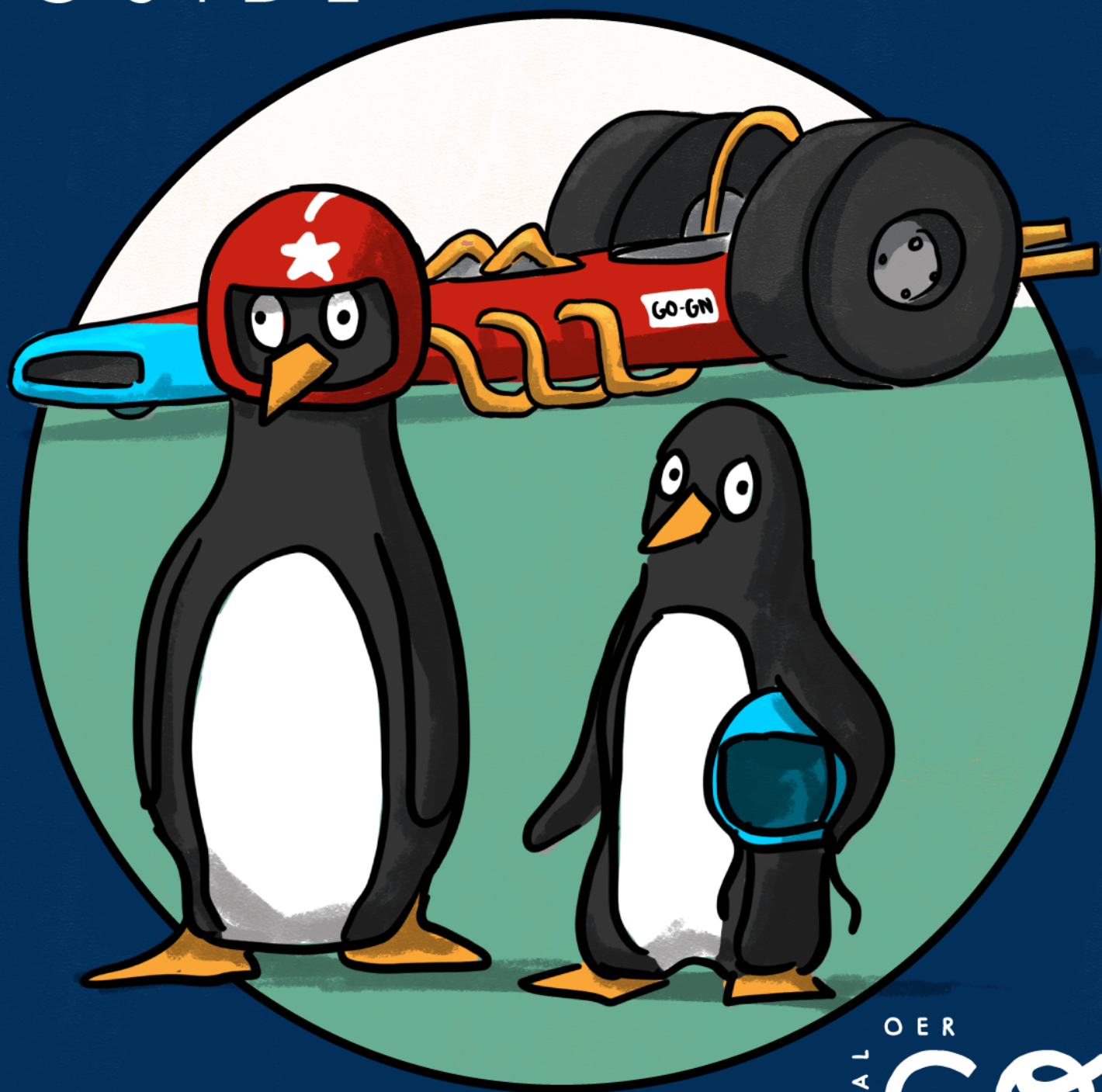


CONCEPTUAL FRAMEWORKS GUIDE



GLOBAL OER
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GO-GN

Conceptual Frameworks Guide

v. 1.0

15th September 2021



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http://go-gn.net/gogn_outputs/conceptual-frameworks/

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Introduction

Last year we published the GO-GN Research Methods Handbook (Farrow *et al.*, 2020). This handbook was well received by our members (some of whom were also contributors) and was recognised by the community with an Open Education award for open research practice

(<https://awards.oeglobal.org/awards/2020/open-research/go-gn-research-methods-handbook/>).

This was all really positive - welcomed, but not expected! An additional, unanticipated outcome was that the Handbook found a lot of interest beyond the GO-GN community, being downloaded many thousands of times and shared with researchers and scholars much more widely. The accessible style of the *Handbook* contributed to this, but this also seems to reflect a wider need for such guidance.

This *GO-GN Conceptual Frameworks Guide* can be considered a sister volume to the Research Methods Handbook, and it was always planned that we would produce such a companion piece. The rationale here is similar: this is an area where doctoral students have expressed concerns and they aren't always sure where to find help.

Once again we draw on the collective intelligence of GO-GN researchers, this time to capture and describe the ways that conceptual frameworks can support doctoral level research (with a focus on open education).

GO-GN is a network of Ph.D and Ed.D candidates around the world whose research projects include a focus on open education. These doctoral researchers are at the core of the network; around them, over two hundred experts, supervisors, mentors and interested parties connect to form a community of practice that:

- Raises the profile of research into open education
- Offers support for those conducting Ph.D research in this area
- Develops openness as a process of research

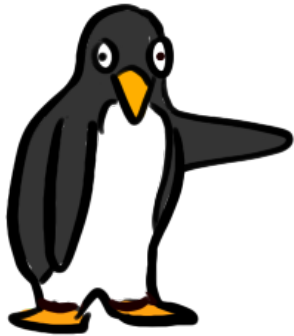
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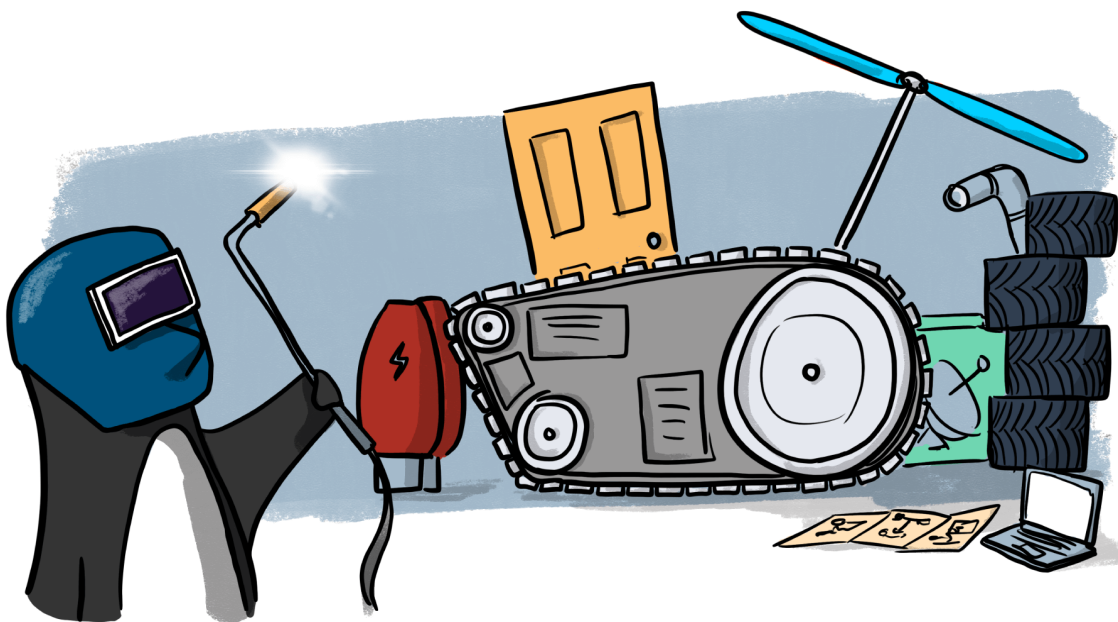


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What is a 'Conceptual Framework'?

If you're a doctoral researcher (in any discipline) or someone who produces research in a professional capacity you've perhaps encountered the phrase "conceptual framework". Sometimes a whole chapter of a Ph.D or Ed.D might be given over to investigating the relevance of different frameworks for an area of inquiry, or to synthesizing several frameworks together to ground the approach taken to answering a specific research question. Alternatively, you might not have heard much mention of conceptual frameworks or how they relate to what you are trying to achieve with your research.

A conceptual framework brings together a set of ideas and articulates the different concepts that will be used in a study or research project. Because this is highly contextual - and often specific to a particular research question or approach - there aren't really any general rules that cover how to do this. In addition, there is a lot of ambiguity and impreciseness in the language used to describe this stuff. Sometimes people talk about theoretical frameworks, or models, or a 'theory of action' that guides their research project. But do these mean different things? And are there differences between disciplines?



In an empirical project the conceptual framework might be used to determine the kinds of questions to ask in a survey, or which data points to collect and focus on. A conceptual framework might be used to generate a hypothesis that is to be tested, or to facilitate the interpretation of results. On the qualitative side a conceptual framework might be used to provide the right kinds of descriptions at different stages of the research process; to identify or explore categories of analysis; or to guide and refine the conclusions drawn by a study. All of these things can happen in a single project!

Given the importance and centrality of these frameworks, it might be surprising to learn that relatively little has been written about using them in research. There's certainly a lot less published about this than research methods or methodology, for instance. (Though different methods often come with specific conceptual frameworks built in or with a more obvious alignment). So, to start making sense of all this we begin by looking at some of the papers that offer systematic guidance or understanding of the role of conceptual frameworks in research. As this guide progresses we'll bring in perspectives from GO-GN members on their experiences with developing and using conceptual frameworks.

Conceptual Frameworks and Research Perspectives

In this section we will be guided by several texts (notably Kivunja, 2018; Leshem & Trafford, 2007; Jabareen, 2009; Passey, 2020; Ravitch and Riggan, 2017) that have offered insights into the role of conceptual frameworks and describe the range of their possibilities. We'll present several approaches which often overlap but have some key differences. One thing they all have in common is starting from the observation that the language around theories and frameworks can be ambiguous and confusing.

Kivunja (2018) argues on the basis of experience as a supervisor, external examiner and teacher of research methods that "problematic for many students is the inability to articulate differences between theory, theoretical framework and a conceptual framework for a proposed research project". Many doctoral candidates - and supervisors - often use the terms interchangeably and this can be unhelpful.

Leshem and Trafford (2007) similarly found that many doctoral candidates struggle to articulate the way they conceptualise research and that this can have implications for the success of a study.

Understandings	Misunderstandings	Consequences
Clarifying the research issue(s)	Omitting paradigm(s) which locate, and critique, research issues	Focus upon research methods at the expense of concepts
Identifying concepts from a 'survey of the literature'	Not visualising linkages between various concepts	A framework was not devised nor its function appreciated
Designing research, and explaining methodology and the methods	Overlooking strategic and guiding roles for conceptual frameworks	Lack of explicit and cohesive relationships throughout the research

Ph.D candidates' comprehension of conceptualising research (Leshem & Trafford, 2007:95)

Kivunja (2018) suggests five critical questions that should be asked about your "theory", "theoretical framework" and "conceptual framework":

1. What does each of these terms mean?
2. When and how should each be used?
3. What purposes does a theoretical framework serve?
4. How do you develop a theoretical framework for your research proposal or thesis?
5. What does a good theoretical framework look like?

The key distinction Kivunja (2018) makes is between a theoretical framework and a conceptual framework. The former is intimately connected with a systematic literature review while the latter describes the researcher's approach to answering a research question. They draw upon Kerlinger and Lee (2000) to define theory as "a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena." Theories emerge from data over time as lawlike relationships are identified and undergo iterative improvement. For an approach to qualify as a theory, it must be logical and coherent, with clear boundaries over where it is supposed to apply. Theories clearly explain the relations between variables and make specific and substantive predictions about outcomes involving the variables, principles and constructs that comprise the theory. (Conceptual frameworks can be much looser in their cognitive mapping: as Rudestam and Newton (1992:6) have it, a conceptual framework "is simply a less developed form of a theory".)

This kind of emergent, general presentation of lawlike relationships is generally too large and unwieldy to be repeated in its entirety as part of a research project. So, theoretical frameworks are used to structure and scaffold research by summarising and describing relevant theoretical aspects from the work of experts in the field. Seen this way, a theoretical framework is very much a tool: "a theoretical coat hanger for your data analysis and interpretation of results" (Kivunja, 2018:46). Selecting and describing a theoretical framework is a scholarly activity which needs to systematically ground one's research in the existing literature.

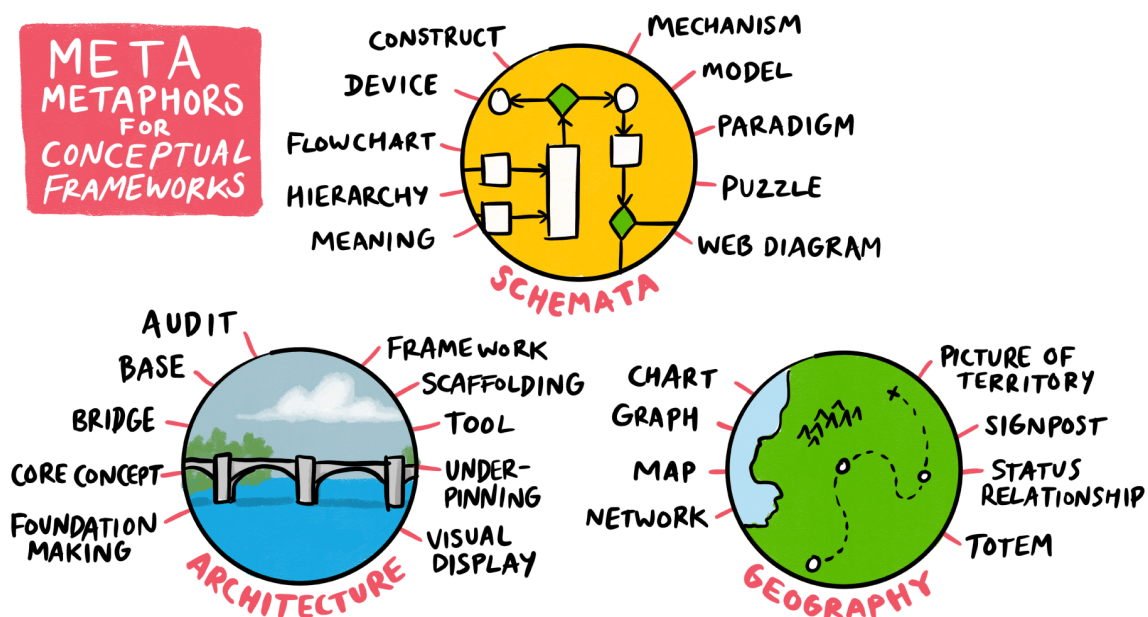
"Ideally, your theoretical framework should emerge from your literature review. This contrasts significantly with your conceptual framework, which, in the main, comprises your own thinking, about all the different components of your research (including the theoretical framework), as explained above." (Kivunja, 2018:52)

Kivunja (2018) goes on to use the metaphor of a house with different rooms to explain how a theoretical framework is only a part of one's conceptual framework: "A helpful analogy might be, that while the conceptual framework is the house, the theoretical framework is but a room that serves a particular purpose in that house. The purpose of the room could, for example, be the kitchen, or living room, or bathroom or bedroom, or garage. While each room has a unique purpose, no single room can serve all the functions that a house serves. This analogy should help you to appreciate better why these two terms should never be used interchangeably. Only in a one-room 'house', would the house and room be one and the same thing. Most houses are not built like that" (Kivunja, 2018:47).

It's worth noting that the metacognitive aspects of conceptual frameworks need not be explicitly written up in a doctoral thesis with their own chapter or justification as this is not expected in the same way that it is for theoretical backgrounds. Given their centrality this might be a bit surprising, but perhaps explains why people sometimes use terms like "theoretical framework" and "conceptual framework" interchangeably.

Kivunja's (2018) advice is to concentrate on being really clear and explicit about the roles of theory, theoretical foundation and conceptual foundation, always having one eye on the practical side of things. How are these constructs helping you to answer your question? How do they influence or improve the process of gathering and analysing data? You should be able to explain all aspects of the models and frameworks used in your project and justify their use, showing how they are grounded in recent scientific literature. Thus, the conceptual framework relates to how you operationalise and metacognize your research project. It's your master plan, your approach, your roadmap and your unique perspective. As Miles and Huberman (1984:33) put it, your conceptual framework is "the current version of the researcher's map of the territory being investigated".

Leshem & Trafford (2007) point out that metaphors like this are common ways of trying to describe a conceptual framework - so much so that they often come to replace the conceptual framework itself. This risks the conceptual framework becoming something that obscures rather than illuminates. They identify three clusters of 'meta-metaphors': architectural, geographic and schematic.



Categorisation of conceptual framework metaphors
(based on Leshem & Trafford, 2007:104)

Positionality

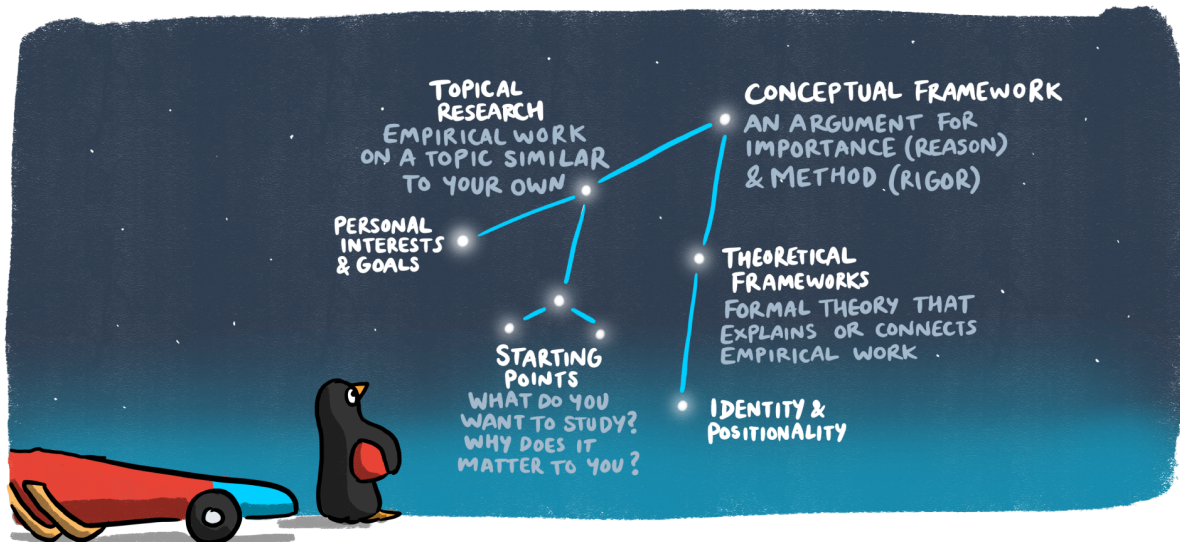
This idea of using conceptual frameworks as a guide to managing your project as a whole is also employed by Ravitch and Riggan (2017). They suggest six key framing questions for scholars (pp.18-19):

1. What do I want to study?
2. Who cares?
3. What literature do I need to include, and when have I had enough?
4. How do I know what kind of data to collect and how to analyze them?
5. How does my own position and way of seeing the world shape the framing and execution of my research?
6. How do I deal with surprises in the data or unexpected developments in the field?

Ravitch and Riggan (2017) emphasize the importance of positionality and personal epistemology in their approach to conceptual frameworks. Six of the nine chapters of their book are given over to highly detailed accounts from individual researchers which describe how they designed and used conceptual frameworks. (We do a similar thing later on in this *Guide*.) The goals, interests and identities of the researcher inform the development of a conceptual framework in tandem with engaging with theory and scientific literature. This means that conceptual frameworks should be understood as integrative and dynamic: they will continually evolve over the lifecycle of a project. The key thing is that useful and informative critical connections continue to be made as an understanding of the whole develops.

Some care needs to be taken here regarding the importance of personal opinion. Just because a researcher has some beliefs about something which might ground or influence their work, it does not mean that the conclusions they draw are necessarily valid. There is a balance to be struck between personal insights and scientific method(s); even in a highly participatory approach (such as Action Research) there are processes and good practices that support the rigour and validity of the research.

“[W]hile personal interests and goals, social location and positionality, topical research, and theoretical frameworks are what comprise a conceptual framework, we would never expect to see them organized according to these elements. In finished form, a conceptual framework is organized and expressed as an argument. Each step of that argument is a proposition justified by the topical and/or theoretical literature.” (Ravitch and Riggan, 2017:13)



Elements of a Conceptual Framework (Adapted from Rogers, 2016:1710)

We see here a similarity with Kivunja's idea that the conceptual framework is the overarching organising principle for a research project. Ravitch and Riggan (2017) also frame this as an attempt to overcome using terms like conceptual/theoretical framework interchangeably and ambiguously.

Conceptual Frameworks as Underpinning Constructs

A consistent typology of terms which are sometimes used interchangeably is provided by Passey (2019; 2020). Passey (2020) begins with the idea that doctoral students are universally required to make some original contribution to knowledge - selecting a conceptual framework could be considered a characteristic challenge of doctoral research - but this is often not very well defined at an institutional level. Some doctorates are more focused on pure research while others relate more to policy or practice. This means that the “underlying constructs” like theories, conceptual frameworks and so on can take on quite different forms. The point is also made (in Passey, 2019) that educational technology - which straddles these kinds of divides more than other disciplines - can be particularly vulnerable to ambiguity and a lack of clarity. This may also translate to even more ambiguous or interchangeable language being used to describe the scholarly basis or organising principle of a research project.

Contributions to policy and practice should be considered in the context of underpinning models, frameworks or theories. How conceptual frameworks are defined or understood has implications for research, so it's important to explicitly identify and recognise originating research. The epistemological and ontological stance within a study may shape the choice and role(s) of models, frameworks and theories, so it's necessary to critically engage with the assumptions of the researcher and the project. Research questions should be framed in ways that allow alternative ways to view factors and features relating to underpinning models, frameworks or theories. Finding contextual matches, shifts, amendments or additions can all offer important contributions to the field and reflect the way that approaches evolve (and hopefully improve) over time.

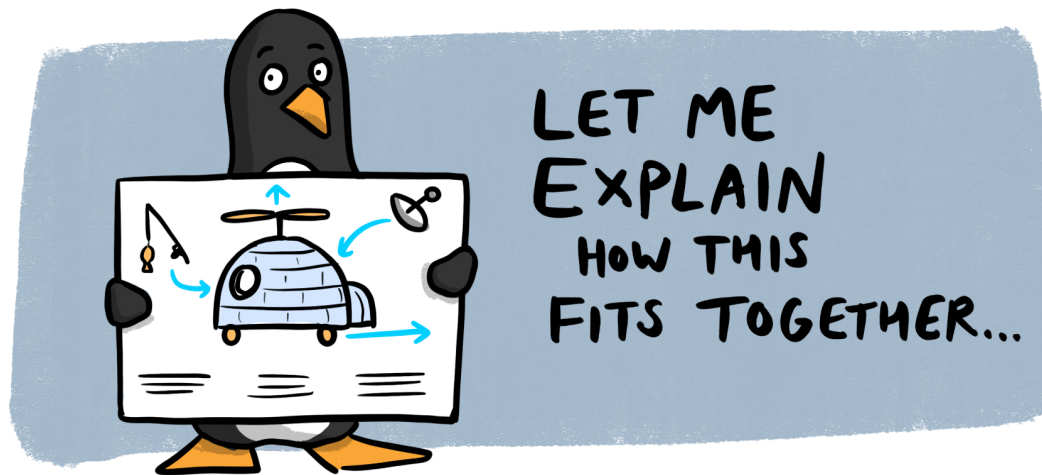
Passey's (2020) goal is to provide a robust description of these fundamental types of 'underpinning' construct. This table shows some basic types along with examples from educational technology.

Form of underpinning	Description	Examples
Model	A model holds for a given case or stated population, arising from context-specific research, often indicating main features of influence or contribution	Technology Acceptance Model (TAM) (Davis, 1989) Diffusion of Innovation (Rogers, 2003) Pathways to Implementing Change (Corbett & Rossman, 1989)
Conceptual Framework	Conceptual frameworks tend to be more flexible and descriptive, identifying factors or criteria that have influence on a particular field within the more major features	Technological, Pedagogical and Content knowledge (TPACK) (Mishra & Koehler, 2006) Discovery Learning (Bruner, 1961) Experiential Learning (Kolb, 1984)
Theoretical framework	A theoretical framework arises from outcomes beyond a single study, based on one or more theories	Social Creative Constructivism (Passey, Dagiien, Atieno & Baumann, 2019) Human Motivation (Maslow, 1943)
Theory	Theories consider a broader and deeper concern or context, suggesting the detail of what might be more general, beyond a given context	Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis & Davis, 2003) Social Constructivism (Vygotsky, 1978) Constructionism (Papert, 1986) Behaviourism (Skinner, 1953)

Examples of forms of underpinning constructs (Passey, 2020:3)

Passey's systematic approach perhaps differs from those of Kivunja and Ravitch and Riggan in that conceptual frameworks are treated as one possible perspective rather than the defining or guiding point of orientation for other aspects of a study. However, it would still be possible to use a conceptual framework in this way: it's really a difference of emphasis. Passey just suggests that other uses of theory are possible. This can be guided by a pragmatic interest in the desired outcome and impact of research, and often reflects one's positionality.

Multiple 'constructs' might be used for different purposes in a study, but there is a balance to be struck between multi-theory approaches which can illuminate different aspects of a research activity and trying to make several different (and perhaps incompatible) theories coherent together. (Passey notes that mixed methods approaches are concerned with data collection and not to be confused with multi-theory frameworks.) As we saw previously, the only real test is how well it all hangs together: "in research, strength of argument often determines possibility in these respects" (Passey, 2020:6).



What does it mean for everything to hang together? This may vary from case to case but could be summed up as a consistent approach which is as complicated as it needs to be, but no more complex than that. Passey (2020) suggests that it is key that the relationships between different models, frameworks or theories are well understood and explained clearly, aligned to the appropriate research paradigms. Care needs to be taken that ontology, epistemology, methodology, data collection and analysis are organised in a sensible way that builds on the critical perspectives of those whose work is being built upon or added to.

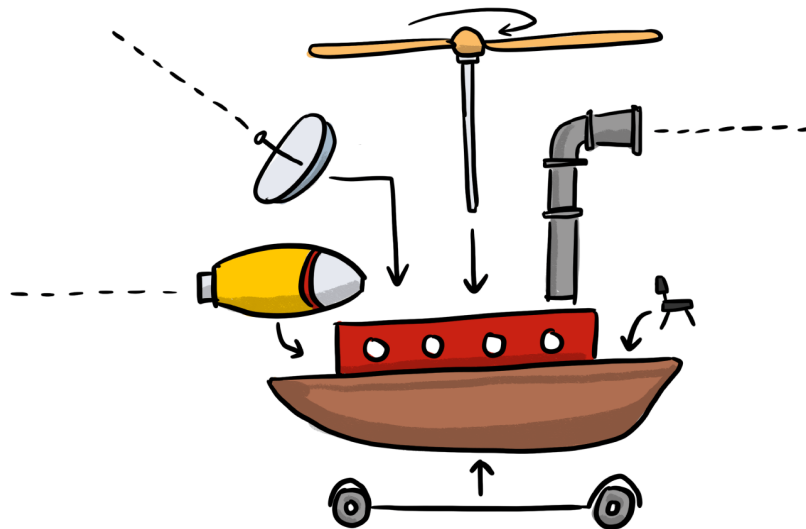
Here we can see the relationship between conceptual framework and method is ideally going to be close, explicable and defensible. Passey provides the following example. (There's a blank version of this table for your use at the end of this book. For more on the relationship between ontology, epistemology and methodology see Farrow *et al.*, 2020 pp.8-13).

Elements of your research approach and design	Position or stance, and implications	Possible underpinning constructs
Focus or title of the study	An evaluative study exploring the motivational benefits arising from uses of digital technologies	Evaluative frameworks, motivational theories of learning, and models of digital technology practices might all be relevant and possible
Ontological and epistemological position	Ontological position is subjective, concerned with the interpretation that individual consciousness brings; epistemological position is constructivist, concerned with individual constructions of reality	Social constructivism as an overarching theoretical conception is possible
Methodological approach	The methodological approach is interpretivist, related to a subjectivist position, particularly concerned with context in different locations, and considering multiple meanings	Contextual constructivism (Cobern, 1991) as a more related theoretical framework could be chosen
Methodological design	From an interpretivist perspective, a multiple case study design will be taken, in order to consider different contexts, and to gather evidence of a subjective nature to consider how motivational benefits are being evaluated at individual and contextual levels	Multiple case study design with evaluative features focusing on educational technologies (Scanlon, Blake, Issroff & Lewin, 2006) could be selected
Data collection methods	Data will be gathered in six different institutional settings, where the same digital technologies are being used, where mixed methods gather evidence about uses - from documentary evidence, observed by the researcher, described by the teacher, and motivation from uses can be evaluated by learners	Evaluation of motivational outcomes are framed through the self-determination theory of Deci and Ryan (2002) and self-theories of Dweck (1999); data gathering instruments are created using these underpinning frames
Data analysis methods	Data are analysed both qualitatively and quantitatively, from interpretivist and subjectivist perspectives	Motivational frames are used as ways to identify forms of motivation, while data are analysed in and across cases

An example of multiple forms of underpinning constructs for a study (Passey, 2020:9)

Deconstructing the 'Concept'

An alternative take on how to think about conceptual frameworks is offered by Jabareen (2009). Like Passey, Jabareen emphasizes that multidisciplinary perspectives are often necessary for addressing contemporary research questions, and sees qualitative approaches as the best way to investigate complexity by bringing together different bodies of knowledge.



Jabareen's approach to conceptual frameworks is to see them as oriented towards deeper understanding rather than a theoretical explanation (which is what quantitative approaches offer). Following Deleuze & Guattari (1991:15-21) Jabareen (2009) offers a post-structuralist account of 'concepts' as historical and defined by their component parts and relation to other concepts.

1. A conceptual framework is not merely a collection of concepts but, rather, a construct in which each concept plays an integral role.
2. A conceptual framework provides not a causal/analytical setting but, rather, an interpretative approach to social reality.
3. Rather than offering a theoretical explanation, as do quantitative models, conceptual frameworks provide understanding.
4. A conceptual framework provides not knowledge of "hard facts" but, rather, "soft interpretation of intentions"
5. Conceptual frameworks are indeterminist in nature and therefore do not enable us to predict an outcome.

6. Conceptual frameworks can be developed and constructed through a process of qualitative analysis.
7. The sources of data consist of many discipline-oriented theories that become the empirical data of the conceptual framework analysis. Although conceptual framework analysis generates theories or conceptual frameworks from multidisciplinary bodies of knowledge, metasynthesis, a systematic synthesis of findings across qualitative studies, seeks to generate new interpretations for which there is a consensus within a particular field of study.

Like Passey, Jabareen (2009) emphasizes the multivalent nature of conceptual frameworks and sees this as a way to bring together important ideas from different disciplines or sectors. One difference though, is that Jabareen's response to the vagueness or ambiguity around conceptual frameworks is to reserve them for qualitative attempts to draw an understanding from several "texts" through a process of theorization.

The process for this is presented as follows:

1. Mapping the selected data sources
2. Extensive reading and categorizing of the selected data
3. Identifying and naming concepts
4. Deconstructing and categorizing the concepts
5. Integrating concepts
6. Synthesis, resynthesis, and making it all make sense
7. Validating the conceptual framework
8. Rethinking the conceptual framework

This process is reminiscent of a systematic literature review, but focused on refining conceptual frameworks arising from texts rather than summarising the state of the art with respect to a research area. When doctoral learners are asked to write a literature review early on in their project the idea of developing a conceptual framework as part of this is often only implied. (As we saw above, there often is no requirement to present one's conceptual framework or even spend much time problematizing one.) Making explicit the connections between textual sources and elements of one's conceptual framework helps both the researcher and (ultimately) the supervisor(s) and examiner.

Weaver-Hart (1988) argued that conceptual frameworks are unclear because the term itself brings together something abstract (conceptual) with something concrete (a framework). Jabareen's (2009) work can be seen as an attempt to close this gap by emphasizing the close relationship between concepts and their textual (concrete) grounding.

A deconstructive approach is not going to be relevant for every project (although following this rubric can generate interesting perspectives). However, the attention to detail Jabareen (2009) brings to the role of text(s) in qualitatively grounding a conceptual framework is generally useful, especially if one understands things like interviews, personal statements, audio-visual resources and interactive media as "texts".

Social Network Analysis and Conceptual Frameworks

The conceptual frameworks presented here are means of integrating research findings into theory. An alternative approach is to take a more quantitative, neutral stance and through data mining and analysis, allow a framework to emerge. One such approach is to use citation or social network analysis (SNA).

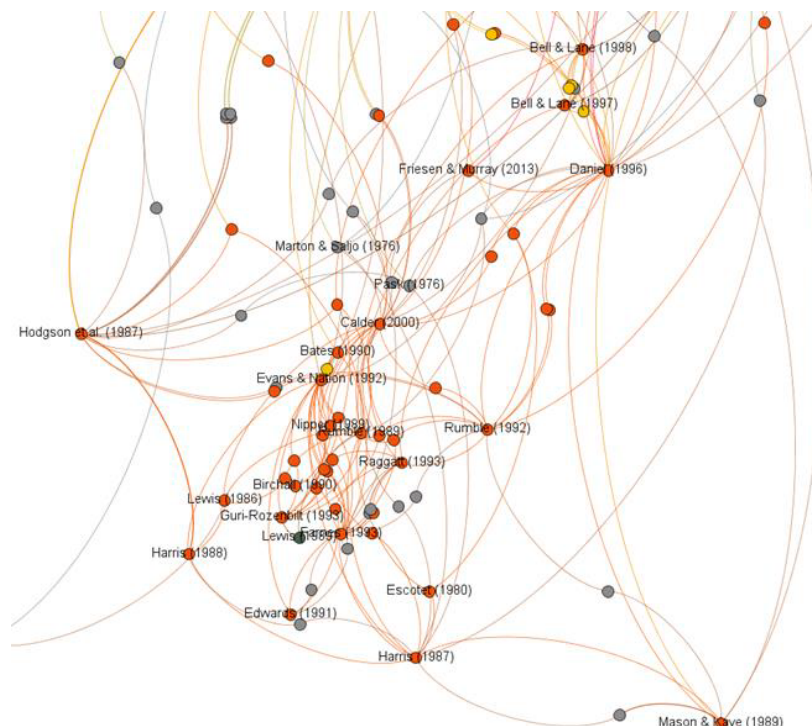
SNA can be understood as a toolkit of different metrics where social relations can be conceived of as links between individual nodes. This allows novel insights to be gained in terms of the structure of communities, resources and nodes as well as the importance of key connections. This approach is commonly applied to social networks, such as Twitter, but can also be applied to the literature within a field, a technique known as citation analysis. The literature cited in any academic publication then can be “conceived of as a network where each reference is a node, linked to another node (the publication it is cited in) through a tie which represents the social practice of a citation” (Weller *et al.*, 2018).

For example Dawson, Gašević, Siemens and Joksimovic (2014) used this approach to analyse the citations in papers at the Learning Analytics and Knowledge annual conferences from 2011 to 2013. Bozkurt (2019) reviewed the pattern of 54,940 references across 1685 articles and used social network analysis to examine the distance education field.



Timeline Visualisation of Distance Education (Bozkurt, 2019)

Weller *et al.* (2018) similarly implemented the technique to map the open education landscape.



A citation analysis network (From Weller *et al.*, 2018)

What these analyses have in common is that they do not impose a framework on the literature, but rather allow one to emerge from the relationships between citations. (A conceptual framework may also be applied to interpret the emergent structure, however.) This technique can be used to provide quantitative support for claims about discourse over time, or to describe how paradigms and practices evolve. One effective approach can be to combine network analysis with more traditional analysis in order to triangulate or contrast perspectives.






























Use Cases for Conceptual Frameworks

We have seen that there are use cases for conceptual frameworks throughout the research life cycle. Leshem & Trafford (2007) see one of the main benefits of using conceptual frameworks in doctoral research as introducing more granular and explicit descriptions into the research process. This can include things like:

- modelling relationships between theories;
- reducing theoretical data into statements or models;
- explicating theories that influence the research;
- providing theoretical bases to design, or interpret, research;
- creating theoretical links between extant research, current theories, research design, interpretations of findings and conceptual conclusions.

These kinds of descriptions are useful at all stages of the research process, including generating ideas; refining a research question; establishing viable routes through data collection & analysis; interpreting results; keeping track of important variables; pulling everything together; communicating results and visualising future research. By making what you are doing more explicit and more clear, unhelpful ambiguities are reduced. The research process is more focused and holistic when an effective conceptual framework is in place.

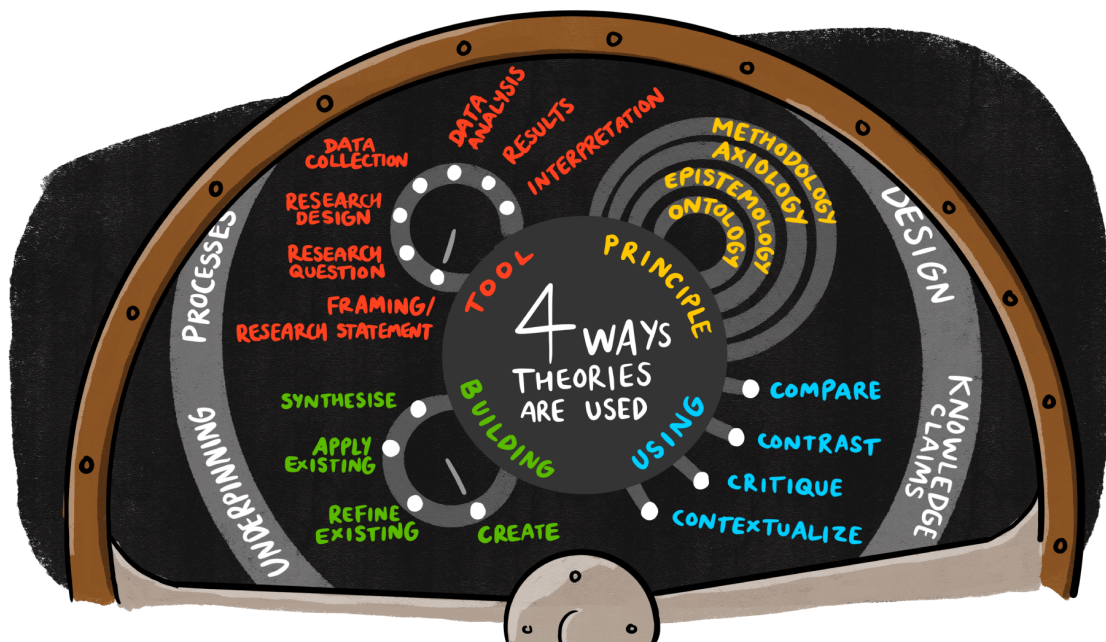
The following matrix shows how conceptual frameworks can be understood to apply throughout the research process.

Research Lifecycle Stages	Use Cases for Conceptual Frameworks						
	Describe	Guide Decisions	Provide Context	Generate ideas	Organise	Analyze	Explain
Framing / Research Statement							
Literature Review							
Research Question							
Research Design							
Data Collection							
Results							
Interpretation							

Use Cases for Conceptual Frameworks through the Research Lifecycle

Building on Oliver (2002), Passey (2020) makes a distinction between four fundamental ways that theories are used in research and scholarship. From each of these basic modes a range of different elements in the research process may be implied.

- Theory as tool - used throughout the research process
- Theory as principle - informing methodological and philosophical position
- Theory building - created anew, or refined/synthesized from others
- Theory using - engaging with knowledge claims

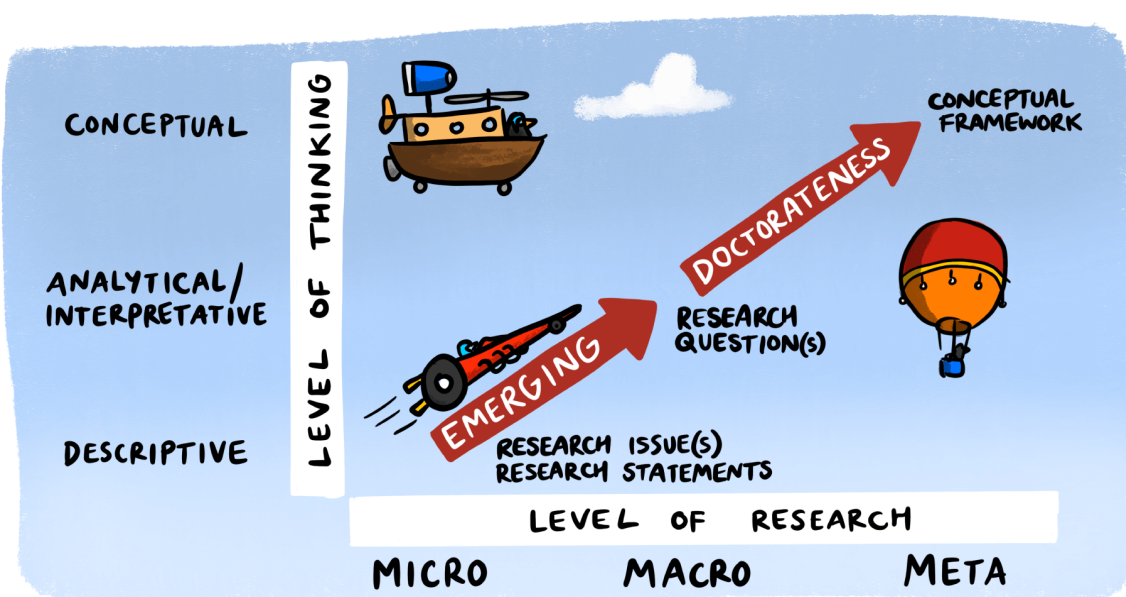


Uses of Theory in Research (based on Passey, 2020)

Conceptual Frameworks and 'Doctorateness'

Conceptual frameworks don't necessarily have to have an explicit philosophical justification in the way that is expected of research methods; we saw for instance in Kivunja's approach a role for 'topical' research. Though conceptual frameworks can be flexibly used, it's still important to retain a meaningful connection between a conceptual framework and the research method proposed for a study.

Leshem & Trafford suggest on the basis of empirical data about Ph.D vivas (Trafford & Leshem, 2002a; 2002b) that successful conceptual frameworks progress in tandem with a doctoral research project. Higher order cognition is required to successfully navigate the process of moving through practical stages such as the analysis and interpretation of data, and the conceptual level is where the reflective and meta-reflective advances are made. They present this metacognitive aspect as the essence of doctoral learning which is explored in a viva: "doctoral candidates who raise their levels of thinking beyond descriptive and content aspects of research will increasingly display doctorateness" (Leshem & Trafford, 2007:102). Conversely, research which produces data which is descriptive of some phenomenon but doesn't reflectively connect this to wider concepts might be seen as failing to meet the standards expected.



Technical, practical and conceptual aspects of doctoral research
(based on Leshem & Trafford, 2007:103)

Berman & Smyth (2015:134) come to a similar conclusion, arguing that “ higher level conceptual thinking and the development of an explicit conceptual framework is a core element of quality doctoral work”.

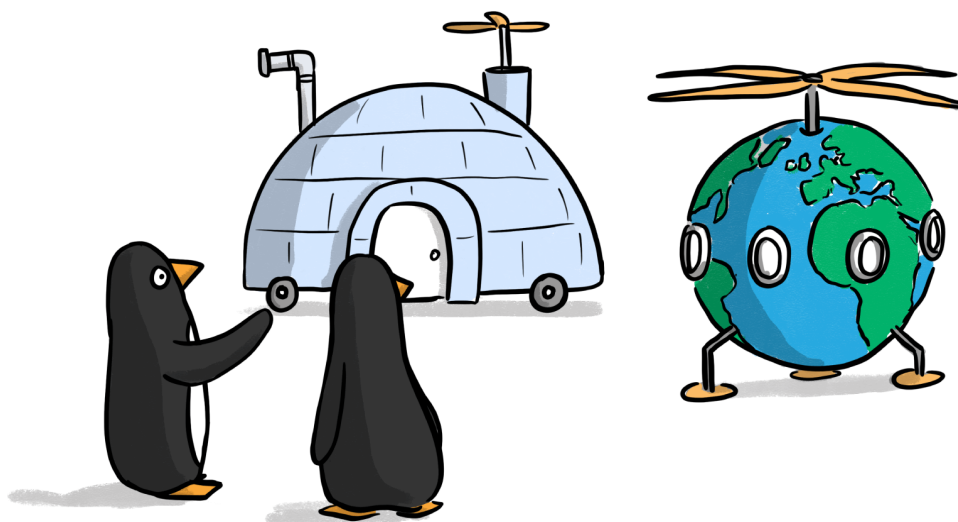
In this view, a conceptual framework is essentially designed to facilitate moving the thought processes of the researcher onto this reflective level where all the different aspects of a study are brought together. An effective conceptual framework can offer a ‘birds eye’ view on the project as a whole, how it hangs together, and what the implications of the results might be. This can be particularly important for things like writing your abstract or taking part in a viva exam where it is important to be able to concisely describe and reflect on your work and how it relates to other scholarship.

The reverse side of this coin concerns the selection of a conceptual framework. For a conceptual framework to adequately support the expression of ‘doctorateness’ in a research project it must be able to support a level of reflection which is relatively sophisticated. It needs to cover a range of considerations at the right kind of depth but not be so broad that it lacks focus.

New and Existing Conceptual Frameworks

Educational research is often multidisciplinary and has to take into account different contexts and considerations. This may be one reason why conceptual frameworks used in this kind of research are often expansive and multiperspectival. (Here we start to introduce some additional perspectives from GO-GN members.)

If you decide to create your own framework then it's necessary to explicate why existing frameworks were not sufficient for answering your research problem. This may be easier to justify when modifying an existing framework because it just doesn't take account of some particular element or consideration. This process can be approached both empirically and/or through a critique of ideas and theoretical commitments. The most important thing is that the conceptual framework(s) you choose to work with need to make sense for the way you are running your project and answering your research question.



"Conceptual frameworks are a very useful tool that you can use to guide your thinking and find important or any missing aspects that are going to play an important role in your research. I recommend that doctoral students in their early phase of Ph.D/Ed.D try to find a useful framework on their research topic to guide their thinking. If there's nothing they can find, they can also create and propose one, based on literature review." - Tomohiro Nagashima

In practice, most new frameworks are created by combining or modifying existing frameworks to make them more relevant to the current research project. This can be an important part of developing new theoretical perspectives and angles on research.

“In my research I used several conceptual frameworks. In the first study, I used the framework of business models as a tool to analyze organizations and the interrelationship between different types of organizations (Bazars and Cathedrals, as we called them). In the second and third studies I relied on the MOOCKnowledge framework that was presented by Kalz et al. (2015). The theoretical basis tries to cover the impact of socio-economic background variables, ICT competences, prior experiences and lifelong learning profile, variance in intentions, environmental influences, outcome expectations, learning experience, and economic return on taking and completing Massive Open Online Courses (MOOCs). I extended the framework and implemented it into subjective learning outcomes such as learner satisfaction and intention fulfilment. The conceptual basis of intention fulfilment is rooted in the theory of intention-behavior gap.” - Eyal Rabin

One question that it is important to ask yourself before you start creating a new framework from scratch is whether or not you really need to. There is an expectation that doctoral level research needs to be original, and this is a reasonable expectation. However, this does not mean that there is an obligation to reinvent the tools of research. (It’s also fine to not invent any new concepts and just apply existing concepts in new ways.)

“The UTAUT Framework and the Design Thinking approach were geared towards providing data that addressed and explored my research question. I also used Warschauer’s (2002) framework for Effective Use of ICTs to guide the coding categories of the design thinking workshops and focus group questions to assess the overall effectiveness of the OER professional development programme. The case study methodology used in this study promoted triangulation validity (of data source, data type, method and theory), which is obtained when the researcher can draw evidence from multiple datasets. Doing so is advantageous because multiple datasets provide better results than single datasets do. While the UTAUT framework only provided a small quantitative glimpse of the data collected and analyzed and there is no statistical significance for a small nonrandom population of instructors, the design thinking approach is particularly effective in the K-12 sector as it enables researchers to assess teachers’ volition and responsiveness to changing their pedagogical practices by means of OE/OER uptake. Rather than impose OE/OER adoption, it provides participants with an opportunity to learn something new, taking into consideration their needs, knowledge and local

realities, thereby enabling them to identify the existing challenges and how these could be overcome if they decided to adopt Open Educational Practices and/or OER. All things considered, qualitative approaches to analyzing data from conceptual frameworks hold the potential to provide rich, thick descriptions and a higher validity to findings even though no qualitative studies are generalizable in the statistical sense. Nevertheless, their findings may be transferable. Finally, conceptual frameworks that have already been used in previous OE/OER studies may be more applicable to research in open education as they might have already been either validated or could benefit from replication to be validated.” - Viviane Vladimirschi

Another thing to consider is that your conceptual framework is likely to evolve throughout the research process; it need not be crystallised at the stage you are writing a literature review.

“My supervisor gave me this advice after I had been struggling with my conceptual frameworks chapter for some time: The focus of your conceptual frameworks chapter should be on describing the frameworks as they are used in the literature. Don't try to reinvent them before you have used them in your data analysis. Also, if you are using two conceptual frameworks that are not usually used together in the literature, describe them separately for now. You might arrive at a new version of a framework (or a combined version of two frameworks) after you have done your data analysis.” - Gabi Witthaus

Many research questions can be investigated quite successfully within existing theories and frameworks, and it can be easier to justify using something already validated through use. Moreover, the results of a study may be more directly comparable with other studies using the same framework. But the downside is that you may be continuing with the status-quo of thinking, and shutting off new approaches. Some research questions require bespoke and creative approaches. After all, new theorising is an important way for new knowledge to be advanced.

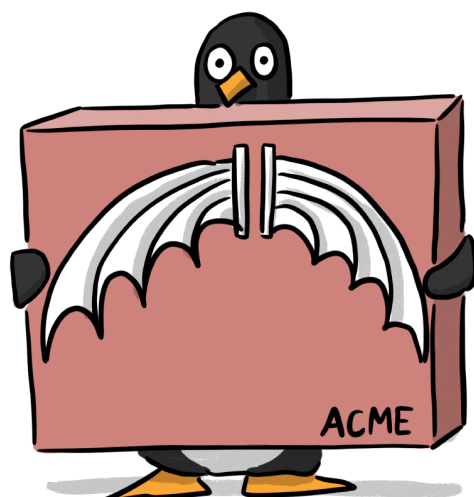
"Feminist writer, author and theorist Sara Ahmed (2017) had an experience in her Ph.D of being strongly guided to use existing theory from acknowledged theorists - most often men of a certain era - as she came to know the field. She talks about the politics of citation, how you become a theorist by citing other theorists. But from her feminist perspective, theorising comes out of lived experiences (for example of why we do not fit in, of having to insert ourselves in places we should belong but are not, in fact, equally welcome.) If we don't keep generating new theory, then theory never advances. If we don't start generating new theory, it never gets to be tested across multiple contexts and used by others, which is core to what validates it as 'theory'. So I quite like this "take" on theory too - that it is in fact approachable and researchers (maybe particularly critical researchers who tend to be less happy with status quo) should roll up their sleeves and not be afraid to theorise new explanations for phenomena, especially when the existing ones do not ring true or make sense, from one's ontological point of view." - Sarah Lambert

The Role of Openness

At this point the aspiring open education researcher might be thinking: "OK, I think I am starting to get a feel for some of the options for using conceptual frameworks, but where does openness fit into this? Is openness a conceptual framework?"

This is not necessarily an easy question to answer as openness by its nature is realised and contextualised in different ways. Furthermore, a research question might have to focus only on specific aspects of openness to make a project manageable and inform a sensible data collection strategy.

"Warschauer's (2002) seminal work "Technology for Social Inclusion" appeared to be a good fit with the socio-economic and cultural reality of Brazilian K-12 public schools, and suggests that providing technology for free does nothing to improve the lot of disadvantaged learners. On the contrary, it serves to further expand the digital divide between those people that have had the economic and educational opportunity to become literate with ICT skills and those who do not. This same idea could be applied to those people who have had the opportunity to learn how to read and write. In this sense, Warschauer's (2002) work is very much aligned with Freire's (1970) work with illiterate people aimed at promoting social inclusion. Thus, Warschauer (2002) posits that to have meaningful access and engagement with ICTs, teachers need to have literacy and literacy, in this sense, brings to the table different social, economic and cultural connotations and implications. The framework provides a sound foundation for assessing how each of these physical, digital, human and social resources are impacting the use of ICTs in an institution through their presence and accessibility or lack thereof, enabling researchers to design interventions that will promote effective and meaningful use of ICTs, ultimately promoting and driving OE/OER use as well." - Viviane Vladimirschi



"I used Warschauer's framework as the basis for building a new conceptual framework that can be used to guide both the research and development online courses that are socially inclusive. I added one more dimension to Warschauer's framework and developed a new set of definitions for each dimension to make it applicable to online courses, not just technologies in a more general (non educative) sense. And while I tested and developed the framework with reference to a number of open online courses, in my discussion and implication section I argued the framework should also work for regular university online courses where a diverse student population is the approaching normal state. This illustrates again the blurred boundaries between conceptual frameworks used with open education and with applicability to more general online education - even in the one paper!" - Sarah Lambert

Some people focus on pedagogical aspects and use an approach that reflects this, such as the 5Rs (Wiley, 2014) or COUP framework (Bliss, Robinson, Hilton & Wiley, 2013). Others might be more interested in social justice, and so generate or use a complementary framework (Lambert, 2018). It's also possible to investigate some element of open education without much reference to openness as a concept (e.g. studying the MOOC experience where the only open element is enrollment).

"I suppose that it depends on the analysis level that we would like to analyze. The business model framework is more appropriate for analyzing open education from the organizational perspective. The MOOCKnowledge framework is applicable when analyzing OE(R) from the viewpoint of the participants and the perspective of learning analytics is more useful for understanding and optimizing learning and the environments in which it occurs." - Eyal Rabin

This means that there isn't really an overarching conceptual framework for openness, but there are many conceptual frameworks which either draw on openness for inspiration; or focus on particular aspects which are relevant to a given context. This lack of an orthodoxy may be intimidating, but it also reflects the flexibility and inspiration many researchers draw from the idea of openness.

"The intra-disciplinary, intra-methodological applications of diffusion of innovations theory lends it to the study of open education." - Kathy Essmiller

"In my opinion, the conceptual frameworks that suit open education are the ones that allow an interdisciplinary focus, as OERs do not fall only into the field of education or only into material design. Perhaps, they should also enable a diverse epistemological stance, so that they could be applied and tested using different (mixed) method research designs." - Irina Rets

"Because open education is such a broad field, I think the conceptual framework you use just needs to be the best fit for the questions you are asking. To be a bit reductionist and binary, if the research you are doing is concerned with the lived experiences of OEP, the framework you use might be different than if it were concerned with a purely content- and data-based investigation (qualitative or quantitative). The context of the study and theoretical influences in the work you're doing need to be aligned with the conceptual framework, much like methodology. I think that open education is anchored amongst certain ways of thinking about education; that it should be democratic, agential, free, accessible, adaptable, re-usable and transformative. Given these features of the field, the theory, methods and concepts you use would need to relate to these features in some ways. Using a capitalist and profit-driven approach, or free-market-open economic concepts might be interesting but possibly antithetical to educational openness in its origins in distance education and sharing of open-source software. What does your work contribute to the field?" - Johanna Funk

In summary: openness can be a way to bring together different areas of interest thematically. It can be a way to contextualise a research question, or it can be a focus for the research question itself. There is no one overarching sense in which openness is a conceptual framework, but it can definitely inspire or guide the choice of a conceptual framework within a piece of research.

In the next section we'll look at some ways in which GO-GN members have applied different conceptual frameworks in their open education research projects.

Conceptual Frameworks Overview

Here we present a short description of some conceptual frameworks and how they have been used in doctoral research projects by members of GO-GN. We don't claim that this is an exhaustive list of conceptual frameworks! Rather, these are some of those being used by contemporary researchers in our network to understand aspects of open education.

These frameworks are presented here with brief descriptions; reflections by researchers who have used these approaches in their own work; and some key references (some of which are general and some specific to the project being reflected on). We also added brief descriptions of some other frameworks which are useful to know about.

Activity Theory

"Cultural Historical Activity Theory (CHAT), as conceptualised by Engeström (1987) studies different forms of human practices in change, with both the individual and the social levels interlinked. CHAT is a theory of object-driven activities. The object of activity is the reason why groups of individuals choose to participate in an activity; thus, the term activity addresses the relationship between the actors and their motives and concerns, and gives the activities a special direction (Kaptelinin, 2005). Cultural differences and social discontinuity give rise to inner tensions and contradictions, which are a potential for change (Engeström, 1987) and for learning at the boundary (Akkerman & Bakker, 2011). I find this conceptual framework useful in a critical analysis of open education, when trying to understand tensions and dynamics in human activities. It instructs us to treat people as sentient moral beings and emphasizes the behaviour or activities of the same people and it needs to include the motives, goals and conditions of activities in the analysis since activities are oriented towards motives. It should be emphasized that this conceptual framework has human activity as a unit of analysis, including a complex system of individuals, artefacts, traditions and interests, in contrast to proceeding from the individual (Vygotsky, 1978) or the community (Lave & Wenger, 1991)." - Anne Algers

"I've used Cultural-Historical Activity Theory (CHAT) of Engestrom (1987). This model allows me to focus on the perspective of brokers and situate their role within a complex context of cultivating an inter-institutional community around OER. The strength of this model is that it allows you as a researcher to explore activity system(s) in detail in which the cultural and historical conventions are taken into account. Additionally, it

provides a framework to emphasize on the experiences and role of (group of) individuals within an activity system. For example, it allowed me to analyze the same activity system from both the perspective of brokers as of teachers. It provides a framework to illuminate the elements of an activity system and to investigate if there are any (perceived) contradictions within the activity system, with other more advanced systems, or with neighbouring activity systems. The analysis of the activity system and the contradictions allows you as a researcher to gain a better understanding of the complex reality of open education projects and practices. If I have to state a downside is that it takes some time to really grasp CHAT.” - Marjon Baas

Key References: Akkerman & Bruining (2016); Engeström (1987; 2001); Engeström & Sannino (2010); Kaptelinin (2005)



'Big' and 'Little' OER

OER are often framed as those resources produced by institutions (such as the Open University's OpenLearn) or projects such as BCCampus open textbooks. However, individual educators who are engaged in open educational practice produce a range of artefacts also. Weller (2010) distinguished these as Big and Little OER, with distinct properties for each.

“Weller (2010) divided OER into two categories that are helpful for my work, big OER and little OER. He described big OER as “institutionally generated ones.” He further explained that “these are usually of high quality, contain explicit teaching aims, are presented in a uniform style and form part of a time-limited, focused project with portal and associated research and data” (n.p.). Funding of these big OER has historically been heavily funded by foundations, in particular the Hewlett Foundation. Big OER have typically focused on the large-scale transmission of open content as exemplified by partnerships between academic institutions with UNESCO and governments around the world to

apply open licenses to publicly funded educational content (Cronin, 2017).

"In contrast, little OER might consist, for example, of a single image instead of an entire course. They also tend to be created and shared by individuals at low cost. Weller (2010) noted that the "low production quality of little OERs has the effect of encouraging further participation... they are an invitation to participate precisely because of their low quality" (n. p.). In so doing, he highlighted an important relationship: the relationship between scale and pedagogy.

"Some years earlier, Schramm (1977) categorized educational technologies as "big media" and "little media" as a means to distinguish high-cost, large audience from low-cost, small-audience media. Building on these ideas, Anderson and Garrison (1999) differentiated what they called "big distance education" and "little distance education." I blended Weller's (2010) Big and Little OER, with Anderson and Garrison's (1999) big and little distance education and Franklin's (1999) prescriptive and holistic technologies to develop a conceptual framework for big and little open education.

"A simple conceptual framework of big and little open education served as a helpful research tool, a simple structure for organizing scale-related ideas and guiding me in the development of my research methods. Scale within contemporary open education is, however, not a simple matter, so I used big-little open education as a simple starting point, a binary to trouble and complicate throughout the remainder of my research study." - Tanya Elias

Key References: Cronin (2017); Garrison & Anderson (1999); Schramm (1977); Weller (2010)

Boundaries

One challenge of interdisciplinary research is bringing together different areas of academic specialisation. Continuities between different knowledge communities have been explored through the idea of 'boundaries'. "A boundary can be seen as a sociocultural difference leading to discontinuity in action or interaction. Boundaries simultaneously suggest a sameness and continuity in the sense that within discontinuity two or more sites are relevant to one another in a particular way." (Akkerman & Bruining, 2011:133) This concept has been used to describe the relationship between transitional states, pedagogical approaches and learning processes.

This idea of boundaries informs two distinct but related concepts:

- *Boundary Objects* are artifacts (material, digital, technological, informatic, procedural, etc.) that are shared by several knowledge communities and so represent a point of convergence between them (even if they are interpreted differently). Such objects can be a focus for understanding different perspectives.
- *Boundary Crossing* represents the attempt to overcome boundaries between practice communities and establish some shared perspective and co-ordination of activity.

One central idea here is that boundaries represent learning opportunities for the communities defined by them. Another is that boundaries can act as a dialogic focus for different groups. In educational research these concepts are often used to explore inclusivity and exclusivity in knowledge communities and ways that learning and pedagogy facilitates the transitions across boundaries.

“The aim of my research was to explore ways of organising and supporting open education in the controversial subject area of industrial farming, use of animals for food and sustainable food production. The aim was both analytical - to understand boundary activities in these domains - and design oriented - to develop models and methods for working with and enhancing open educational practices. The theoretical approach was cultural historical activity theory (CHAT), and more specifically, theories on boundary activities and learning at the boundary between activity systems, or between groups of individuals with different views in society. I have used the concepts of boundary activities, boundary objects and learning at the boundary for my thesis. These concepts are useful when focusing on controversial issues and in particular when the equality of vulnerable sentient beings is at stake. This could be exemplified with the recognition and representation of the subaltern (Spivak, 2003), such as children, ethnic minority groups, people with functional impairment, and in this case of industrial farmed animals. In these situations, different perspectives have to be spelled out and the subaltern should be heard, listened to and empowered within these negotiations.” - Anne Algers

“In one study I examined the role of brokers to cultivate an inter-institutional community around OER. Brokers is a term often used to describe coordinators that have the necessary structural position to act as a bridge between otherwise separate groups (Akkerman & Bruining, 2011). In this study brokers had to role to expand the user group of an inter-institutional community so that sustainable collaboration would be realized. Their role was to cross boundaries to facilitate access to resources, facilitate knowledge

transfer and coordinate actions. By applying cultural-historical activity theory (CHAT), we were able to gain more specific insights into their boundary spanning behaviour as well as to gain insights into the perceived contradictions they experienced in their role as broker. The concepts of boundary spanning, boundary crossing and boundary objects can be really useful to explore inter-institutional collaborations or individuals that have to cross boundaries between sites.” - Marjon Baas

Key references: Akkerman & Bruining (2011; 2016); Kaptelinin (2005); Star & Griesemer (1989)

Capability

“The capability approach asks to what extent individuals are able to do and be the things that they value doing and being in life. In a higher education context with a widening participation vision, the capability approach shifts the focus from simply asking whether disadvantaged groups have access to university, to asking whether individuals have the capabilities to convert such access into valuable outcomes for their lives. The main advantage of the capability approach is its essential focus on social justice. It also provides a language for talking about equity (in terms of capability sets, valued functionings, and conversion factors); another advantage is that the approach is relatively mature, having first been put forward by Sen in the late 70s and subsequently elaborated on and critiqued by several other scholars. one disadvantage is perhaps that these terms are unfamiliar to most people, at least with the specific meanings they carry within the capability approach. However, I think the conceptual clarity added by these terms, once defined, outweighs this minor disadvantage. While its heritage is cross-disciplinary, initially having been located within economics and philosophy, it is also accumulating a significant body of literature in higher education research - dominated by a group of scholars from the University of the Free State, South Africa led by Melanie Walker, but also including works from Australia, the UK and elsewhere. For an excellent overview of the Capability Approach, Robeyns (2017) has produced a highly readable, comprehensive overview of the framework under a CC-BY licence. As part of my open thesis, I have written a series of blog posts on the capability approach in higher education and collated these into a single document as an OER (Witthaus, 2021).” - Gabi Witthaus

Key References: Nussbaum (2011); Robeyns (2017); Sen (1999), Walker (2008); Walker & Wilson-Strydom (2017)

Cathedral/Bazaar

The distinction between 'Cathedral' and 'Bazaar' comes from an essay on the difference between different kinds of software design (Raymond, 1999). In the Cathedral approach software is developed by an exclusive group and released only when ready; while in the Bazaar model development takes place transparently and openly giving many people opportunities to test and improve it. The essay was influenced by the development of internet protocols and working practices as well as software development. In an open education context the metaphor is sometimes transplanted onto alternative models for producing or sharing educational resources. This can cover a wide range of pedagogical, organisational or business considerations.

"The aim of my dissertation was to answer the central research question: How to evaluate learner-centered outcomes and their antecedents in open online education? To address this question, two learner-centered outcomes, namely, learner satisfaction and learner intention-fulfillments were identified as alternative course outcome measures. Five studies were conducted in order to define the theoretical problem and empirically revealed some of the answers. The first study presents a comparative analysis between the business models of traditional HEI and open education. The analysis investigates the impact of digital innovation on the business models of higher education institutions using Raymond's (1999) well-known "Cathedral and Bazaar" metaphor on software engineering methods. The changes promoted by the "bazaar" facilitate the adoption of MOOCs by the mainstream "cathedral", but require, at the same time, the development of new learner-centered outcome measures, which are appropriate for emerging educational ecosystems." - Eyal Rabin

Key References: Farrow (2016); Rabin, Kalman & Kalz (2019a); Raymond (1999)

Community

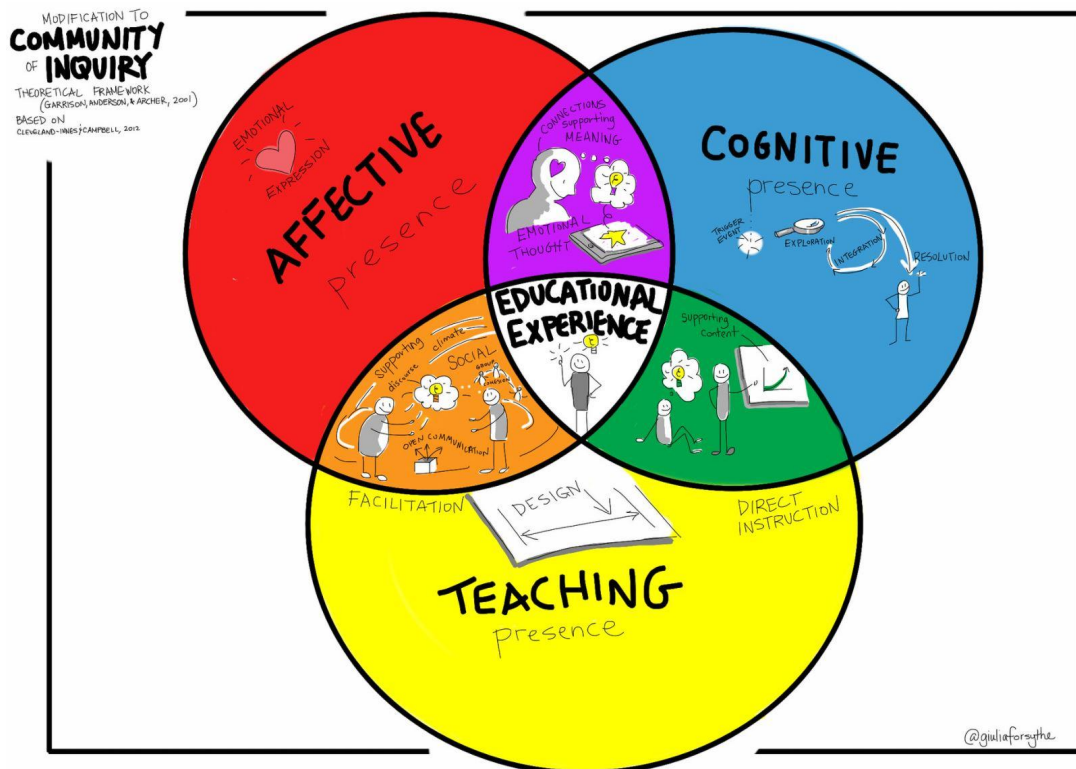
As learning increasingly happens in online communities researchers have looked for ways to theorise the role of community and group dynamics in learning. A 'community of inquiry' is a conceptual model proposed for understanding how educational experiences arise from the interplay of individual and group dynamics. This process is understood through the interaction of three core elements: cognitive presence, social presence, and teaching presence. By incorporating a range of evidence and indicators relating to these categories the researcher can build up a picture of how a particular community orients itself towards the process of inquiry.

Elements	Categories	Indicators (examples)
Cognitive Presence	Triggering Event Exploration Integration Resolution	Sense of puzzlement Information exchange Connecting ideas Apply new ideas
Social Presence	Affective Expression Open Communication Group Cohesion	Emoticons Risk-free expression Encourage collaboration
Teaching Presence	Design & Organisation Facilitating Discourse Direct Instruction	Setting curriculum & methods Sharing personal meaning Focusing discussion

Community of Inquiry Coding Template (Garrison, Anderson and Archer, 2000)

The interest in presence in this approach has been applied to examples of text-based and computer mediated communication to understand how distributed communities can effectively operate as communities of inquiry. This has been applied to many instances of online and blended learning.

These categories are flexible enough to have been applied in many different contexts, and have also been adapted to suit new purposes, as the following graphic illustrates.



Modified Community of Inquiry based on Garrison, Anderson & Archer (2001)
(Giulia Forsythe, Public Domain)

Another influential conceptual approach is 'communities of practice'. Where communities of inquiry are typically applied in circumstances like higher education where there is an explicit knowledge creation or knowledge transmission aspect, communities of practice are composed of people who share an interest, passion or concern for a particular activity. Communities of practice may be co-located (e.g. in a workplace) but can also be distanced. They are composed of three elements: a domain or network; members of the community who belong to it; and the practices they share.

Key References: Garrison, Anderson & Archer (2000); Garrison, Anderson & Archer (2001); Rovai (2002); Wenger, Trayner & de Laat (2011) Wenger, McDermott & Snyder (2002)

Connectivism

Connectivism is a learning theory that was developed to accommodate the manner in which learning occurred in online networked spaces. Connectivism was influential in the early MOOC development. With the advent of greater connectivity, user generated content and social media, a number of educators began to explore the possibilities of education in a more networked, connected model that was more “internet native” than existing learning theories. The theory of connectivism was proposed by George Siemens and Stephen Downes in 2004-2005. Siemens (2005) defined connectivism as ‘the integration of principles explored by chaos, network, and complexity and self-organization theories. Learning is a process that occurs within nebulous environments of shifting core elements—not entirely under the control of the individual’.

Siemens (*ibid.*) stresses Connectivism is not a pedagogy, but rather it could be viewed as a set of principles:

- Learning and knowledge rests in the diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources
- Learning may reside in non-human appliances
- Capacity to know more is more critical than what is currently known
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

Key to the connectivism approach is the belief that knowledge is distributed in a network, and learning is a chaotic process. There is no single, correct set of knowledge and education occurs with the transferral of this from educator to learner but rather knowledge and people are distributed, and it is the process of engagement with these that constitutes learning.

"I used (1) connectivism, (2) rhizomatic learning, and (3) network theory. My advantage was connecting my findings to the related literature through the lens of these theories/conceptual frameworks. Besides, these lenses helped me to build upon my findings on a solid base. In my dissertation, I didn't see any disadvantage, but I sometimes feel that these theories may limit our ability to further ponder on our findings because we generally stick to principles, rules etc. identified by these lenses." - Aras Bozkurt

Key References: Siemens (2005; 2006); Kop (2011)

COUP Framework

The Open Education Group's COUP framework (Bliss, Robinson, Hilton & Wiley, 2013) supports research into the potential impact of open practices and OER. It focuses on four broad facets which "...comprise the salient aspects of education that we consider most likely to be impacted by the use of OER" (*ibid*). These are:

- Cost
- Outcomes
- Usage
- Perceptions

The COUP framework has been used in a variety of ways, from explicitly helping structure research into students and educator use of OER (see e.g. Project Kaleidoscope (Contact North/Contact Nord, 2018) and the Open Education Group's own Research Fellows) to categorising literature on the impact of OER (see e.g. Hendricks, 2016 and Clinton, 2018). Perhaps one of its great advantages is to co-ordinate and focus the data collection activities of so many researchers to build up a comprehensive account of the impact of OER adoption.

"The Open Education Group's COUP Framework has proven most helpful to my efforts." - Elizabeth Spica

Key references: Bliss *et al.* (2013); Clinton (2018); Hendricks (2016); Open Education Group (n.d.)

Design Thinking

“The Design Thinking Framework was used for delivering workshops (the intervention) during teachers’ education activity time during the ODP (OER Development Program). Although Design Thinking is not a framework per se, the Design Thinking for Educators toolbox contains a structured approach geared towards enabling collaborative activities in the classroom by fostering higher-order thinking and creative skills (Razzouk & Shute, 2012) to solve a specific problem. This approach is particularly useful for enabling “high-impact solutions to bubble up from below rather than being imposed from the top” (Brown & Wyatt, 2010, p. 32). The design thinking approach not only enables researchers to gain more insight into potential solutions for introducing new professional practices, but also affords teachers multiple opportunities to participate in the process of determining how innovation may be best implemented. Because the design thinking approach is human-centered, collaborative, experimental and inherently optimistic, several K-12 schools have been using it to tackle challenges related to the design and development of the curriculum, and to effect changes in the spaces of learning environments, in processes and tools and in schools’ goals and policies (Design Thinking for Educators, 2013). The distinguishing feature of design thinking as an approach for transforming difficult challenges into opportunities in a K-12 educational system is how it affords educators the ability to experiment with new ways of doing things and to learn by doing in the process (Design Thinking for Educators, 2013).

“Some advantages to using this approach are its structured approach and flexible process; its ability to raise awareness actively and collaboratively; its ability to enable teachers to identify their own assumptions, generate potential solutions, reflect on what was learned and refine their ideas in light of the challenges that were brought up. However, to produce good results, this approach needs to be embraced by the entire organization, which was not the case in this study, as the school administrators did not participate in the workshops.” - Viviane Vladimirschi

Key References: Brown & Wyatt (2010); Design Thinking for Educators (2013); Razzouk & Shute (2012)

Diffusion of Innovations

"I designed and implemented my dissertation research project using diffusion of innovations theory (Rogers, 2003). Diffusion of innovations theory facilitates the systematic study of the adoption and diffusion of innovations and provides a lens through which researchers can make meaning of the innovation diffusion process through which ideas are socially communicated over time (Rogers, 2003). The theory defines an innovation as an idea or practice perceived as new. Users may choose to adopt an innovation after having knowledge of the innovation and being persuaded of its value. Diffusion is the "social change" (Rogers, 2003:6) which takes place as those within the social system communicate information about the innovation. The theory has its roots (!) in a study of the diffusion of hybrid seed corn use by Iowa farmers (Rogers, 2003; Ryan & Gross, 1943). It has been used to frame research in the fields of anthropology, sociology, education, public health, communication, marketing and management, and geography, among others.

"Diffusion of innovations theory can be used to make meaning of innovation development and innovation decision processes. The innovation development process is a nonlinear process through which individuals or organizations recognize and determine to address a problem or need. The innovation decision process details five stages through which individuals or organizations pass through when considering adoption of an innovation. The five stages of the innovation-decision process are knowledge, persuasion, decision, implementation, and confirmation. Individuals move through the innovation decision process in order to evaluate and eliminate uncertainty associated with adoption of the innovation.

"Individuals' perception of the attributes of the innovation play a role in the rate and speed of the innovation's adoption and diffusion. Rogers (2003) presents five attributes as impactful in the diffusion process. Those five attributes are relative advantage, compatibility, complexity, trialability and observability.

"One of the advantages of using diffusion of innovations theory to design and implement research projects is that it has been used over time across a number of disciplines. For instance, my January 2020 search of the ProQuest database using key terms specific to libraries and diffusion of innovations theory returned 38 results, suggesting the theory is in use for research related to library science. The theory is applicable to both the individual and organizational innovation-decision process, and is appropriate for projects asking questions such as why and how as well as those

seeking understanding of the consequences of the adoption and diffusion of innovations.

“Examples of the use of diffusion of innovations theory can be found in quantitative, qualitative, and mixed methods research designs. This could be seen as disadvantageous for scholars seeking a framework aligned with a singular methodological tradition.” - Kathy Essmiller

Key References: Baker & Ippoliti (2019); Hodgkinson-Williams & Paskevicius (2012); Jhangiani (2017); Rogers (2003)



Equity

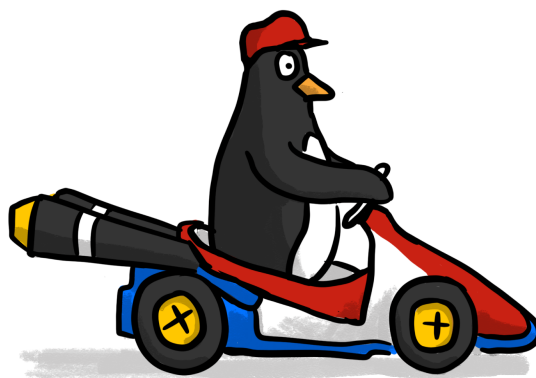
“My nonexperimental, multi-part dissertation explored issues of course material affordability for students at Tennessee community colleges. Guided by Bensimon’s conceptual framework on equity in higher education (Bensimon, 2005, 2012), data in each study were disaggregated to examine potential inequities regarding three populations of concern for Tennessee higher education (non-white, low-income, and learners over age 25). Data were drawn from two sources: a student survey (n = 1,912) and three years of anonymized course outcome data. While this dissertation focused on textbook affordability in general, an equity framework is equally applicable for OER.

Bensimon's focus on equity-mindedness proved useful in framing my three studies for the following reasons:

- 1. Bensimon underscores that inequities are an institutional problem, a failure of practice, whether that failure lies with policies, practices, or even the structural or cultural arrangement of an institution.*
- 2. "Equity-mindedness" focuses on actions under OUR control, rather than trying to figure out how to fix problems or shortcomings we (consciously or not) believe to be inherent to the student; and finally,*
- 3. Bensimon focus on the use of disaggregated data directly guided my method (hierarchical linear mixed modeling approach) and analysis (disaggregated by populations of concern). As Bensimon relates, by first gathering and analyzing data, we can help others resist the natural urge to feel a problem is already understood.*

Insight from these findings has proven helpful for both educators and policymakers to catalyze and frame conversations around the role of institutional policies and practices in creating, perpetuating, and resolving issues related to course material costs." - Elizabeth Spica

Key References: Bensimon (2005); Bensimon (2012); Bensimon, Dowd & Witham (2016)



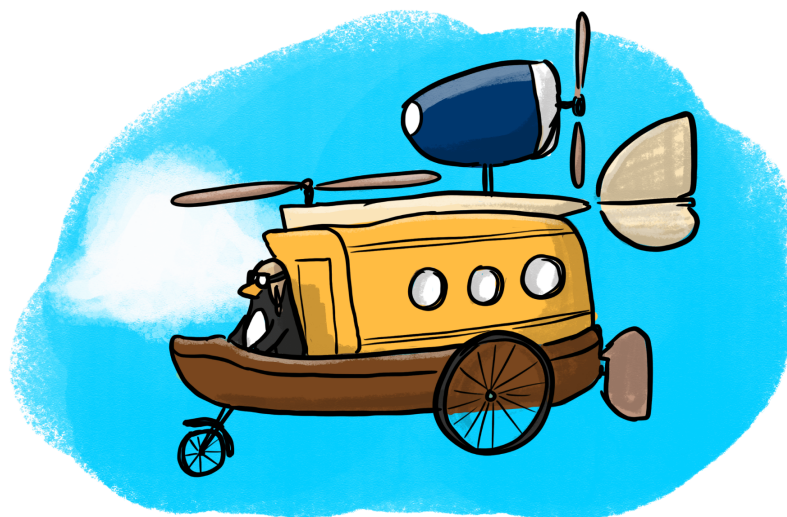
Learning Analytics

Learning analytics may be considered more of a methodology than a conceptual framework. It is concerned with the analysis of data generated by learners to reveal patterns of behaviour. However, like citation analysis it can also be considered an approach to a conceptual framework in that the researcher is less concerned with accommodating the results within an existing framework, and more interested in the emergent properties of data analysis.

"Clow (2012) proposes a learning analytics cycle, which has learners producing data, which undergoes analysis (for example producing metrics in dashboards), which in turn leads to some form of intervention. For analytics to be effective, intervention is required that has some effect on the behaviour of learners.

"Overall, I used Learning analytics as a conceptual framework defined as "the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs" (Siemens et al., 2011)." - Eyal Rabin

Key References: Rabin, Kalman & Kalz (2019b); Siemens & Baker (2011)



Linguistic Accessibility

“Most open courses, such as OERs, are created in English, while the OER audience consists of many non-native English speakers, who report experiencing a language barrier when learning from the OERs (e.g., Cobo, 2013; Rets, Coughlan, Stickler & Astruc, 2020a). As a number of studies showed that one size does not fit all, particularly in online education, which gives immense opportunities for a personalised learning (e.g., Rets, Rienties & Lewis, 2020b; Rets & Rogaten, 2021), I saw a need to explore OER accessibility, and more specifically - the accessibility of these resources in English to non-native English speakers. Furthermore, OER research lacks studies that use observational data, or studies that conceptualise and evaluate solutions on how to improve the accessibility of OERs, which can be generalised to an international learning context.

“The framework that was generated in my thesis to investigate this problem was linguistic accessibility. I used it for the analysis of the language level of OERs, and the evaluation of text simplification (reducing the language level of the learning material to make it easier) as a potential solution to the language barrier, discussed above. This framework enabled me to address the following major gaps in OER research: the level of text complexity of OER course materials and its variability across educational levels and subjects; approaches that experts, such as English teachers, take to simplify OERs; and the effectiveness of simplification as a solution to make OERs more accessible to non-native English speakers. These gaps were investigated through a mixed methods research design in four empirical studies using multiple data sources: reading materials from 200 OER courses, 24 English teachers, and 46 non-native English speakers.

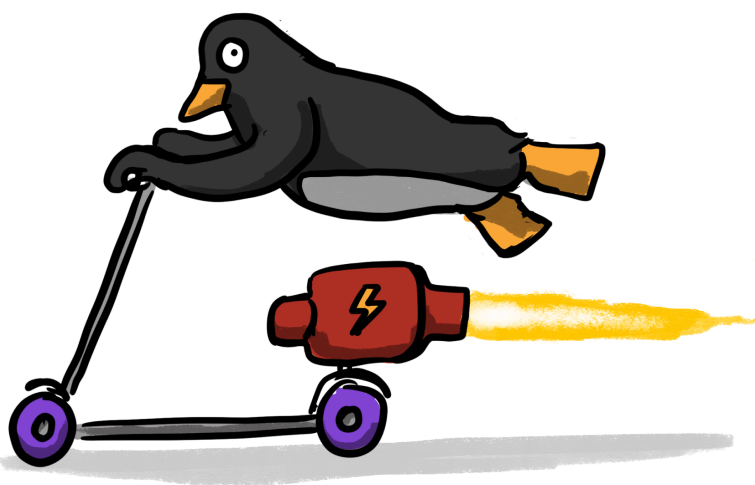
“It was clear from the beginning that the problem is complex and needs to be addressed from multiple perspectives. The use of any learning material and not just OERs involves many stakeholders. The way I operationalised linguistic accessibility was by approaching it from three perspectives: (1) text complexity (material-centric view, how complex is a given learning material?); (2) task difficulty (teacher-focused view, what pedagogical techniques and approaches are used to facilitate learners’ successful understanding of materials?); and (3) text difficulty (learner-focused view, how well a learner understands a given material?).

“After the four-year journey of working on linguistic accessibility, I see several advantages of this conceptual framework:

- *It enables one to obtain a more in-depth and well-rounded understanding of accessibility of OERs in English, how it can be achieved, and how it can help those who struggle with the language barrier when using OERs.*
- *The three perspectives it is based on are closely linked with one another. Analysis of text complexity can help estimate the difficulty of the text and identify the need for the work on task difficulty to be carried out. The efficiency of the task difficulty work can further be evaluated through the analysis of text difficulty.*
- *It enables a shift from framing OER accessibility as a deficit, where any shortcomings are situated within the learner, to framing accessibility of OERs as part of a societal issue or university approach to accessible learning.*
- *This framework allows an interdisciplinary focus.*

“The disadvantage of this framework is that while it provides a big picture, the analysis would be more in-depth if I focused only on one of its perspectives (text complexity, task difficulty, text difficulty). I am sure there could be a separate thesis on each of those.” - Irina Rets

Key References: Amendum, Conradi & Hiebert (2018); Cobo (2013); Jatowt & Tanaka (2012); Rets & Rogaten (2021); Rets *et al.* (2020a, 2020b)



MOOC Accessibility

“MOOCs can provide learners with the flexibility to learn, opportunities for social learning, and the chance to gain new skills and knowledge. While MOOCs have the potential to also bring these benefits to learners with accessibility needs, there is little understanding of how accessibility is embedded in the design and implementation of MOOCs. The aim of my research has been to understand the accessibility barriers in MOOCs and to develop processes to identify and address those barriers. Learners with accessibility needs face difficulties in interacting with MOOCs, and certain learning designs of MOOCs may affect their engagement, causing them to miss out on opportunities offered by MOOCs. Technologies and the learning design approaches for MOOCs need to be designed accessible, so that learners can use MOOCs in a range of contexts, including via assistive technologies.

“An accessibility audit framework was developed to understand how to improve the accessibility in MOOCs from an expert evaluation conceptual perspective, comprising four main evaluation components used to build four different checklists in a common heuristic evaluation framework (structured in principles, guidelines and checklists):

- **Technical accessibility evaluation.** *Checking of conformance to guidelines or standards through Web Content Accessibility Guidelines (WCAG) and the text-based files. The use of WCAG is a standardised and commonly used instrument for accessibility evaluation in MOOCs.*
- **User experience (UX) evaluation.** *The evaluation of usability and user experience characteristics of the user interface design and pedagogical design. UX evaluation takes the approach of usability inspections following cognitive walkthroughs that include two separate activities: the use of personas and scenarios. A set of engaging personas was developed. Engaging personas take a realistic description of people to draw evaluators into the lives of the personas, and so avoid stereotypical stories that focus only on behaviours rather than considering the whole person.*
- **Quality evaluation.** *Evaluation of MOOCs properties, the quality of the design, platform and support for learners. Quality evaluation was adapted from the OpenupEd quality label.*

- **Learning design evaluation.** *Evaluation of the learning design characteristics within MOOCs using Universal Design for Learning (UDL). Universal design considers how to meet the needs of all learners through design.*

“Taken together, these four components acted as a conceptual framework for my research but one anchored in gathering and triangulating practically useful data.” - Francisco Iniesto

Key References: Coughlan *et al.* (2016); Iniesto (2020); Kear *et al.* (2016); Meyer *et al.* (2014); Vyt & Mellar (2016)

MOOC Learner-Centred Outcomes

“My second study introduced two learner-centered outcomes for non-formal lifelong learning frameworks such as MOOCs, namely: learner satisfaction and learner intention-fulfillment. The study empirically defines them and reveals their predictors in a MOOC. The effects of socio-demographic characteristics and psycho-pedagogical characteristics on the barriers to satisfaction among MOOC participants are discussed in the third study. Identifying these barriers to satisfaction and predicting them provides additional insight into the nature of learner satisfaction as a learning outcome.

*“The fourth and the fifth studies, extend previous studies that have shown that clustering participants based on their learning trajectories is more informative and has a higher potential for pedagogical improvement, compared to clustering participants based on static-counting of behavioral data (Kizilcec *et al.*, 2013).*

“The studies presented in this dissertation have, individually and all together, turned a spotlight on the importance of looking at learner-centered outcomes and suggest a novel perspective to analyze learner-centered outcomes and success in open distance education forms, such as MOOCs.” - Eyal Rabin

Key references: Kizilcec *et al.* (2013); Rabin, Kalman & Kalz (2019b).

MOOC Knowledge Framework

Kalz *et al.* (2015) define the MOOC Knowledge framework as a combination of a reasoned action approach and self-determination theory. These frameworks offer a basis for the prediction of human social behavior and consist of background factors (e.g socioeconomic status) that affect different variables and directly influence the behavioural intention to take and complete a MOOC. The framework defines four different variables: digital variables, proximal variables, intention-behaviour gap and outcomes variables.

"I relied on the MOOC Knowledge framework that was presented by Kalz et al. (2015). The theoretical basis tries to cover the impact of socio-economic background variables, ICT competences, prior experiences and lifelong learning profile, variance in intentions, environmental influences, outcome expectations, learning experience, and economic return on taking and completing Massive Open Online Courses (MOOCs). I extended the framework and implemented it into subjective learning outcomes such as learner satisfaction and intention fulfilment. The conceptual basis of intention fulfilment is rooted in the theory of intention-behavior gap." - Eyal Rabin

Key References: Kalz *et al.* (2015); Rabin, Kalman & Kalz (2019b).

Network Theory

Network Theory seeks to understand the properties of networks and the parts of which they are comprised (such as nodes, connections, information flow, interconnectivity, performance, mechanisms of action, etc.). This has been applied in a range of fields, including the physical sciences, economics, ecology and sociology.

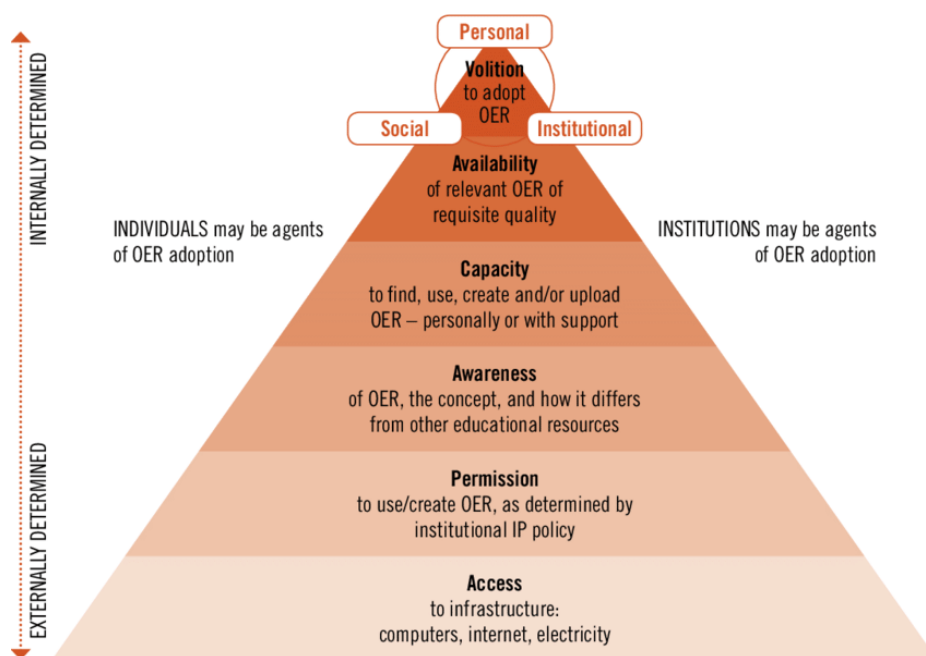
In an open education context, the most common form of applied Network Theory is in Social Network Analysis; this uses a range of data points - sometimes metrics from social media - to describe relevant social structures .

Key References: Borgatti & Halgin (2011); Borgatti, S. P., & Lopez-Kidwell (2011); Castells (2001); Jin, Girvan & Newman (2001)

OER Adoption

One particular form of impact that is of interest to many researchers is tracking the rate at which OER are taken up as part of the core texts used in educational institutions. In addition to tracking numbers, researchers are often interested in the underlying factors that drive OER adoption. Thus, OER adoption may be understood both quantitatively or qualitatively. There is often interest in trying to understand drivers at different levels or perspectives (policy, technology, teaching and learning, etc.)

“I made use of the OER Adoption Pyramid by Cox and Trotter (2017). This was a very useful framework, because it presents the essential OER adoption factors divided across six categories. These categories are layered based upon the level of control that an individual has over it. It provided a great analytical tool to explore which factors play a role in the current OER adoption. The strength of this model is that it is based on an extensive literature review. It’s worth noting that the Adoption Pyramid is not a universal model, as recognized and underlined by the authors. It provides a great framework to analyze which layers are accounted for, and what is still needed to foster OER adoption within your context. In the findings of my own study for example, we found that the perceived availability turned out to be more near the bottom of the Pyramid as opposed to the model of Cox and Trotter.” - Marjon Baas



OER Adoption Pyramid (Cox & Trotter, 2017)

Key References: Belikov (2016); Cox & Trotter (2017); Wenger, Trayner & de Laat (2011)

OER Impact

One common area of interest is describing and evaluating the impact of different forms of open education such as open textbooks or MOOCs. For understanding impact at scale the Open Education Research Hub used a hypothesis based approach which collected evidence for and against different kinds of impact (de los Arcos et al., 2014). The COUP Framework (Open Education Group, n.d.) has been used to compare outcomes across many higher education institutions by collecting data against several key metrics.

However, there is no single way to understand the complex patterns of impact associated with open education. This is even more the case with highly contextual pieces of research such as case studies.

“My doctoral work is guided by the following research question: According to open educators, what impacts might large- and small-scale elements have on learning conditions and practices within open education? It is guided by Clarke’s (2018) situational analysis methodology, which is informed by postmodernism (Deleuze and Guattari, 1985; Foucault, 1982). My work is qualitative, critical and tentative in its approach. (In a previous version of my dissertation, I had used Foucault’s four technologies: production, sign systems, power and self. I still think that this is a good conceptual framework from which to explore open education.)

“I sought out participants with an interest in engaging in deeper thinking with respect to the role of scale with the current “situation of open education,” using a three-stage approach to data-gathering and analysis.

In the first stage, I extended an open invitation to participate in an anonymous online qualitative survey and received responses from 20 open educators. I then used the results of the survey to develop an initial “messy map” specifying “all the major elements in the situation under study, broadly conceived” (Clarke, 2018:214).

“In the second phase, I invited a group of participants to asynchronously review, identify relationships and annotate the initial messy map, thereby generating a “relational map.” In the third phase, the six annotators participated in two focus groups to further explore the ideas generated in the mapping activity. Through this process, I did not “seek solutions” or “achieve consensus.” Instead, my participants continued to further complicate my research questions in ways that generated diverse ideas, questions and ways of thinking about the implications of scale within the field of open education.” - Tanya Elias

Key References: Clarke (2005); Clarke (2018); de los Arcos et al. (2014); Deleuze & Guattari (1985); Foucault 1982); Open Education Group (n.d.)

OER Reuse

Another focus on patterns of impact concentrates on how openly licensed resources are used/reused after their initial publication. These patterns can be complex, especially when resources are remixed, adapted or combined in new ways. This kind of plasticity in educational resources is one of the innovative strengths of OER, but by its nature it is often happening in ways that are hard to document.

“David Wiley's Reusability Paradox (and more recent Remix Hypothesis) is not called a "framework" but it does a great job guiding how we should conceptually approach OER use and remix. I have used this approach to identifying the importance of customization when integrating OER into pedagogical practices.” - Tomohiro Nagashima

Key References: Clements & Pawlowski (2012); Wiley (2015)

Online Collaborative Learning

Defined by Harasim (2012), online collaborative learning theory is a form of constructivist teaching that takes the form of instructor-led group learning online. In Online collaborative learning students are encouraged to collaboratively solve problems through discourse instead of memorising correct answers. The teacher plays a crucial role as a facilitator as well as a member of the knowledge community under study. Online collaborative learning includes three phases of knowledge construction through discourse in a group:

1. **Idea generating.** The brainstorming phase, where divergent thoughts are gathered
2. **Idea organizing.** The phase where ideas are compared, analyzed and categorized through discussion and argument
3. **Intellectual convergence.** The phase where intellectual synthesis and consensus occurs, including agreeing to disagree, usually through an assignment, essay, or other joint piece of work.

The end result is learning which manifests in applied knowledge through applications in the real world, although a learner is never truly finished generating, organising, and synthesising ideas, and continues those processes at progressively deeper levels. The teacher is critical to this knowledge construction, not only through facilitating the process and providing resources to the group, but also through ensuring that the core concepts and practices of the subject domain are fully integrated. The teacher is here understood to be a representative of the knowledge community or subject domain under study.

Key References: Harasim (2012); Rovai (2002); Wenger (1998)

Online Engagement Framework

“I am using the Online Engagement Framework by Redmond, Heffernan et al. (2018) to analyse the engagement patterns of refugees and asylum seekers in online higher education. This framework contains five distinct categories of engagement, making it easy to apply to the analysis of qualitative data. Because the framework is based on a review of literature on online student engagement in higher education, it reflects many of the current topics and debates in the literature, such as the impact on student experience of emotional and social factors. The main limitation of the framework is that it does not provide explicit guidance for investigating student agency, or for considering how structural arrangements and power relations might affect students’ engagement in their online learning. For this reason, I am also using Sen’s (1999) capability approach in my data analysis. The paper introducing the Online Engagement Framework (Redmond, Heffernan et al., 2018) is published in the open-access journal, OLJ, under a CC-BY licence. The paper is cited in a systematic literature review by Seery, Barreda, Hein & Hiller (2021) on retention strategies for online students, which is also open-access. These open-access resources encourage the widespread adoption of the conceptual frameworks, enabling other scholars to develop them further or adapt them to different contexts, and to share the resulting works back to the Commons.”- Gabi Witthaus

Key References: Redmond, Heffernan et al. (2018); Redmond, Foote et al. (2021); Seery et al. (2021)

Open Educational Practices

Open Educational Practices (OEP) is a term used to describe a wide range of practices and behaviours associated with aspects of open education. At one level this might pertain to the ways OERs are used in pedagogy. But often a broad perspective is chosen so as to account for the various changes in practice that are associated with openness, or the way that differences in context are expressed. OEP don’t really have a universal, objective definition (Cronin & Maclaren, 2018). However, the concept is often usefully employed to capture important changes in practices, values, cultures or pedagogy.

“My Ph.D study examined four sets of online resources in multidisciplinary contexts and how they performed as open education practices (OEP). Because learners are the focus of my open practice, the study interrogated the different knowledge practices the resources encourage and how they count towards

defining a functionally successful 'openness' to learners' knowledge background. I was working with an Indigenous social policy and workforce development suite of projects for the Northern Institute at Charles Darwin University, Australia. I focused on the resources we were making with knowledge authorities, and explored ways institutions can better value Indigenous knowledges via OEP.

"I examined how the resources met three sets of criteria to understand how they acknowledged and represented knowledges. These sets of criteria helped form an iterative 'filter' cycle for evaluating the resources and their OEP via my research aims: refining definitions; testing the concept of 'open' in each resource; interrogating practices to develop an understanding of how 'open' translates into functional engagement for some learners; and determining a set of practice principles for OEP and critical openness.

"My study evaluated practices-as-data contained in the case study resources. I used my theoretical framework and methodological philosophy based on a traditional water and filtering story (shared by my supervisor, Dr Kathy Guthadjaka) to inform the conceptual framework and analytical tool for the case studies. The conceptual framework is also strongly influenced by the context and the cultural significance of this work. There were three conceptual 'regions' I saw converging in my study:

- 1. Online and digitally based knowledge and learning work*
- 2. Indigenous ways of learning and knowledge authority*
- 3. Workforce development and education policy and practice*

"Each of the case studies lived at the interface between these three regions and their 'dialects.' Therefore, I needed to use conceptual language which could encapsulate the resources from these three angles. Conceptualising OEP from these three perspectives helped to create a particular focus that was situation specific and appropriate, and respectful to the decolonising contribution I was hoping to make to Indigenous Knowledge work in education, workforce development and Open Education. I also wanted to couch the study in contemporary educational frameworks to maintain its academic transferability for use in institutional settings.

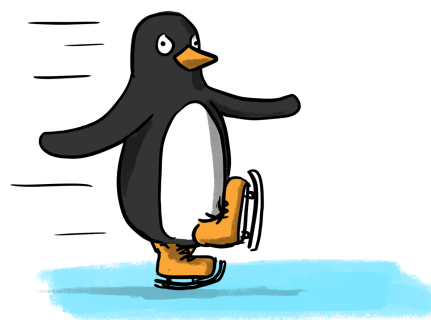
"The advantage was I could curate something especially for my study. The challenge was overcoming the need for more certainty and a 'purpose made' framework, and taking the leap into the swamp." - Johanna Funk

Key References: Country et al. (2015); Christie & Verran (2013); Cronin (2017); Cronin & Maclaren (2018); Martin & Mirraoopa (2003); Patton (2006); Smith (2005)

PRAXIS Framework

“The approach might be described as Kuhnian: in a simplified summary, we can say that Kuhn (1962) used the Copernican revolution to explain how paradigm shifts operate in the scientific community and developed an analysis of the methods and criteria for studying science. In the same sense, I intend to use the case study described below as an empirical test field to explore the possibilities of the theoretical framework of complexity science, to consider its behaviour as a scientific theory.

“The case was extracted from PRAXIS, an Educational Action Research project developed within academic professional learning communities (PLC) in the context of public higher education in Uruguay. As a strategy towards fostering teaching innovation, PRAXIS Project explored the potential and benefits of academic PLC for the reflection and transformation of teaching practices and the integration of digital technologies in a meaningful way into teaching. The Project approach was based on Open Science and Open Educational Practices as foundational frameworks to face the challenges of critical Educational Action Research (Czerwonogora & Rodés, 2019).



“My thesis research wonders if it is possible to consider complexity science as a theoretical framework capable of accounting for the systems it addresses: does it have the capacity to predict possible states or future behaviors of the system? Is it suitable to describe and explain the system? Is it capable of providing guidelines referring to the intervention on the system and its control? As Strevens (2003) questioned, to which social systems might the enion probability analysis (which attempts to analyse independent parts of complex systems) be successfully applied? Is it possible to characterize microvariables, macrovariables and background variables, micro and macrodynamics, in these systems?

“To answer these questions the thesis proposes a reflection on complexity science from the philosophy of science perspective, through the case study of PRAXIS academic PLC. The research

involves two examination levels: PRAXIS case itself and the philosophical analysis of PRAXIS as a complex system.

"The conceptual framework is based on complexity science and complex systems. This approach can be used to understand and manage a wide variety of systems in many domains, so I see this as a great advantage. It can provide a comprehensive, cross- and transdisciplinary analytical approach that complements more traditional scientific approaches that focus on the specific subject matter in each domain.

"I think the biggest disadvantage has to do with the fact that this subject is associated with mathematics and the hard sciences and these disciplines are seen as difficult, not very understandable, or friendly." - Ada Czerwonogora

Key References: Czerwonogora & Rodés (2019); Davis & Sumara (2006); Érdi (2010); Mitchell (2009); Strevens (2003)

Rhizomatic Learning

Cormier (2008) indicates that in the rhizomatic model of learning, curriculum is not driven by predefined inputs from experts; it is constructed and negotiated in real time by the contributions of those engaged in the learning process. This community acts as the curriculum, spontaneously shaping, constructing, and reconstructing itself and the subject of its learning in the same way that the rhizome responds to changing environmental conditions.

The rhizomatic viewpoint returns the concept of knowledge to its earliest roots. Suggesting that a distributed negotiation of knowledge can allow a community of people to legitimize the work they are doing among themselves and for each member of the group, the rhizomatic model dispenses with the need for external validation of knowledge, either by an expert or by a constructed curriculum. The community, then, has the power to create knowledge within a given context and leave that knowledge as a new node connected to the rest of the network.

Key References: Bozkurt, Honeychurch, Caines, Maha, Koutropoulos & Cormier (2016); Cormier (2008); Gravett (2021)

Social Justice

Social Justice is an example of a sociological conceptual framework used to describe the dimensions of social inequality over the decades, which has more recently been taken up by open education researchers to consider the inequalities of access, experience and outcomes within education including digital education (Lambert 2018; Hodgkinson-Williams and Trotter 2018).

Social justice is useful where certain cohorts of students appear to get unequal treatment or outcomes. Social justice frameworks most commonly are drawn from the important work of North American scholar Nancy Fraser, who talks about inequality having both economic (*redistributive*), social (*recognitive*) and political (*representational*) dimensions.

“Redistributive justice is the most long-standing principle of social justice and involves allocation of material or human resources towards those who by circumstance have less (Rawls, 1971). Recognitive justice involves recognition and respect for cultural and gender difference, and representational justice involves equitable representation and political voice (Fraser, 1995; Keddie, 2012; Young, 1997) (Lambert 2018, p 227).” Recognitive and representational justice are useful dimensions to consider when sexist or racist impacts of technology or education are part of the research focus.

“Hodgkinson-Williams and Trotter’s work (2018) additionally translated Fraser’s ideas of ameliorative vs transformational (band-aid vs root cause) solutions to injustice to identify and compare different approaches to social justice solutions within open education pedagogy. This was used by Bali, Cronin and Jhanghiani (2020) to further develop a social justice aligned framework for Open Educational Practices (OEP.)

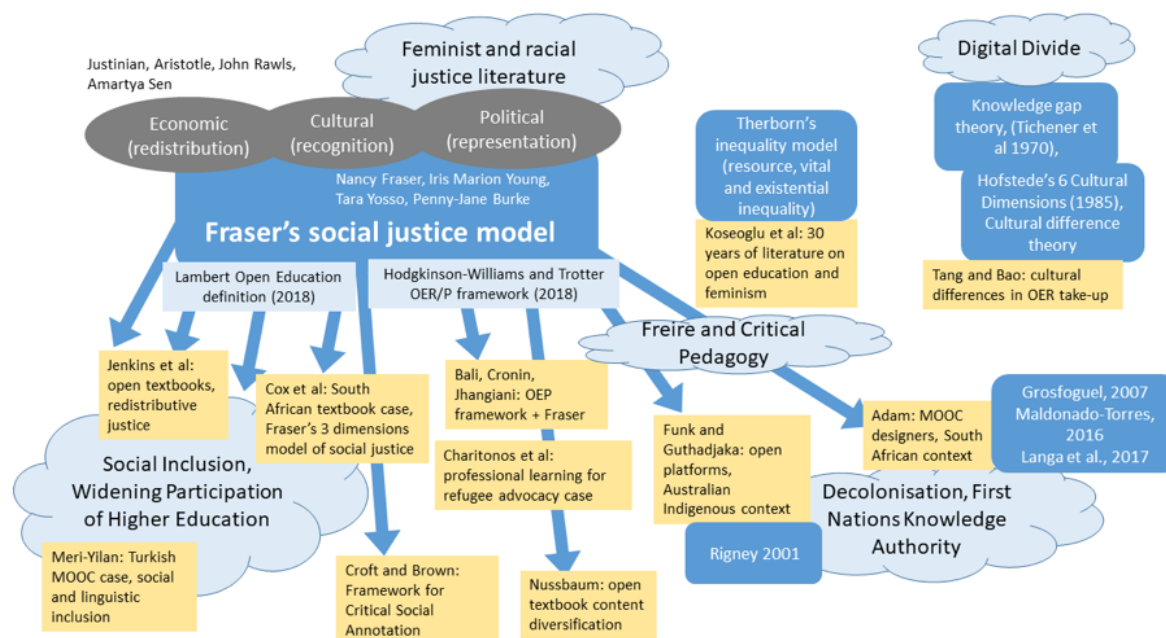
“I used a social justice framework for my Ph.D thesis, and it was also used as an analytics framework for some of my papers. My overarching research question also used the term explicitly: How can open education programs be reconceptualised as acts of social justice to improve the access, participation and success of those who are traditionally excluded from higher education knowledge and skills?

“I found that open education program can enact social justice by: providing free or very low-cost programs (redistributive justice); designing programs with flexible delivery, support and linguistic options so under-represented and regional populations are more likely to participate (recognitive justice); and partnering to involve representatives of the communities to be educated in the design,

learning resource development and construction of the courses (representational justice.)

“In a follow-on national study of open textbooks post Ph.D, I used the three principles of social justice to frame the interview questions when talking to students and staff about the potential for textbooks to be used as vehicles for social justice. The principles also become overarching themes to organise and analyse the interview transcripts, and language of each of the three principles were also evident in the headings of the final report.” Sarah Lambert

Lambert and Czerniewicz also edited a special collection of the *Journal of Interactive Media in Education* (JIME) on the topic of Open Education and Social Justice (Lambert and Czerniewicz 2020). While many of the papers in the collection used Fraser’s three principles or dimensions to underpin their studies, there were other approaches from other parts of the world (Adam 2020; Koseoglu et al 2020; Funk and Guthadjaka 2020) including Therborn’s inequality model and post-colonial theorists focussing on racial inequality in particular. This suggests that social justice conceptual models will continue to develop in response to the particular global context that the researchers are working in. Below is a visual representation of the different theorists who have influenced the different author’s own conceptual mapping of social justice frameworks.



Social justice concept map of the papers in the collection and their theoretical underpinnings
CC-BY Sarah Lambert (Lambert & Czerniewicz, 2020)

Key References: Adam (2020); Bali, Cronin & Jhangiani (2020); Funk & Guthadjaka (2020); Hodgkinson-Williams & Trotter (2018); Koseoglu *et al.* (2020); Lambert (2018); Lambert & Czerniewicz (2020)

Social Realism

“There are claims that Activity Theory (AT) can describe “the ways in which activities are informed by the specific setting and motives of people involved in them, as well as by the larger socio-historical and cultural networks of which they are a part” (Kain and Wardle, 2005). However, in my thesis this blurring of settings, motives and networks was viewed as conflatory and analytically impossible. Therefore, Social Realism (SR) was used to explain the causal mechanisms, especially those of individual agency. AT did not adequately explain the causal mechanisms that underlie the actions of the individual, thereby limiting the explanation of why certain courses of action have been chosen.



“Archer’s SR was used to explore the agency of individual lecturers. The Archerian view that individuals have a life course that shapes the sense of self and that individuals make choices based on their life concerns is not made explicit in AT. SR (Archer, 2003, 2007a, 2012) was used to explain why people mediate contradictions in particular ways. SR was used in addition to AT, to use Archer’s own term, to ‘underlabour’ AT, specifically to explain the role of the subject as an agent.

“These theories provided a dialectical approach that seeks to explore connections between all elements of a system as well as exploring the ‘inner conversations’ of the agents in the system. Three key components of SR were used in this thesis. Firstly the analytic dualism of culture/structure and agency was used to pull apart existing social structures in order to better understand the different parts. Secondly, Archer’s concept of ‘ultimate concern’ was used to understand the motivation of these lecturers. Thirdly, the modes of reflexivity were applied to elucidate the interplay between agency, culture and structure.” - Glenda Cox

Key References: Archer (2003); Archer (2007); Archer (2012); Kain and Wardle (2005)

TPACK Framework

TPACK stands for Technological Pedagogical Content Knowledge (Koehler & Mishra, 2009; Mishra & Koehler 2006). It is a theory developed to explain the set of knowledge that teachers need to teach their students a subject, teach effectively, and use technology. The TPACK framework emphasises the kinds of knowledge that lie at the intersections between three primary forms: Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical Content Knowledge (TPACK). It has seven components:

1. Content Knowledge (CK). Teachers' knowledge about the subject matter to be learned or taught.
2. Pedagogical Knowledge (PK). Teachers' deep knowledge about the processes and practices or methods of teaching and learning.
3. Technology Knowledge (TK). Knowledge about certain ways of thinking about, and working with technology, tools and resources. and working with technology can apply to all technology tools and resources.
4. Pedagogical Content Knowledge (PCK). Covers the core business of teaching, learning, curriculum, assessment and reporting, such as the conditions that promote learning and the links among curriculum, assessment, and pedagogy
5. Technological Content Knowledge (TCK). An understanding of the way technology and content influence and constrain one another.
6. Technological Pedagogical Knowledge (TPK). An understanding of how teaching and learning can change when technologies are used in particular ways
7. Technological Pedagogical Content Knowledge (TPACK). Underlying truly meaningful and deeply skilled teaching with technology



"I am interested in working with practitioners and experts of teaching (e.g., teachers) to co-design educational materials (e.g., OER, computer software) that are effective and pedagogically meaningful. So far I have worked on making intelligent tutors and OER using visual representations for helping students learn math problem solving. One framework that I have used a lot is Koehler and Mishra's TPACK framework. It provides a nice high-level description of the aspects which researchers (and practitioners) need to be aware of when thinking about technology integration into an educational setting. In the context of OER use/adaptation, researchers can use TPACK to understand (in an earlier phase of the research) what aspects of OER integration they would need to investigate (i.e., content, technology, and pedagogy)." - Tomohiro Nagashima

Key References: Rets, Rienties & Lewis (2020), Koehler & Mishra (2009); Mishra & Koehler (2006)

Unified Theory of Acceptance and Use of Technology (UTAUT)

Like diffusion of innovation, the Unified Theory of Acceptance and Use of Technology is a technology adoption model. Proposed by Viswanath Venkatesh and others it sought to unify eight existing technology acceptance models with regards to IT. UTAUT proposes four key constructs in determining user behaviour: 1) performance expectancy, 2) effort expectancy, 3) social influence, and 4) facilitating conditions. OER and related practices can be viewed as a technology acceptance issue, and so explanatory models such as this can be useful when analysing user adoption.

"The UTAUT framework adapted by Mtebe and Raisamo (2014) is aimed at assessing how the four key constructs -performance expectancy; effort expectancy; social influence and facilitating conditions - of the UTAUT model impact behavioral intention to adopt and use OER, leading to actual use of OER. It was used to inform the development of a quantitative, 5-point Likert-like scale questionnaire that measured stakeholders' intentions to adopt and use OER, and to gain an initial understanding of what factors facilitate or hinder the use of OER in this particular setting. The advantage of using this framework is that it is focused on measuring the intention of participants to adopt and use OER and not on measuring user acceptance of technology. The disadvantage of using this framework is that it does not enable the researcher to observe or measure actual OER use." - Viviane Vladimirschi

Key References: Venkatesh et al (2003); Mtebe and Raisamo (2014)

Value Creation Framework

The Value Creation Framework (Wenger, Trayner, & de Laat, 2011) is used to describe ways that networks of social learning create value for their communities.

“Another framework that I’m using is the Value Creation Framework to explore teachers’ perceived value of an inter-institutional collaboration on sharing knowledge, practices and OER. · Perceived value can be essential for the viability of OER initiatives because “community participation consumes time, most community members experience both internal and external pressure to discover and deliver value soon after the community starts” (Wenger, McDermott, & Snyder, 2002, p. 84). This framework distincts five cycles of value: 1) immediate value: activities and interaction, 2) potential value: knowledge capital, 3) applied value: changes in practice, 4) realize value: performance improvement, 5) reframing value: redefining success. These value cycles are not hierarchical nor exclusive to one other. The strengths of the Value Creation Framework is that it provides a conceptual framework to assess different kinds of value creation in communities and networks. The authors provide definitions of the cycles of value creation, measures of value for each cycle and a toolkit to collect value creation stories.” - Marjon Baas

Key References: Wenger, Trayner, & de Laat (2011)

Brief guide to additional Theoretical Frameworks

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<https://internationalpedagogies.home.blog/potential-theoretical-frameworks/>)

Here you can find a very brief introduction to a range of theoretical perspectives which can inform your research project.

Learner Transitions and Experiences

Theory	Simple Description	Suggested reading(s)
Ecological systems theory	The multiple environmental and social systems that impact on an individuals' experiences	Original: Bronfenbrenner (1979) Further conceptualisation in higher education: Jones (2018) Example in practice: Elliot <i>et al.</i> (2016)
Multidimensional transition theory	The multilayered academic, social, and emotional transitions that individuals encounter when moving from one space to another	Introduction: Jindal-Snape & Ingram (2013) Example in practice: Jindal-Snape & Rienties (2016)
Academic resilience theory	Students' capacity to adapt and develop under uncertainty or adversity	One approach: Holdsworth <i>et al.</i> (2017) Example in practice: Singh (2021)
Rhizomatic transitions	Construction of students' transitions experiences away from linear pathways towards more fluid, ongoing experiences	Original: Deleuze & Guattari (1987) Further conceptualisation in higher education: Gravett (2019) Example in practice: Balloo <i>et al.</i> (2021)
Student engagement model	Model of factors that impact students' university retention and success	Original: Tinto (1975) Example in practice: Rienties <i>et al.</i> (2012)
Liminality	Transitional space that may lead to disorientation or ambiguity	Original: Turner (1969) Example in practice: Parker <i>et al.</i> (2012)

Identity development and Selfhood

Theory	Simple Description	Suggested reading(s)
Student agency theory	Students' capacity to make choices within the constraints of their lived realities	One approach: Biesta & Tedder (2007) Example in practice: Tran & Vu (2016)
Identity theory	The construction of the self through interactions with experiences and culture	One approach: Hall (1996) Example in practice: Pham & Saltmarsh (2013)
Capability approach	Theory that people achieve well-being through their capabilities to be and do what they value	One approach: Nussbaum (2011) Second approach: Sen (1973; 1995) Example in practice: Fakunle (2020)
Possible selves	Approach to understanding individuals' imagined 'like-to-be' and 'like-to-avoid' futures	Original: Markus & Nurius (1986) Application to higher education: Harrison, (2018); Henderson <i>et al.</i> (2019) Example in practice: Yang & Noels (2013)
Intersectional Theory	Framework for understanding how a person's multiple identities lead to different forms of oppression and discrimination	Original: Crenshaw (1989) Example in practice: Forbes-Mewett & McColloch (2015)
Critical race theory	Recognition of race as a social construct and that social structures are inherently racist	Starting point: McCoy (2015) Example in practice: Yao et al. (2018)
Gendered racialisation	The intersecting identities of gender and race	Original: Selod (2018) Example in practice: Karaman & Christian (2020)

Pedagogies

Theory	Simple Description	Suggested reading(s)
Critical pedagogies	Application of critical theory to education; philosophy of education that focuses on issues of social justice, power imbalances, and domination	Originals: Freire (1970); Giroux (2011)
Engaged pedagogy	Critical pedagogy approach that values relationships between student / teacher, teacher self-actualisation, humanistic approaches to education	Original: hooks (1994)
Academic hospitality	Reflection on academic staff as 'hosts' to reciprocally support students as 'guests'	Original: Bennett (2000) Further conceptualisation: Ploner (2018)
Bernstein's pedagogic devices	Theory focusing on the ways pedagogies represent symbolic control over knowledge	Original: Bernstein (2000) Example in practice: Zeegers & Barron (2008)
Transformative learning	Evaluation of past experience through the acquisition of new knowledge	Original: Mezirow (1991) Example in practice: Nada <i>et al.</i> (2018); López Murillo (2021)

Curricula

Theory	Simple Description	Suggested reading(s)
Hidden curriculum	The unwritten lessons learned about normative values, beliefs, ethics, etc. as a result of educational provisions and settings	Starting point: Apple (1989) Example in practice: Kidman et al. (2017)
Internationalisation of the curriculum	Inclusion of international or intercultural elements into the content and delivery of education	Starting point: Leask (2015) Further theorisation: Clifford & Montgomery (2017) Example in practice: Vishwanath & Mummery (2018)
Glocalisation	The blending of global and local elements in the curriculum	Starting point: Robertson (1994) Further theorisation in higher education: Patel & Lynch (2013)
Tourist gaze	Approach to learning about other cultures as a 'guest' or 'tourist'	Starting point: Urry & Larsen (2011) Example in practice: Vinall & Shin (2019)

Social Learning

Theory	Simple Description	Suggested reading(s)
Communities of practice	A set of people who share a common interest or practice	Original: Wenger (1998) Example in practice: Montgomery & McDowell (2009)
Figured worlds	Development of the self in relation to the social types in their surrounding world	Original: Holland <i>et al.</i> (2001) Example in practice: Chang <i>et al.</i> (2017)
Cultural historical activity theory (CHAT)	Relationship between the mind and action within an individual's situated social world	Original: Engestrom (2001) Example in practice: Straker (2016)

Sociological Theories of Power

Theory	Simple Description	Suggested reading(s)
Bourdieuian theory	Set of thinking tools for investigating power and the way it impacts individuals and societies through structural constraints	Original: Bourdieu (1987) Helpful guide: Grenfell (2013) Example in practice: Xu (2018)
Foucauldian theory	Set of thinking tools for investigating power relationships in society, including how they influence language or practice	Original: Foucault (1972; 1977) Helpful guide: Ball (2013) Example in practice: Koehne (2006)
Gramscian theory	Theory of cultural hegemony - how the state and high economic class use institutions to maintain power	Original: Gramsci et al. (1971) Helpful guide: Mayo (2015) Example in practice: Kim (2011)

Decolonisation / Postcolonialism

Theory	Simple Description	Suggested reading(s)
Orientalism	Negative portrayals and 'othering' of 'the East' by 'the West' which serve to maintain colonial power and assumed superiority	Original: Saïd (1978) Helpful guide: Leonardo (2020) Example in practice: Yao (2018)
Subjugation	Forced dominance of one group over another through (neo-)colonialism and violence	Original: Fanon (1967) Helpful guide in education: Leonardo & Singh (2017)
Third space / hybridity	The sense of 'limbo' or 'in between-ness' of individuals' cultural identities	Original: Bhabha (1994) Example in practice: Pitts & Brooks (2017)
Double consciousness	The experience of dual identities in conflict within an oppressive society	Original: Du Bois (1903) Example in practice: Valdez (2015)

Mobilities

Theory	Simple Description	Suggested reading(s)
Spatial theories	Relations between socially-constructed spaces and times	Original: Lefebvre (1991) Further theorisation in higher education: Larsen & Beech (2014) Example in practice: Waters & Leung (2012)
Migration infrastructures	Interlinking structures that enable or constrain mobilities	Starting point: Xiang & Lindquist (2018) Example in practice: Hu <i>et al.</i> (2020)

Advice from the Front Line

Here we summarise some advice from GO-GN researchers who have recent experience of doctoral study in open education.

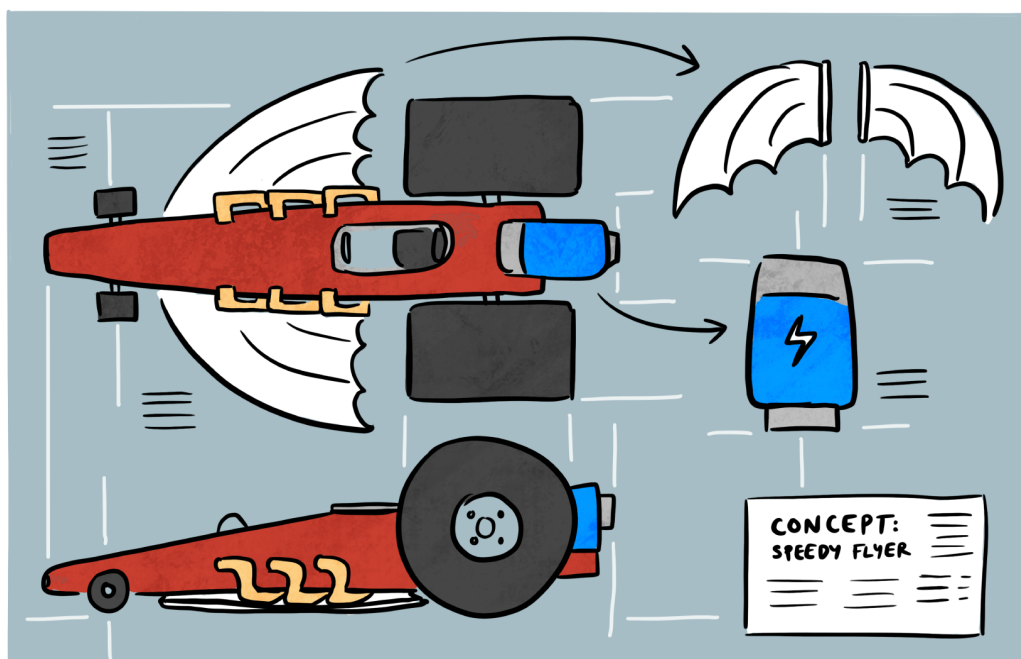
“For starters, I would not have chosen to use mixed methods or mixed methodology. Although case study research is quite flexible when it comes to combining both quantitative and qualitative methods, the use of more than one conceptual framework made my study confusing to readers and added an unnecessary heavy burden to my workload. Although the conceptual frameworks I used afforded me a comprehensive understanding of the phenomenon under study and did corroborate and complement each other with regards to the data collected and analyzed, I could have used just the design thinking approach and Warschauer’s (2002) framework for guidance in developing the coding category labels of data amassed from the design thinking workshops. It is important to be clear how the conceptual framework(s) you use help achieve a research project’s purpose. As only ten participants responded to the UTAUT survey, I had a hard time explaining to my committee its use and significance. In hindsight, I would have chosen only one conceptual framework to work with and would have developed simple survey questions to gather additional data from the population that participated in the study. It is thereby necessary to choose a conceptual framework that helps you answer your research questions, helps define the relevant variables of your study, maps out or illustrates how these variables relate to each other and helps you achieve your research goals. Ultimately, the advice I would give to other researchers is to first and foremost define your research questions and subsequently look for a conceptual framework that works in answering the research questions. Lastly, it is important to keep in mind that no research project ends as it begins or as it is originally planned. Therefore, one needs to be flexible to make adjustments and changes throughout the entire research process.” - Viviane Vladimirschi

“Don’t be seduced by what other people say you should use; think about your study and what makes the most sense for who is involved in it, the participants/stakeholders or beneficiaries, what they might like to see as a result; try out a few ideas and ways to understand before committing to one; use what makes sense for you, your work, your intellectual and professional pathway and what you want to learn, gain and understand in the field. It’s just the start. And it’s your work.” - Johanna Funk

“It’s difficult to balance what we as emerging scholars see as our transformative work, the launching point from which we will change the world, with real life. I would encourage others to

engage with the conceptual framework with which those advising them are most familiar. Embrace the established understanding of others who have done the work, find your way within that tradition. As one of my committee members put it, get the credential, then break tradition.” - Kathy Essmiller

“Once you have the phenomenon you want to explore, concepts will emerge. Your research questions will begin guiding your conceptual framework. The literature review forms the conceptual base. The theoretical framework will most often explain the relationship between your concepts and explain why the relations occur in particular ways.” - Glenda Cox



“As much as the Ph.D is about exploring interests, the more you can do from the beginning to hone in on and work toward your dissertation, the more you'll thank yourself in those final years. The more papers and projects you can structure around your topic --even if they only intersect with aspects of your topic -- the more time and energy you will save yourself farther along in the process. It is also worth keeping the project in perspective. A dissertation is a very important project, yes, but it's just one of many projects you will complete along your career. Just write the paper.” - Elizabeth Spica

“Read widely; look at what gaps OER research currently has and do research that addresses one of those; do a pilot because it helps understand what construct it is possible to explore with what kind of data; try to enjoy your topic. Most OER research has an underlying moral imperative - making learning resources more

accessible, global and free - doing this research made me feel better about myself :)” - Irina Rets

“I would give the same advice as I received from my main supervisor: Use time the first year(s) to make proper analysis of various conceptual frameworks before you decide which one to apply to your research.” - Anne Algers

“Read a lot of papers of other GOGN researchers to get a feeling of the different kind of frameworks that are being used in open education research. Read a lot of papers on educational research on topics that relate to your research and see what kind of frameworks are being used. Do not stick to the framework that you have selected at the beginning of your Ph.D. If it becomes clear that another framework might suit better, then let go of the old framework (and all the investment that you've put in it) and embrace the new framework. Ask other GOGN'ers for help or advice when struggling with choosing or working with conceptual frameworks.” - Marjon Baas

“My supervisor gave me this advice after I had been struggling with my conceptual frameworks chapter for some time: The focus of your conceptual frameworks chapter should be on describing the frameworks as they are used in the literature. Don't try to reinvent them before you have used them in your data analysis. Also, if you are using two conceptual frameworks that are not usually used together in the literature, describe them separately for now. You might arrive at a new version of a framework (or a combined version of two frameworks) after you have done your data analysis, but that is not the task for now!” - Gabi Witthaus

“Although I am still far from the end of the process but not at the beginning of the research (the case study has a sufficient level of development for the purposes of this thesis), the philosophical analysis from the perspective of the philosophy of science is the next stage (starting!), and the most challenging. In addition to exchanges with my supervisors, Pat Thompson has inspired many reflections on the conceptual framework. I agree with [her vision of the theoretical framework](#) as a big component that gives coherence to the project: a structure that is used to design a study, generate data and analyse it; provides borders which allow to decide what is included and what is not. Is a basis for connecting to other research (and eventually compare the results generated by this framework with others) and in this sense, also a potentially reusable approach which can be duplicated with other topics and/or data. Most important of all, I think of it as a linked set of parts, ideas which guide the writing and help to create the red thread of argument. I'm working to achieve the red thread... At this

stage, I think that the conceptual framework should be developed as I go back and forth between analysis and theory, providing support to the construction of research, like a puzzle where each piece should take its rightful place. The writing must also accompany the process and not be left to the end.” - Ada Czerwonogora

“I spent ages and ages reading about the Communities of Inquiry framework and it led to a dead end, but I learnt a lot along the way...” - Gabi Witthaus

“It's difficult to balance what we as emerging scholars see as our transformative work, the launching point from which we will change the world, with real life. I would encourage others to engage with the conceptual framework with which those advising them are most familiar. Embrace the established understanding of others who have done the work, find your way within that tradition. As one of my committee members put it, get the credential, then break tradition. I applied Diffusion of Innovations Theory and came out with understandings I did not at all expect, which I would have missed had I not applied that theory.” - Kathy Essmiller

“My supervisor keeps telling me the conceptual frameworks chapter is the easiest one to write... I'm not convinced.” - Gabi Witthaus

“In my thesis I generated some theory as an outcome of a systematic review - having read papers about the theory-generating powers of systematic reviews. My lead supervisor was very uncomfortable about this. While acknowledging that there was a blurred boundary between theory and conceptual framework, there was a clear message that Ph.D students did not create theory. So the solution was just to call the thing I generated a conceptual framework, and not claim it as ‘theory’. They were happy with that. I got the thing published, so I guess I was happy with that! But I was left with a feeling that there was an issue of status about who gets to create theory. I only later read feminist theory which produces excellent argument for democratising the creation of new theory - even PhD students!” - Sarah Lambert

“I think it's less scary to approach theory when thinking about it as explanation. I often distinguish between theory and conceptual frameworks in terms of micro to macro focus, theory as “grand theory” and conceptual framework as having a finer granular focus on a part of the learning and teaching landscape. But at the end of the day, they are both explanations - they both explain why or how certain things happen.” - Sarah Lambert

Conclusion & Reflection Prompts



In this guide we have provided an overview of different ways of thinking about the use of conceptual frameworks in research. We also presented reflections on the use of some frameworks in doctoral research in the field of open education.

A doctoral study programme is usually the first time anyone is expected to engage with conceptual frameworks in detail. The short answer is that there are a lot of ways to go about this aspect of research and there remains relatively little written about conceptual frameworks (compared with something like research methods). It's hard to be too prescriptive about selecting and using a conceptual framework since this can be where original and unique approaches are developed.

It's necessary to think about the value a conceptual framework can bring to a study rather than seeing it as just another section that you have to write and put in place. A conceptual framework can form the organising structure for your work; help to define your remit and research methods; and provide a basis for new theoretical insights and interpretations. It's something that it's important to get right! For that reason it can be tempting to use a framework that is all encompassing, but casting your net too wide brings its own complications.

It's important to be pragmatic, and accept that no single conceptual framework will ever be perfect. But one must also aspire to find an approach that can successfully answer your research question in ways that others can understand. Data collection and analysis should make sense in relation to your conceptual framework - this ultimately supports the progression and completion of research projects. We hope that this guide supports you in selecting and working with a conceptual framework in your research!

10 Problems with Theoretical/Conceptual Framing

(adapted from Casanave & Li, 2015)

1. *No framework!*
The reader cannot clearly understand the theoretical, conceptual, or methodological assumptions that underlie a study
2. *Inappropriate framework*
The chosen framework does not align theories with data appropriately
3. *Framework/data misalignment*
Framework does not connect with the rest of the study
4. *Imbalance between a framework and data*
Big ideas, big concepts... but without the data to support them
5. *Incomplete, superficial or inconsistent treatment of a framework*
Inconsistency in theoretical focus
6. *Misinterpretation of a theory*
Relying on buzzwords instead of developing a thorough understanding
7. *Lip service*
Using big names and big concepts without evidence of understanding
8. *Attraction to popular theories*
Popular theories still need to fit a study well
9. *Conspicuous absence*
Influential name or concept missing, suggesting failure to read widely
10. *Methodology missing*
Failure to explain underlying principles of inquiry; epistemological stance

Bordage's key points for using Conceptual Frameworks

Here are Bordage's (2009) 13 key points for using conceptual frameworks; Bordage's advice can be seen as agnostic about the specific constellation of theories, resources, perspectives and values that inform a conceptual framework.

1. Conceptual frameworks help understand (illuminate) problems.
2. Different conceptual frameworks emphasise (magnify) different aspects of the problem or elements of the solutions.
3. More than one conceptual framework may be relevant to a given situation.
4. Any given conceptual framework, or combination of frameworks, can lead to a variety of alternative solutions.
5. Conceptual frameworks can come from theories, models or evidence-based best practices.
6. Scholars need to apply (not just pay lip service to) the principles outlined in the conceptual framework(s) selected.
7. Conceptual frameworks help identify important variables and their potential relationships; this also means that some variables are disregarded.
8. Conceptual frameworks are dynamic entities and benefit from being challenged and altered as needed.
9. Conceptual frameworks allow scholars to build upon one another's work and allow individuals to develop programmes of research.
10. Programmatic, conceptually based research helps accumulate deeper understanding over time and thus moves the field forward.
11. Relevant conceptual frameworks can be found outside one's specialty or field.
12. Considering competing conceptual frameworks can maximise your chances of selecting the most appropriate framework for your problem or situation while guarding against premature, inappropriate or sub-optimal choices.
13. Scholars are responsible for making explicit in their publications the assumptions and principles contained in the conceptual framework(s) they use.

Conceptual Framework Tips Sheet

(O'Sullivan & Uijtdehaage, 2013:20)

The following guidance was originally written for medical students to guide them in the use of conceptual frameworks in their own scholarship. Most of the guide describes relevant frameworks but it ends with this useful, simple language checklist (slightly edited for readability).

1. How do I find a relevant framework?
 - a. Literature search - read papers that address a similar concept, problem, phenomenon
 - i. start within your field
 - ii. then go to similar experiences
 - iii. go outside of [your subject]
 - iv. Look for thematic reviews or other lit reviews
 - v. Follow interesting papers or frameworks forward to find others who have cited them
 - b. Consult with educators / researchers for their advice
2. What if I can't find an appropriate framework?
 - a. Make sure that you are confident that NOTHING applies.
 - b. Build your own framework by linking concepts in a model that the literature supports
3. When do I bring in the framework? How much should it drive my study?
 - a. If you have a framework that you are applying, then bring it into the introduction.
 - b. If you are trying to develop a framework, then it will come into the discussion as a result of your study.
4. What if I already started my study and didn't have a framework?
 - a. Often you have followed a logical path that can fit existing frameworks. Find one that can accommodate what you have done
 - b. Recognize this is not the strongest position to be in!
5. How do I incorporate the framework into my intro and my discussion?
 - a. In the introduction the framework usually flows from the key literature and before the purpose statement
 - b. In the discussion after the initial summary it is important to describe how your findings support or fail to support the framework. Thus the framework can be a substantive amount of the discussion
6. How deeply do I have to read about a conceptual framework?
 - a. It shows in a manuscript if you have failed to sufficiently understand your framework. It will feel as if you just "threw it in."
 - b. Make sure to read a seminal work, a review article and some of the most recent applications.

Research Design Template

Here's a blank version of a table referred to earlier - you can use this to keep track of different aspects of your research project.

Elements of your research approach and design	Position or stance, and implications	Possible underpinning constructs
Focus or title of the study		
Ontological and epistemological position		
Methodological approach		
Methodological design		
Data collection methods		
Data analysis methods		

Underpinning constructs across research design template
(Adapted from Passey, 2020:9)

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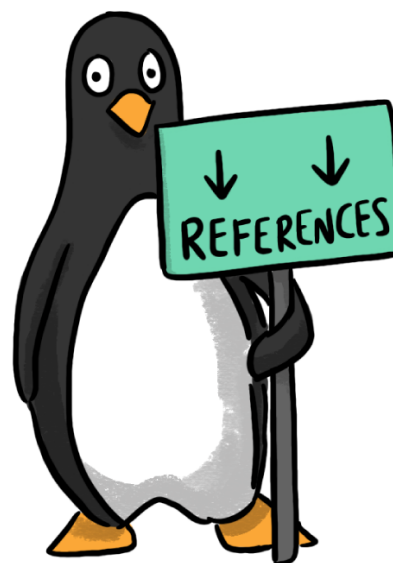
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GO-GN Theses

Here you can find details of the Ph.D theses that have been completed by GO-GN researchers, some of whom have contributed their insights to this Guide. Download the latest collection of doctoral theses completed by GO-GN members at [http://go-gn.net/theses/.](http://go-gn.net/theses/))

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