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Title

The contribution of theory to an ethnographic case study on interprofessional placements in healthcare education.

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Abstract

Theoretical frameworks add depth to research and increase transferability of findings. Unfortunately, theory application within interprofessional research is often ad hoc, superficial and poorly reported. Consequently, there are limited examples for researchers in the field to draw on when selecting and applying theory. In this paper we explore how a suite of sociomaterial, and sociological theories were selected to guide an ethnographic case study about interprofessional placements. Theory supported development of nuanced data collection tools. This facilitated comprehensive exploration of the factors impacting interprofessional placements, beyond those immediately visible. The use of a combination of theories was well suited to this complex phenomenon. We recommend research methodology training aims to develop researcher facility with theory and more consistent consideration of theory in reporting and quality appraisal tools. This may support more meaningful theory application, generating findings with deeply embedded theoretical foundations in interprofessional research.

Keywords: healthcare, educational research, research design, theory

Introduction

Theory has traditionally been underutilised in interprofessional scholarship (Reeves and Hean 2013). There are increasing efforts to address this deficit (Cohen Konrad *et al.* 2019). In 2013 the Journal of Interprofessional Care dedicated a special edition to the topic of theory in interprofessional research, including review and empirical articles (Reeves & Hean, 2013). More recently, Hean *et al.* (2018) published a BEME Guide to support the use of theory in interprofessional curricula. However, theory does not yet hold a clearly defined space within interprofessional research and use continues to be largely discretionary (Paradis and Reeves 2013). While conducting a qualitative metasynthesis relating to interprofessional placements, the authors of this paper noted that two thirds of studies were descriptive and lacked explicit theoretical underpinnings (O'Leary *et al.*, 2019).

Historically, educational researchers from health and social care professionals considered their research, including interprofessional research, as too pragmatically orientated for theories to make a meaningful contribution (Reeves & Hean, 2013). A drawback of this stance is that it limits our ability to grapple with underlying education processes and outcomes beyond what is directly observable. Globally, educational and general research agendas are moving ever more towards not only answering '*does it work*' questions but more so '*how does it work, for whom and in what contexts?*' (Brazil, Ozer, Cloutier, Levine, & Stryer, 2005). Theory provides a means to address the latter questions, facilitating transfer of findings to other populations or situations (Gear, Eppel, & Koziol-Mclain, 2018). This in turn increases research breadth and impact (Tracy, 2012).

However, if research papers are conceptualised as stories, theory often becomes a "*lost character*" (Brown *et al.*, 2019, p. 444). There are many contributory factors to this. Within literature there is a lack of clarity around what is meant by terms such as theoretical framework and theoretical model, with the terms often being conflated with conceptual framework (Green 2014, Varpio *et al.* 2019). Researchers may also question the accessibility and utility of theories to their research (Davidoff, Dixon-Woods, Leviton, & Michie, 2015). Traditionally, academic texts frame theories in "*obscure polysyllabic language*" (Norman, 2004, p. 178), clouding their applicability to 21st century research. But theories need not, and indeed should not, be static entities (Painter, Borba, Hynes, Mays, & Glanz, 2008). For example, consider the progressive development of activity theory which is relatively common in interprofessional research (O'Leary & Boland, 2020). Activity theory evolved from a basic theory about how people use physical and psychological tools to achieve workplace objectives (first generation activity theory) to a much more sophisticated theory considering how workplace culture, norms and tensions influence how people act at work (third generation activity

theory) (Johnston & Dornan, 2015). Thus, in a continual synergistic manner it is through application to research that theories become more refined and valuable (Cook, Beckman, & Bordage, 2007). Conversely, the less theories are applied, the more obsolete they may become. This is confounded by the limited guidance available to researchers to inform theory selection (Birken et al., 2017). Given the many potentially relevant theories available in the context of limited selection guidance, choosing theory for research can be a daunting undertaking (Shearn, Allmark, Piercy, & Hirst, 2017).

Even when no theory is cited in interprofessional research, Davidoff et al. (2015) posit that the innate explanation-seeking nature of human beings means some form of a theory is present. What may be absent is an explicit labelling or systematic accounting of the role theory plays (Green, 2014). This is problematic because it obscures how theory influenced the research and researcher. Theory use (implicitly or explicitly) leads researchers to foreground certain aspects of the work while leaving other dimensions unexamined (Maxwell, 2013). It is therefore important that researchers transparently reflect on these influences, enabling readers to assess the impact on research findings. A further issue is that theory is often used uncritically in interprofessional research (Green, 2014) or applied retrospectively to research findings, bypassing the additional dividends theory can pay when considered during research design and data collection (Lynch et al., 2018). Consequently, readers may infer that the theory made little meaningful contribution to the research, and its value is diminished. Research culture may perpetuate this practice. As an example, reporting tools such as the Standards for Reporting Qualitative Research (O'Brien, Harris, Beckman, Reed, & Cook, 2014) refer to theory as a feature to reference in reporting but no guidance is provided regarding depth required. An exclusion caveat is provided in the statement that authors report on '*guiding theory if appropriate*' (O'Brien et al., 2014, p. 3). The '*if appropriate*' addendum is not added to other features such as reporting on the research paradigm. Similarly, critical appraisal tools typically do not ask questions about whether and how theory was used in empirical research (Green, 2014). Consequently, there is a lack of minimum standards expected when applying and reporting on theory (Daly et al., 2007). This is a significant gap in terms of creating a coherent theoretical thread throughout the research (Beck & Stolterman, 2016). Word count restrictions are often cited as limiting author scope for articulation of how theory informed research design decisions (Painter et al., 2008). Unfortunately, this perpetuates the vague use of theories, a pitfall we were keen to avoid during this research.

An ethnographic case study relating to the process of establishing interprofessional placements for students of allied healthcare programmes was the context of our research. The case study approach

facilitated comprehensive exploration of interprofessional placements within a university and partner placement sites (Yin, 2014). Adopting an ethnographic methodology allowed for lengthy engagement with stakeholders and direct participant observation (Parker-Jenkins, 2018). Interprofessional placements are defined as students from two or more professions working together at a clinical site (Morphet et al., 2014). They come under the broader umbrella of interprofessional education, occurring when *'two or more professions learn with, from and about each other to improve collaborative practice and quality of care'* (CAIPE, 2017, p. 4). This paper forms part of the first author's doctoral research, which is ongoing at the time of writing. Given the current stage of research, this paper focuses upon relating theory to the research paradigm and data collection methods. The primary aim of this ethnographic case study is to improve understanding of the complex process of establishing sustainable interprofessional placements. To this end the overarching question was *'what are the experiences of stakeholders involved in implementing and sustaining interprofessional placements?'* Thus, it was necessary to explore what conditions are required to implement and sustain this placement model (Hean et al., 2016). The underpinning epistemology and ontology of this research was one of realism. As such our aim was to try to understand this phenomenon in a way which most closely reflects the reality of people's experiences of interprofessional placements (Barron, 2013). Data collection methods suitable for this research design included document analysis, participant observations and interviews (Roberts, 2009). We sought to track the process of considering theory from the initial stages of the research process. Providing a worked example of how theory can inform empirical interprofessional research will add to the limited but growing body of theoretically informed research in this field and support other researchers to use theory. As such the aims of the current paper were to:

- 1) Outline the steps involved in designing a theoretically informed ethnographic case study.
- 2) Illustrate how synergistic theories guided this interprofessional ethnographic case study.

Method

In this section, a four-step theory selection and application process is presented, with illustrative examples from the current project. These four steps have been distilled from author experiences and reflections while designing and conducting an ethnographic case study.

Step 1: Identifying potential theories

A necessary first step was to identify theories with the potential to contribute to the research project. Scoping relevant literature can help map theories in use (Halas et al., 2015) and identify trends in terms of theory use, illustrating what type of theories have been applied to what type of research (Im & Ju Chang, 2012). Educational conferences or conference proceedings can also provide insight into how theory is currently being used in a field (Kuper & Whitehead, 2013).

Application to ethnographic case study

Literature scoping was initiated by developing a search string of key terms and trialling in relevant databases. The search strategy incorporated terms such as 'interprofessional' 'collaboration' 'education' and 'theory' using databases including CINAHL, ERIC and Medline. This process highlighted that sociomaterial theories were showing increasing promise within the field, as a suite of theories capable of reflecting the complexity of interprofessionalism (further detail on these findings can be found in O'Leary & Boland (2020). Sociomaterial theories have a post-structuralist focus on interactions between humans and their environments, including non-human entities such as technology (McMurtry, Rohse, & Kilgour, 2016), reflecting a growing understanding of the complexity of interprofessionalism (Fenwick, Nerland, & Jensen, 2012). Patterns were also identifiable as to which specific sociomaterial theories had been applied to interprofessional research, including activity theory, complexity theory, presage-process-product and actor network theory, all of which were potentially applicable to this ethnographic case study. This stage also primed the authors to consider layering theories to enrich the overall research design if appropriate based on recommendations in literature such as Hean *et al.* (2018).

Step 2: Determining alignment between theories and research paradigm

The next step required alignment of the potential theories to the overarching research paradigm, to ensure coherency of approach and philosophy (Grant & Osanloo, 2014). To determine how well the theories, research paradigm and methodology align, extrapolation and comparison of the key principles of each was required.

Application to ethnographic case study

In this case the chosen research paradigm was critical realism, based on the premise of three distinct layers: the empirical (what we know and experience via our senses), the actual (all events, including those we do not know about) and the real (underlying mechanisms that generate events) (Hood 2016). Critical realism occupies an ontological position between positivism (reality is objective and knowable) and constructivism (reality is subjective and interpreted) (Bergman et al. 2012). Critical realism is interested in matters of causation, agency, structure, and relations (Archer *et al.* 2016). As the research aimed to account for not only participant experiences but also the role of structure and culture a critical realism paradigm was deemed to be the most appropriate in this context. The next step in our case study was to identify theories that would align with this research paradigm. While a number of theories consider individual learning (e.g. adult learning theory) and group perspectives (e.g. contact theory), these tend not to account for the role of culture and structure on interprofessionalism (Fenwick 2012). In contrast, sociomaterial theories were a good fit for this research as they reject the notion that learning is individualistic, emphasising that learning '*is embodied in dynamic relationships among people and their physical contexts*' (McMurtry *et al.* 2016, p.171). Therefore, the orientation of sociomaterial theories and realism were well suited to generate meaningful understandings about the phenomenon of interest. While there are differing views as to the role of theory in ethnographic research, these relate more to *when* theory is used than *if* it is used and this is addressed in relation to data collection (Wilson & Chaddha, 2009) (Further details can be found in Supplementary Material A, outlining the alignment of the research paradigm, theories and methodology).

Step 3: Selecting specific theories

Potential theories should be considered for 'goodness of fit' in terms of answering the research question (Kilminster, 2017). This was done by applying potential data to pilot or pre-existing data and interrogating what the theory adds to data interpretation. Researchers also need to bear in mind that limitations of chosen theories may only become apparent during the process of application and new theories may need to be considered during the research process (Kramer-Kile, 2012).

Application to ethnographic case study

We reviewed interprofessional research and broader healthcare educational research to identify potentially suitable sociomaterial theories. This included complexity theory (Cilliers 1998), actor network theory (Latour 2007), structuration theory (Giddens 1984) and presage-process-product

theory (Biggs 1993). Pawson (2000) refers to these types of theories as middle-range theories. In this sense they are not micro theories specific to the phenomenon, yet neither are they grand level highly abstracted theories (Reeves and Hean 2013). Theories were evaluated for goodness-of-fit during data collection and analysis (Jagosh *et al.* 2015). This was done by applying potential theories to pilot data, drawn from participant observation notes written following an interprofessional placement debriefing meeting. This allowed authors identify the strengths and limitations of each theory and decide on the theory combination that supported the richest understanding of the data. For example, authors posed a series of questions related to the data using constructs from the theories, e.g. *what distinct systems are involved in the setting up of interprofessional placement and how do they interact?* It is important to note that theories were not used to test hypotheses in the data but as lenses through which to make sense of empirical experiences (Wilson and Chaddha 2009). For instance, the construct of structural theory that rules and regulations only exist when deliberately enacted did not align with the data (Beringer *et al.* 2006). Actor Network theory which assigned agency to these was more representative of our data. Prospective adoption of *a priori* theoretical or frameworks also informs methodological choices. To fully represent data complexity necessitated drawing on theories in combination. Presage-process-product theory identifies features affecting IPP at different stages of the process. This was relevant as we sought to better understand how different stages from planning to evaluation interacted. As such, layering theories allowed for a more nuanced approach compared to employing a single theoretical lens (Reeves, Albert, Kuper, & Hodges, 2008). This inductive approach to development of the theoretical framework was guided by the data and our interpretations in contrast to analysing data according to a pre-existing theoretical framework (Varpio *et al.* 2019).

We also realised the need to look beyond the initially identified sociomaterial theories to explore social and cultural issues more deeply (Reeves 2016). To do so involved sourcing interprofessional research identifying itself in its title or abstract as having a sociological orientation. These included Goldman *et al.* (2016) '*A sociological exploration of the tensions related to interprofessional collaboration in acute-care discharge planning*' and Reeves (2005) '*Developing and delivering practice-based interprofessional education: successes and challenges*'. For example, we became aware that how educators negotiated during the planning stages of interprofessional placements was variable and had long-term implications. To explore this in more depth, a sociological theory (negotiated order theory - Strauss 1982) to augment the sociomaterial perspective was recruited. Complexity theory provided rich detail on the initial implementation of IPP. However, to more deeply explore sustainability, we utilised Normalization Process Theory (May and Finch 2009).

Figure 1 presents the overall suite of theories used to inform the ethnographic case study and what each theory contributed. To our knowledge, the three socio-material theories [complexity theory, actor network theory and presage-process-product theory] and two sociological theories [negotiated order theory and Normalization Process theory] that ultimately comprised our theory base, were not combined previously. Review of the key constructs of each theory confirmed that no fundamental contradictions mitigated against layering them.

[Insert Figure 1 as half page figure about here]

Step 4: Applying theory to research methods

During this step it was necessary to identify the research methods appropriate to the research question and type of research being undertaken (Tracy, 2010). At this stage, constructs from chosen theories can inform the development of data collection tools. Kramer-Kile (2012) suggests reviewing the research question, the theories being used and the research approach to inform what data collection methods will be used. Sampling can also be informed by theory, which may highlight participants not captured by demographic criteria but who can provide rich data on an aspect of the phenomenon highlighted by the theory (Willis et al., 2007).

Application to ethnographic case study

Decisions were informed by author group discussions to clarify the key areas to focus on during data collection. For example, how bigger/powerful and smaller/less powerful systems interacted as well as the impact of cultural norms and technology on the process of establishing a new placement model. Ultimately, we selected document analysis, participant observations and interviews as suitable methods for this ethnographic case study. This combination allowed for analysis of how human and non-human factors interacted to enact this new practice, interprofessional placements in this case (MacLeod and Ajjawi 2020). A summary of the decision-making process is outlined in Table 1. At the initial stages broad families of theory that would be suitable were identified. As data collection and analysis procedure were established, this was refined to specific theories. As this was a multi-phase, multi-site research project, ethical approval was required at specific stages from different research ethics committees. Theoretically informed sampling helped ensure relevant groups not directly involved in interprofessional placements were included in applications for ethical approval. For example, the potential contribution of academic staff involved in interprofessional placement preparation modules were highlighted by 'neighbouring interactions' when IPP was viewed through the lens of complexity theory. If this had emerged during data collection it may not

have been be feasible to invite them to participate due ethical approval timelines and the voice of a relevant group may have been absent from the research.

[Insert Table 1 as half-page figure about here]

Subsequent activity involved developing theoretically informed, sensitive data collection tools for use in this case study - interview schedule and observation guide. A balance needed to be struck between remaining open to observing unanticipated phenomena during data collection and attending to pertinent factors specified by the theories selected. Examples of theoretically informed data collection tools are provided in Supplementary Material B. There were a limited number of studies which made explicit reference to how theory informed design of data collection tools. For example, Vestergaard and Nørgaard (2018, p. 186) stated that '*normative theory describes . . . desirable ideas and goals for the situation, and focus group questions concerned whether the preconditions for these goals theoretically were present in the process.*' During data collection we became aware of research by Agreli et al. (2019), utilising Normalization Process Theory to inform the design of an ethnographic observation tool and interview schedule. This led to review and refinement of data collection tools. To this end development of data collection tools was an iterative process. We initially developed a broad-based participant observation tool, which the first author used to gather pilot data. This data was used to guide author group discussions to extend and refine the participant observation guide and develop a context-sensitive interview schedule. Tools were initially designed without explicit reference to theory and trialled. Subsequently tools were reviewed through theoretical lenses, aligned to theoretical principles and amended in order to reflect relevant theoretical features. Therefore, this method can be said to be both inductive (data informed) and deductive (theoretically informed) (Wilson & Chaddha, 2009). This allowed for both contemporaneous observation logging related to theoretical features as well as retrospective data reflections through the theoretical lenses.

Although data analysis is in the early stages, it is anticipated that this process will reflect a similar approach to that of developing data collection tools, whereby data is initially analysed without explicit reference to theory and subsequently considered through theoretical lenses. Though it must be acknowledged that theoretical influences can never be suspended by the researcher (Kramer-Kile, 2012). It may also occur that during the process of data analysis some theories become less applicable in framing the results and are thus positioned less centrally while others become integral to understanding the data. Our experience so far suggests that individual reflection and group

discussion on theoretically informed data interpretations will be essential during data analysis.

Figure 2 summarises steps 1-4 from this section, as a guide to the process of theory selection and application.

[Insert Figure 2 as half page figure about here]

Discussion

Guidelines about how to identify, select and apply theory to research is poorly articulated for interprofessional researchers. In this paper we sought to illustrate the decision-making process regarding how theories were chosen and subsequently applied within the early stages of an ethnographic case study attending to interprofessional placements. Developing theoretically informed research requires the researcher to actively consider what theory can add at each stage (Bolander Laksov et al., 2017). Furthermore, application of theory is not a goal in itself as this does not enhance the research quality. Rather there should be a clear rationale for how theory will meaningfully contribute to answering the research question and enhance findings (Silverman, 2010).

Currently within interprofessional research, we cannot definitively state that research underpinned by theory leads to better practice and educational outcomes than research not applying specific theories. However, the experience of designing a theoretically informed case study led us to look at less obvious aspects of interprofessional placements. For example, considering interactions between non-human factors such as technology and humans through the lens of actor-network theory to understand how this influenced development. Applying theory can help researchers move from implicit assumptions about what works to thinking in a more nuanced and creative manner when designing and evaluating innovations (Lynch et al., 2018). Hence, it is contended that using theory can help answer questions about how and why interprofessional initiatives are or are not working, at a level not accessible in the absence of theory (O'Leary et al., 2019). Drawing on evidence from other fields there are signs that theory may enhance research quality. For example, within the field of health behaviour change, it appears that theoretically informed interventions are more successful than those without clear theoretical foundations (Noar & Zimmerman, 2005). Moreover, Hodges and Kuper (2012) extrapolated findings from psychotherapy research which implies it may be the process of meaningful theory application rather than the theory itself which leads to higher quality research.

Kurt Lewin in 1952 stated that *'there is nothing as practical as a good theory'* (Reeves & Hean, 2013). However, constructs such as 'good' may deter some researchers from engaging with theory, due to fears of not choosing the optimal theory. Having gone through the process of designing theoretically informed research, it is proposed that 'good' in this context is a relative term. A theory that is good for one research project may be wholly unsuitable for another. It is useful to think about theory in terms of matching a good theory to the right piece of research. Researchers are advised to illustrate why the chosen theory is 'good' for their research context by providing a robust rationale for the decisions taken (Hean et al., 2018).

As in this research, it may not be realistic or even desirable to expect that one theory can fully make sense of all aspects of a complex phenomenon (Clark, 2006). It is likely this is an issue of relevance for many qualitative researchers, who are often seeking to understand complex issues (Thirsk & Clark, 2017). Pawson and Tilley (1997) compared this type of research to trying to understand how clocks operate. The clock face does not reveal the hidden processes which cause the clock to work/not work, this requires an examination of the inner workings (Astbury & Leeuw, 2010). In the research context, theories represent the tools used to examine and understand the inner workings of the phenomenon of interest. A combination of theories may be required as opposed to just one single tool or theory. Theory triangulation, involving more than one theory, is an accepted method of adding rigour to qualitative research (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014). This also aligns with the assertions of Tsoukas (2017) that we may need to use theories creatively and in more complex ways to make sense of complex phenomena. Yet this requires researchers to think in a theoretically flexible manner (Kramer-Kile, 2012), that is not only applying constructs of a single theory but connecting congruent constructs from different theories which may seem daunting for researchers unfamiliar with theory. In this case the research team consisted of an early career researcher and two researchers with more extensive experience relating to theoretically grounded methodology. This enabled exploration of different ways of combining theories. Ultimately as the first author was most immersed in the data collection and analysis process, she made the final decision on the final theoretical framework, informed by collaborative consultation with co-authors. Based on our experience, it is suggested that the level of theoretical conceptualisation be tailored to what is required to answer the specific research question (Brown et al., 2019).

This is not to suggest theoretical principles be diluted or that relevant aspects be omitted, which Lor, Backonja, and Lauver (2017) rightly caution against. Rather the aim should be an illustrative description of the theoretical features pertinent to the present research and a clear explanation for why these features were salient and others were not. For this research there were certain features of complexity theory which were particularly relevant. For example, the principle of nested systems was highly pertinent, as there are many interrelated, but independent systems involved in interprofessional placements. This may reduce researcher reluctance to apply complex theories. Collaboration among the research team to explore, critique and evaluate goodness-of-fit of theories to the research question was a key feature in designing this theoretically informed case study (Lordly, Maclellan, Gingras, & Brady, 2012).

The prospective application of theories before and during the research process, as compared to retrospectively applying theory to research findings, highlighted the benefits of this approach. The process of developing data collection tools was more coherent and nuanced than when this was done in the absence of specified theories. One caveat to this approach is that researchers must ensure that data collection instruments do not become overly focused on fitting the theory, to the detriment of capturing the range of participant experiences, which is integral in qualitative research (Leeming, 2018). During the current research this was managed through a cyclical process of developing, reviewing and revising the data collection tools to achieve a culturally attuned balance.

There is no hard and fast formula for theory selection (Lynch et al., 2018). We found that choosing suitable theories was an iterative process and tailored to our specific context. Presently, there are some broad-based tools available to help researchers identify the theories that might be most appropriate for this research. For example, Hean, Craddock, Hammick, and Hammick (2012) propose a series of factors to consider in theory selection, including the research context and who it is being used by and used for. These can help ensure alignment between the research aim and the theories chosen (Hean et al., 2018). Based on our experiences it would seem reasonable that two researchers could choose two different and even divergent theories to underpin the same research. As compared to other aspects of research design, decisions about theory can feel less clear-cut and more intuitive (Hammond 2018). The priority for each researcher should be to provide readers with enough information to understand the decision-making process and judge for themselves the appropriateness of the theory.

More broadly speaking there is a need to create a healthcare research culture where the role of theory is better understood. One avenue through which to begin addressing this is to build theory-related content into researcher training. Currently, researcher training rarely provides input on the application of theory to research design (Lau and Traulsen 2017). Training to sensitise researchers, both at student and professional development levels, to the role of theory in research may be beneficial (Hean et al., 2018). It may also be useful to embed theory as a core criterion in reporting and quality appraisal tools. There are emerging tools to support researchers evaluate their use of theory. Daly et al. (2007) proposed a four-level hierarchy for assessing the strength of qualitative research based on degree of theoretical conceptualisation. These range from studies not informed at all by theory to those informed throughout by theory and with greater potential for transferability. Bradbury-Jones, Taylor, and Herber (2014) developed a five-stage typology to evaluate the integration of theory into research, ranging from absent to consistent application.

Applying this typology to the current research would allow the authors to support assertions that theories were consistently applied. These tools can also be utilised by editors and reviewers to facilitate more consistent consideration of theoretical integration during the peer-review process. Word limits are often cited as barriers to detailed articulation of the thinking informing decisions made during the research process. Including online supplementary material which is additional to word count and does not carry printing costs (Price, Schroter, Clarke, & McAneney, 2018), enables authors to provide evidence of theoretical deliberations. If there is an expectation to document and publish this aspect of the research process, it may improve the consistency with which theory is used.

Conclusions

There are long term benefits to cultivating a more theoretically informed research culture within interprofessional research. Consistent theory application can lead to a more coherent body of research (Willis et al., 2007). In turn research is then more likely to inform health and education practice and policy decisions, as the impact beyond local participant groups can be understood (Daly et al., 2007). The role of researchers is to carefully consider and apply appropriate theories throughout the research process, thus contributing to nuanced and impactful research findings.

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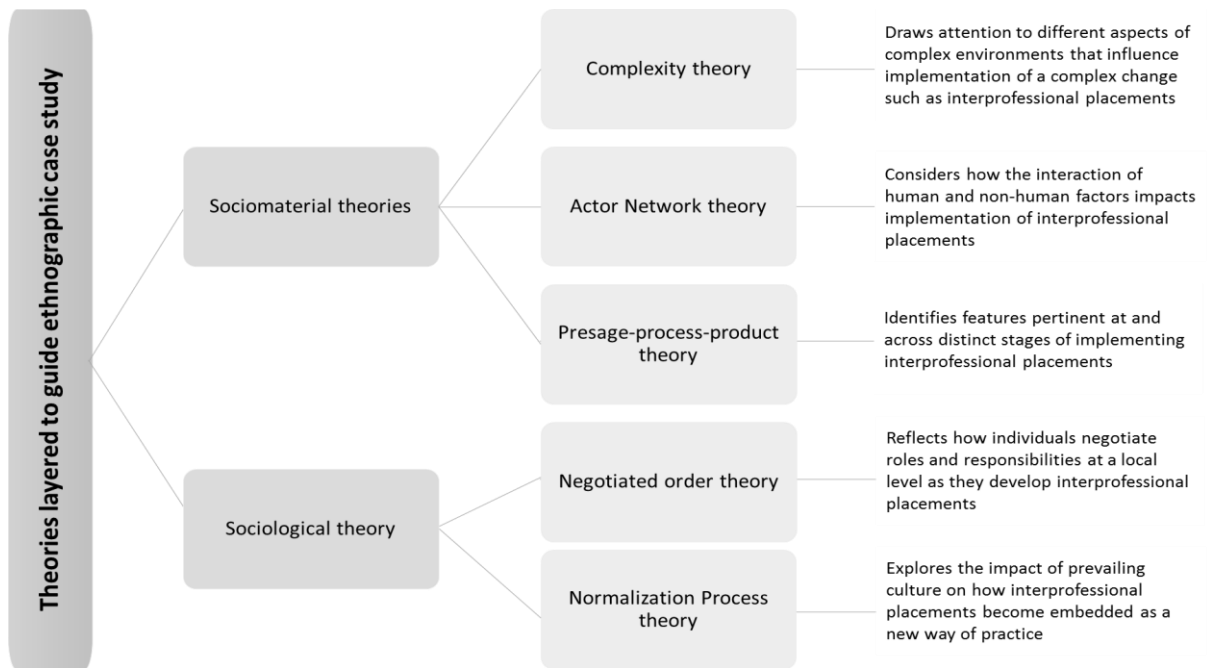


Figure 1: Theories applied to ethnographic case study on interprofessional placement

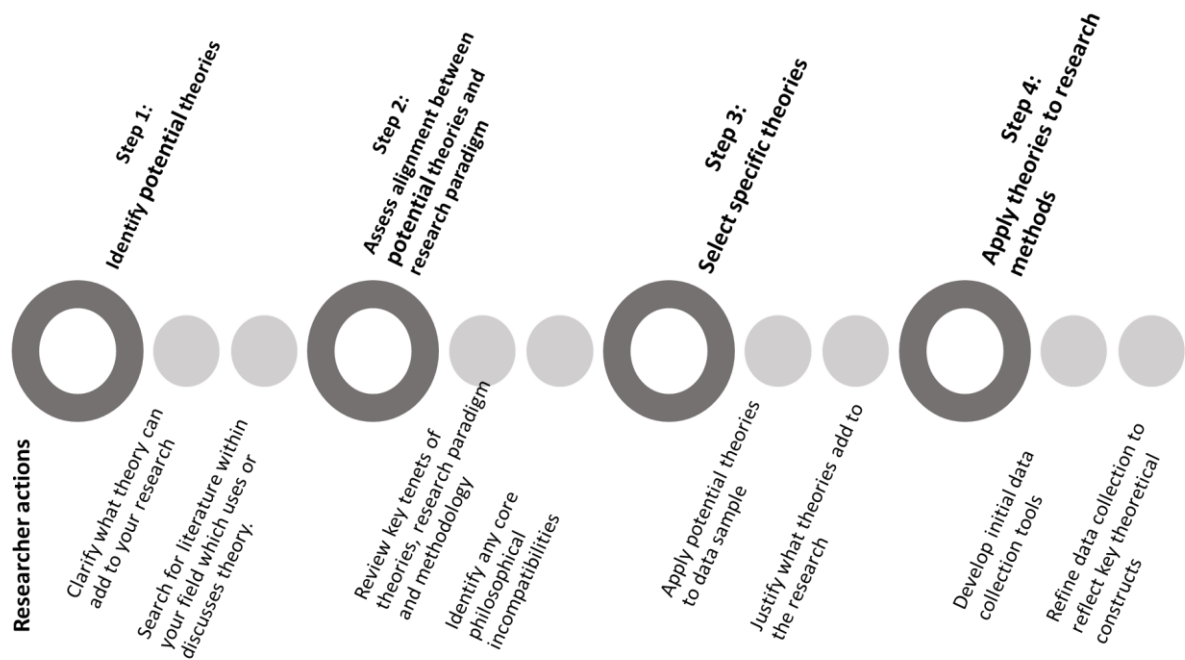


Figure 2: Theory selection and application process

Research Question: What are the experiences of those involved in implementing and sustaining interprofessional placements?				
	Paradigm	Methodology	Methods: Data collection	Methods: Sampling
Research Phase	Realism: Human experience is influenced by interactions and construction of experience as well as factors beyond human perception and observation (Danermark, Ekström, Jakobsen, & Karlsson, 2002)	Ethnographic case study: Immersion / lengthy engagement within the field of interest to develop in-depth socio-cultural understanding of the phenomenon (Parker-Jenkins, 2018; Yin, 2014)	<u>Document analysis</u> : placement handbooks, assessment forms, regulator documents <u>Participant observations</u> : meetings, trainings and activities relevant to interprofessional placement <u>Interviews</u> : stakeholders with experiences related to interprofessional placement	<u>Demographic sample</u> : educators and students directly involved in interprofessional placements <u>Theory informed sampling</u> : administrative staff, university management
Example of theoretical considerations and contributions	The premise of realism guided us to consider sociomaterial and sociological theories over theories of individual and group learning as we wanted to represent the impact of system and cultural factors	Aligns with sociomaterial and sociological perspective on viewing a phenomenon in relation to the context in which it occurs	<u>Negotiated order theory</u> : applied to observations of how participants engaged in negotiations around IPP <u>Presage-process-product theory</u> : facilitated demarcation of different stage of implementation and key drivers or inhibitors at different stages. <u>Actor network theory</u> : lens to analyse participant interaction and interpretations of documents and how documents informed participant practices. <u>Complexity theory</u> : interviews and observations analysed for conditions that were more or less helpful for implementing and sustaining interprofessional placement	Extended the invitation to participate to administrative, management and clinical staff as they have a key role in whether or not initiatives are sustained – Normalisation Process theory

Table 1: decision-making process regarding theory selection and application

Supplementary Material A: Alignment of research paradigm, theory and methodology

	Realism	Sociomaterial theories	Sociological theories	Ethnographic case studies
Key Features	Human experience is influenced by interactions and construction of experience as well as factors beyond human perception and observation (Danermark, Ekström, Jakobsen, & Karlsson, 2002)	Deep exploration of the complex and non-linear relationships between people, materials and socio-cultural factors (Goldszmidt, 2017)	Considers the impact of society and culture on the phenomenon of interest (Reeves 2016)	Immersion / lengthy engagement within field of interest to develop in-depth socio-cultural understanding of the phenomenon (Parker-Jenkins, 2018; Yin, 2014)

Supplementary Material B: Data collection tools

Theoretically informed observational template

Observational Summarisation				
<ul style="list-style-type: none"> • Describe the environment where the observation took place in as much detail as you can (e.g. time, space, lighting, sound) • Describe the participant(s) in as much detail as you can (e.g. appearance, body language, tone of voice, comfort level) • Describe the observation process (e.g. flow, depth of participant responses, rapport between observer and participant, change over the course of the observation). • Keywords or phrases that capture a key idea or interesting concept: • Key points from this observation • Relationship between what was observed and research question and aims 				
Consider which features of these theories are reflected in what is observed				
Complexity Theory				
Emergence & self-organising		More than sum of its parts		Nested systems
Internal diversity	Internal redundancy	Decentralized control	Neighbouring interactions	Enabling constraints
Actor Network Theory				
Human Factors			Non-human factors	
Negotiated Order Theory				
Cooperative		Conflictual		Non-negotiated boundary blurring

Presage-Process-Product			
Presage	Process	Product	
Normalization Process Theory			
Coherence	Cognitive Participation	Collective Action	Reflective Monitoring

Theoretically informed interview questions

Question	Theoretical influences and ordering of questions
What is your biggest driver for interprofessional placement	<ul style="list-style-type: none"> This question was informed by negotiated order theory as it taps into individual beliefs about interprofessional placement which will inform interactions/negotiations with others about interprofessional placement.
What would stop you setting up interprofessional placement?	<ul style="list-style-type: none"> This question was informed by complexity theory and consideration of conditions required for complex innovations.
What tools/ regulations/ guidelines do you use to inform your decisions about interprofessional placement?	<ul style="list-style-type: none"> This question was developed to open up discussion about non-human factors impacting interprofessional placement and was informed by actor network theory
How do you see interprofessional placement fitting into your role as ___?	<ul style="list-style-type: none"> Related to the cognitive participation principal on Normalization Process Theory