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Editorial by the Editor: Ann Brown

All the papers in this issue of EJBRM demonstrate that it is not just the research question that determines the choice of research method, but the context also exerts a major impact. Five papers introduce exciting and unusual ideas on research methods. Each has been designed to meet the demands of a specific research question in an unusual context (Vallack (2017); Wardale and Lord (2017); Mountford and Kessie (2017); Nzembayie (2017); van de Berg and Struwig (2017). The remaining two papers consider well known research methods but with differing objectives. Carmichael and Cunningham (2017) offer detailed guidance on the application of one variant of grounded theory and the other Strasser (2017) develops a taxonomy for the extraordinary range of variants of the Delphi Method that has been applied in Information Systems Research.

The paper by Vallack proposes a research method that can be used to develop the insights to be gained from an arts performance, into a robust, credible research result. A special issue on this subject (the Intuitive Researcher) is in preparation for the next issue of this journal.

We are all influenced by the spaces we inhabit, often in ways we do not consciously understand. Wardale and Lord present a research method, based on psychogeography, which is designed to capture and articulate these perceptions.

Evolving networks are the concern of Mountford and Kessie. They believe that to understand the working of an existing a network, we need to have researched the way it developed over time as a ‘whole network’. This poses a level of complexity that cannot be handled by traditional methods. Their paper explains how a combination of existing research methods can be used to work effectively with the whole network.

Nzembayie is working on the entrepreneurial process and proposes the use of Insider Action Research (IAR) as a promising method for researching the digital entrepreneurship process. The paper explains how this differs from Action research and why it is particularly appropriate in entrepreneurship studies.

According to Van de Berg and Struwig, Consensual Qualitative Research (CQR) can add value to the application of qualitative research methods through rigorous, structured research design. Analysis of qualitative data presents a challenge to most researchers. This method offers a step by step approach to data analysis based on achieving a consensus among the research team members. Hence it is appropriate for larger projects that involve more than one researcher. The authors consider it particularly relevant for management research and illustrate their ideas with an application to a research project on the policy on social media in managing reputation among South African Higher education Institutes.

The paper by Carmichael and Cunningham, on applying constructivist grounded theory, gives an impressive assessment of the various arguments in the literature about the decisions involved in applying this method. The paper focus is to obtain methodological insights into this research method through it’s application in their recent case work. This work sought to develop a theory of the coaching process based on research into the coaching experience of business executives. The case is explained in some detail with a wealth of insightful comments on what worked well in their research approach.

The Delphi method has a long and respected history as a technique for combining the knowledge of a group experts to produce results better than the sum of the individual contributions. Strasser reviews the main (thirteen) variants that have been used in IS research and develops a taxonomy for them. Researchers can use the taxonomy to help guide them on the decisions to be made when designing an application of this technique.
References


Theoretical Data Collection and Data Analysis with Gerunds in a Constructivist Grounded Theory Study

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Abstract: A constructivist grounded theory study into the experiences of coached executives was undertaken to develop theory about the coaching process. The analysis reported in this paper was undertaken in parallel with the analysis to resolve the main concern of the study; that of theorising the coaching process. The purpose of this complementary analysis was to capture adaptations of the standard processes used for data collection and data analysis that facilitated the theoretical direction taken in the research.

The starting point of the process is the careful, well-researched and purposive selection of the “right” first participant, and the end point is theoretical saturation of thematic categories with all variations within the category elucidated.

Selection of the first, key respondent was enabled through networking, and the interview data were in-vivo coded before being converted to gerunds using an additional intervening step in Saldana’s (2016) analytic process. This mechanism converted static descriptive codes to active process codes, enabling the extraction of implicit meanings which facilitated the emergence of theoretical propositions and linkages between codes and categories. Subsequent respondents were selected on a theoretical basis.

The role of the literature in achieving theoretical saturation was facilitated by adopting a reflexive stance and incorporating sensitising consultation of scholarly sources as part of the analytic process applied to each interview transcript in turn during the theoretical sampling process. The inclusion of the literature in this way facilitated the coding of the dimensions of and variations within each category.

Keywords: qualitative, methodology, saturation, sampling, interview, coding, gerund, data analysis, constructivist grounded theory

1. Introduction

A constructivist grounded theory (Charmaz, 2014) study into the experiences of coached executives was conducted to develop theory about the coaching process from the perspectives of the executives themselves. The analysis reported in this paper was undertaken in parallel with the analysis to resolve the main concern of the study; that of theorising the coaching process. The purpose of this complementary analysis was to obtain methodological insights into an area of research rich in debate; that of grounded theory. Coaching was described as a relatively young field as recently as 2014 (Cox, Bachkirova, & Clutterbuck, 2014), and is also considered one of the fastest growing human resource development techniques, both within organisations and in the field of consulting (Ciporen, 2015), which lends itself to grounded theory study.

2. Literature review

This section critiques the normative recommendations in the literature regarding the specific data collection strategies of theoretical sampling and analysis techniques using coding within the broader context of qualitative research and general principles of grounded theory.

2.1 What is theory?

A useful place to start is to examine some definitions of theory, and articulate the connection between data and theory, since those are essentially the building blocks of research. There are many definitions of theory, but some of the more relevant ones are as follows:

- “For our purposes we use a simple, general definition: theory is a statement of concepts and their interrelationships that shows how and/or why a phenomenon occurs” (Corley & Gioia, 2011 p.12).
• “A theory is a coherent and systematic ordering of ideas, concepts and models, with a purpose of constructing meaning to explain, to interpret, to shape practice” (Garrison, 2000 p.3).
• “A theory is a particular kind of representation of some phenomena . . . it comprises constructs, relationships among constructs, and a boundary within which the relationships among constructs hold” (Weber, 2003 p.vii).

A common theme amongst the definitions is that of concepts and/or constructs, and relationships between the concepts or constructs in order to provide an explanation of a phenomenon. It should be noted that it is “an explanation”, not “the” explanation. This is important because, much as quantitative researchers like to believe in an unequivocal reality (Creswell, 2013b), seldom is there 100% proof of this, and results are typically presented in terms of probabilities rather than absolutes; well illustrated by paraphrasing Mitchell (2009)’s explanation that, “you cannot predict events; you can only predict probabilities of events” (p.130). However, the concept of multiple realities sits more comfortably with qualitative researchers (Tracy, 2010), and theories proposed in qualitative research are presented as propositions, awaiting quantitative verification.

The fourth definition above includes the concept of a boundary within which the relationships can be explained. This boundary can be equated to context and the limits of variation within each concept or construct.

Kearney (2007), reinforced by Apramian, Cristancho, Watling, and Lingard (2017) however, cautions us that, “our postmodern awareness that the complexity of life can never fully be captured in any theory” (p.578). This statement subtly reinforces that knowledge is contextual, which is very much in line with the principles of grounded theory, and reminds us to account for context when investigating the variation within constructs.

As far as the relationship between data and theory is concerned, it worth recalling the words of Kant, cited in Gregor and Timmermann (2012), that, “theory without data is empty, and data without theory is sterile”. The connection between the two is clear and unambiguous, and an integral part of the grounded theory process. The earlier three statements by Handfield and Melnyk (1998) still stand firm; “without theory, it is impossible to make meaningful sense of empirically-generated data”, “without theory, empirical research merely becomes ‘data-dredging’ and, “empirical research is the most severe test of theory” (all on p.21).

Thus, as will be seen in the following sections, the process of taking segments of interview data and coding them through a progressive set of steps, results in explanations, theoretical propositions or assertions.

2.2 Sampling; theoretical and otherwise

Sampling in qualitative research is generally done non-randomly and often purposively (Boddy, 2016), meaning that individuals are selected because they are ‘fit for the purpose’ of answering questions about the particular field of study, ie they are “experts” in one way or another. Morse (2010 p238) pointed out that “qualitative research must be a biased activity” (emphasis added), which Rudestam and Newton (2015) explain that this is because, “qualitative researchers deliberately seek knowledgeable respondents who can contribute significantly to enriching the understanding of a phenomenon” (p123). Thus sampling is done in this way to gain insights from the most appropriate minds possible with which to propose theory or at least suggest theoretical propositions. Because qualitative sampling is sourcing a concentration of focused minds rather than seeking to generalise, the sample is generally a lot smaller (Boddy, 2016) than for quantitative research.

The two principle differentiating factors of grounded theory first proposed by Glaser and Strauss (1967, 1998, 2017) are that data collection and analysis happen simultaneously and iteratively, and that constant comparison of new data with the previously collected data takes place throughout. These two criteria have remained key principles of the method (Charmaz, 2014). The researcher collects data initially with a small, even single (Boddy, 2016), purposively selected sample. The data from these initial encounters are iteratively compared and coded before more data are collected or generated; the emerging theoretical ideas from the early analysis guides the selection of the next respondents, and the cycle of data collection and analysis is repeated. This theoretically guided data collection follows the initial purposively selected sample analysis, which makes it quite different to the more traditional qualitative research designs in which the researcher initially collects and then subsequently analyses their data (Creswell, 2013a; Egan, 2002).
As regards sample sizes, Guest et al (2006, p. 61) found seven sources that provided guidelines for these. These vary from six participants in Morse (1994, p. 225) to 20 – 35 participants in Kuzel (1992, p. 41). Grounded theorists have taken a range of positions on sample sizes, with some emphasising saturating concepts (Bowen, 2008) and others the number of comparison groups (Glaser & Strauss, 1965). It is also argued (Charmaz, 2014) that a very small sample can produce a study of lasting significance and the factors that impact on this would be the quality of the interviews and the depth of the analysis. The literature suggests that factors affecting sample size include:

- **Data saturation** (Bowen, 2008; Glaser & Holton, 2007; Mason, 2010; Strauss & Corbin, 1998; Thomson, 2011).
- The experience and expertise of the researcher in both interviewing and their subject area are key components in reducing the size of the sample and for reaching saturation (Glaser & Holton, 2007; Hoare, Mills, & Francis, 2012; Lee, Saunders, & Goulding, 2005; Roulston, 2016).
- Appropriately selected participants (Bryant, 2003; Glaser, 1978; Glaser & Holton, 2007; Rudestam & Newton, 2015)
- Multiple interviews with the same participants (Bowen, 2008; Morse, Barrett, Mayan, Olson, & Spiers, 2002)
- Theoretical sampling, ie concurrent, iterative data collection and analysis (Bowen, 2008; Davoudi, Nayeri, Raiesifar, Poortaghi, & Ahmadian, 2016; Glaser, 1978; Glaser & Holton, 2007)

Qualitative samples must be large enough to uncover meaningful data, but not be so large that much data become redundant (Bowen, 2008; Charmaz, 2014; Mason, 2010). Recently, Saunders and Townsend (2016)’s thorough evaluation of 798 articles revealed a range of 15 to 60 participants per study. While there are other factors that affect sample size in qualitative studies, researchers generally use saturation as a guiding principle during their data collection (Mason, 2010). Theoretical saturation occurs when no new “properties, dimensions, or relationships emerge during analysis” (Strauss & Corbin, 1998 p.143). The process of achieving theoretical saturation described by Rowlands, Waddell, and McKenna (2016) is a little different in that they quantitatively analysed completed interviews for contextual meaning using ©Leximancer software until theoretical saturation (including all the variations embedded in the dimensions, attributes and relationships) was achieved. This process, however, lacked the iterative “collect data, analyse data, theorise data, collect more data” cycle typical of theoretical sampling.

Glaser and Strauss (1965) originally described theoretical sampling as the process of data collection for generating theory, in which the analyst jointly collects, codes and analyses the data and decides what data to collect next and where to find them in order to develop the theory as it emerges. Beyond the decisions concerning the initial collection of data, further collection cannot be planned in advance of the emerging theory. Only as the researcher discovers or generates codes and tries to saturate them by theoretical sampling in comparison groups do the successive requirements for data collection emerge, which includes the categories that need to be sampled further and where and from whom to collect the data. In this way, the analyst can continually adjust the control of data collection to ensure the data's relevance to the emerging theory. This process of theoretical sampling remains a cornerstone of the grounded theory method (Corbin & Strauss, 2015; Coyne, 1997; Davoudi et al., 2016; Glaser & Holton, 2007; McCrae & Purssell, 2016). In summary, there is little agreement in the literature about what the ideal sample size is for qualitative studies. However, it is of value to remember that the very nature of qualitative research embraces multiple realities, and that an answer of “it depends . . .” is not inappropriate, as long as the factors on what ‘it’ depends are articulated.

### 2.3 Coding and variation

Coding is the process of assigning an interpretive label to concepts, ideas, constructs or themes that arise from the data (Saldaña, 2016). Saldaña (2016) lists no less than 40 different approaches to or ways of coding (pp. 291-298), which clearly cannot all be implemented in the average study. However, there is nothing to say that a series of rounds of coding could not be implemented, seeking different layers of meaning in the data, although research using such an elaborate approach has not been located. Saldaña’s list does, however, open analytical possibilities in triggering researcher awareness of possible theoretical approaches to analysing the data; less about what to look for and more about how to look.
For example, researchers typically start with ‘open’ or ‘initial’ coding, in which chunks of data are examined line-by-line and given a code consisting of a word or short phrase (Corbin & Strauss, 2015). They may employ the in vivo method of assigning codes using the respondents’ own words and language (Strauss, 1987). To add analytical depth, instead of merely using descriptive codes (or in addition to them), the researcher could apply a simple ‘what?’ ‘so what?’ ‘now what?’ reflection model (Carmichael, 2009) to the codes. In the first instance (what?), a descriptive code is fine for simply identifying ‘what’ is in the data. The next step is to ask ‘so what?’, seeking to code what the meaning of that data is, (within context), similar to what Saldana (2016, p.292) calls “concept coding”, then the third step is to answer ‘now what?’, considering the implications of the meaning of the data. This would result in multiple levels of coding, potentially adding nuance and analytical depth. Lipp (2007) had suggested that a micro-, meso-, macro- framework be used for reflection, focusing sequentially on the individual level, the organisational or project level and the societal level respectively. These are only two suggestions from many that would come to light through searching the academic literature using search terms such as “reflection models” or “analytical frameworks”.

Another analytical idea is to code with gerunds, very much favoured by Kathy Charmaz as she described in her conversation with Reiner Keller (Charmaz & Keller, 2016), explaining that the technique assisted the researcher to move forward analytically and identify actions and processes within the data. Saldana (2016) calls this “process coding”, and suggested that it include both observed action and conceptual action such as change, emergence and growth. Lewins, Taylor, and Gibbs (2010) add the notions of strategies, practices and adaptation to the inclusion of gerunds, so that the overall theme of process coding is one of passage through time.

Once initial coding is complete, focused coding (Saldana, 2016) is a typical next step, in which the researcher seeks to identify the codes that are related conceptually and those that are the most numerically frequent or dominant in some way. One of the criteria for Glaser’s core category is the repeated emergence of related theoretical codes (Glaser & Holton, 2007) from the data as the analysis proceeds, so it is logical to interpret that some counting is necessary, despite protestations that “qualitative researchers don’t count” (Morse, 2007 p.287). Focused coding does not consider the properties or attributes of codes, which is why the next step is often axial coding (Strauss & Corbin, 1990). In this process, relationships between the earlier codes are identified or postulated, so that categories can emerge (Draucker, Martsolf, Ross, & Rusk, 2007).

Constant comparison, one of the non-negotiables of grounded theory (Glaser & Holton, 2007; Shepherd & Suddaby, 2017) is operationalised during the process of coding, when each new item of empirical evidence, code or concept is compared to the already existing codes and concepts (Davoudi et al., 2016), looking for similarities, differences, patterns, relationships, refinements, definitions, dimensions, assumptions, and properties. It is then given the same code, a different code, or maybe a sub-code of an existing code, illustrating attributes, properties or magnitudes of that code.

Theoretical memo writing is undertaken as codes, concepts and constructs are identified and analysed (Charmaz, 2014; Corbin & Strauss, 1990), and takes place throughout the research process. Memos are a systematic way to capture theoretical ideas, implications, connections, new emerging questions and make the work concrete and manageable. The memos are the basis of the developing theory (Corbin & Strauss, 2015), and may contribute critically to the theorising, sampling, and subsequent phases of coding. Memos may also be written in relation to the literature, so that articles are treated in the same way as transcripts and coded along with the transcripts; ie theoretical sampling of the literature (Charmaz, 2017). This is a recently recognised approach to doing a literature review, that has emerged with increasing use of Computer Assisted Qualitative Data Analysis (CAQDAS) tools (Friese, 2014), such as Atlas.ti. This would imply that the concept of theoretical sampling has three, not two components; respondents, the codes that emerge from the data, and integration of concepts from the literature. Part of the value of memo-writing is to develop awareness of the researcher’s prejudices and to be open to data that opposes the researcher’s biases (McGhee, Marland, & Atkinson, 2007), facilitating researcher reflexivity.

The essence of coding in this context requires theoretical and methodological sensitivity on the part of the researcher in order to maximise the richness and depth that can be extracted from the data to guide the theory-building process.
2.4 The role of the literature in guiding the research

In much qualitative research, the interview guide is based on the conceptual framework derived from the literature review (Kvale & Brinkmann, 2009). However, this is not necessarily the case with grounded theory interviews, which, according to Glaser and Strauss (1967, 1998, 2017) in the original article in which they reported the discovery of grounded theory, need to gather data from respondents that is “uncontaminated” by existing theory. The reason for this was given as the need to allow the theory to emerge from the data collected, rather than be guided by previous literature. Glaser, staunchly supported by Holton (2007) was (1992), and still is (2016), quite adamant that researchers bracket out all previous knowledge on the topic they are researching, something earlier derided by Clarke, (2005 pp.13) as the absurdity of trying to be a “theoretical virgin”. Strauss came to realise that people cannot do that easily (Charmaz, 2017). He and Glaser parted ways, and Strauss’ future ideas were elaborated in books co-authored with Juliet Corbin (1990; 1998), where they proposed that grounded theory studies should be more structured than Glaser was happy with, and rather preferred that some literature guide the data collection process in a flexible way. Charmaz’ (2014, 2017) constructivist view is that a literature review can be done first if one’s stance is critical, reflective and grounded in reflexivity.

Other thoughts on the role of the literature review in grounded theory studies come from Dunne (2011), (Thornberg, 2012) and Nelson (2016). Dunne (2011) provides a thorough analysis of the evolution of the debates on the matter in the light of his own doctoral degree, and concludes that the insistence on total abstinence of literature consultation prior to data collection is disproportionately punitive to the process and quality of the resultant theory. In citing Dunne, Thornberg (2012) agrees with the principle of consulting the literature up front, pointing out that such flexibility respects researchers’ abilities to maintain an open-minded stance, such that they avoid being Procrustean in their analyses. He cautions researchers to remain critical, aware of their own assumptions and biases, theoretically sensitive, and thoughtfully aware of the purity of the raw data being processed. Nelson (2016) tackles the issue of the literature from the perspective of what he calls “conceptual depth” (p.6) in order to address the problematic issue of achieving saturation. He describes that conceptual sufficiency comes from there being a range of evidence for each concept, there are complex linkages between concepts, subtle elements are surfaced and highlighted, concepts are broadly applicable, and they resonate with the literature. Reading between the lines of Nelson’s article, it seems clear that not only does he consult the literature throughout the proposal development stage; he also consults it during the analytical process.

Since interviewing is one of the most commonly accepted methods of gathering qualitative data (Seidman, 2013), and constructivist grounded theory requires “rich” data; the richer and more detailed the data, the greater the conceptual density (Draucker et al., 2007), and the more nuanced the resulting theory. The participants in the research need to be able to speak freely, tell their stories and to develop their ideas in a reflective way. Charmaz (2008 p.164) developed the terminology ‘Intensive Interview’ which allows for the ebb and flow of dialogue in a conversational way. A number of authors (Charmaz, 2017; Dunne, 2011; Thornberg, 2012), either by implication or overtly, encourage engagement with the literature during the analysis and theoretical sampling process. The aspect of continuous engagement with the literature is not specifically mentioned in much of the work on theoretical sampling, so it is not always clear what authors’ stance on the matter is.

3. Methodology

The context of the research was that of coached executives in South African businesses, with the aim of developing a theory of the coaching process. The analysis reported in this paper was undertaken in parallel with the analysis of data to resolve the main concern of the study; that of theorising the coaching process. The purpose of this complementary analysis was to capture adaptations of the standard processes used for data collection and data analysis that facilitated the theoretical direction taken in the research.

The inclusion of the coaching contextualisation helps to give the framework and background to the research, so has been included here; Saldana (2016) has proposed a coding category called “attribute coding” to take care of these contextual factors, which could be described as study meta-data. These meta-data may contain explanatory variables to consider during analysis, though they may not necessarily be obvious at the beginning of the research.
The methodology was built on the constructivist grounded theory approach of Charmaz (2014). Companies (via their HR Directors, learning and development managers or talent managers) offering coaching to their executives were identified purposively (Roulston, 2016) and contacted to obtain permission to approach executives who had already been coached within their organisations. The main selection criterion was that executives had experienced coaching (regardless of who the coach was and regardless of industry).

The insights obtained from the literature about the iterative sequence of respondent selection, immediate coding of the interview and consultation with the literature were utilised. So, initial respondent selection was purposive (Charmaz, 2014; Glaser & Strauss, 1967, 1998, 2017; Rowlands et al., 2016), the interview data were analysed after each interview, and the literature was consulted at the same time as the interview was being coded. Theoretical memos were written throughout the process. This analysis was not only to develop the theory, but to revise the next interview guide (Davoudi et al., 2016) and to select the next respondent.

Thus, although the role of the literature review in guiding grounded theory interviews has been widely debated, particularly in terms of the differences between the major authors in the field, viz. early Glaser and Strauss (1967, 1998, 2017), later Strauss and Corbin (1998), and most recently Charmaz (2014), a hybrid model was adopted here. So the literature was neither ignored, nor was a comprehensive review conducted until after the research was complete. In this way, recent recommendations about literature inclusion were respected, and the pre-existing knowledge of the authors was acknowledged in a critical and reflective way. Eleven executives from seven organisations were interviewed.

The first part of the interview was kept broad and open-ended, asking questions such as, “Please tell me about your experience of being coached”, “what was the context of the coaching intervention?” and “please describe the relational aspects between you and your coach”. Probes were along the lines of, “… and what happened next?” and “what kinds of things did you reflect on . . .?”. The questions became more focused as insights developed, but each interview was unique in terms of the actual questions asked.

4. Results and Discussion

It is clear that sampling, coding and theory integration are deeply intertwined, and shifts in any one aspect result from, and in, shifts in the others in a dynamic way. The following sections identify and discuss the insights obtained from the study, and elaborate on overlapping factors that link the three areas discussed in this study, namely, sampling, coding and integration of existing theory.

4.1 Factors influencing sampling and data collection

A variety of factors influencing sampling and data collection emerged from the analysis. These were, careful selection of appropriate respondents, a narrow focus of the research question driving the research, interviewer expertise, and prolific analytical memo-writing.

4.1.1 Selection of appropriate respondents

When selecting appropriate participants (Strauss & Corbin, 1998), it quickly became evident that it was important to have a relevant network prior to and throughout the research, so that a pool of potential future respondents would come to mind as theoretical concepts emerged from the data. After each analytic iteration, the criteria for identifying the next respondent were defined; in fact, theory development proceeded weblike from the beginning, since there were several theoretical possibilities from each construct. The participants in this study were certainly familiar with and involved in the process and environment related to the study, points raised by McCurdy, Spradley, and Shandy (2004) as being important for maximising the quantum of data per respondent. The respondents were relatively homogenous, which also helped to reduce sample size (Guest et al., 2006).

4.1.2 Narrow focus of the research question

The initial scope and research questions were narrowed down through insights gained from two pilot interviews. It was clear that a broader scope required considerably more data (and interviews) and would become impractical and unwieldy (Egan, 2002; Strauss & Corbin, 1998; Thomson, 2011). In addition, some possible variables were excluded from the study, eg the cost and return on investment to the organisation, the qualifications of the coaches, and the performance of the executives before and after the coaching. The focus was only on the experiences of the coached executives.
4.1.3 Interviewer expertise

Expertise in the research area helped to facilitate a smaller sample size (Jette, Grover, & Keck, 2003). However, this was delicate to manage because of needing to remain reflexive about the role of the literature and existing theory base in informing the interview questions. In this regard, being experienced and knowledgeable in the academic aspects of coaching was something of a double-edged sword; in the words of Birks and Mills (2015), “. . .in reading the literature, there may be a fine line between enhancing [theoretical] sensitivity to developing concepts in your data and forcing your data into an existing category” (p 241).

The data indicated that the following characteristics were important both for effective coaching, and for effective interviewing; asking indirect questions (Partington, 2001), clarifying, reframing negative ideas, challenging assumptions, personalising the conversation, creating a safe space (psychological safety), being non-judgemental, equity between coach and executive / interviewer and interviewee, seeking both process and substance (Seidman, 2013), coupling observation with interviews, and identifying and mirroring patterns and themes (Lopez & Whitehead, 2013; Parfitt, 1996; Roulston, 2016). These characteristics affirm that caring skills (McLeod, 2011) seem to assist with interviewing in qualitative research. These skills are congruent with a high level of emotional intelligence and emotional resilience (Grant & Kinman, 2014) in the coach/interviewer. An advantage of these caring skills is that the interviewer was well able to capture the body language observations during the interviews, which supplemented and enriched the content of the conversation.

4.1.4 Memos

Memos are naturally reflexive, which is why Charmaz (2014, 2017) is so in favour of them. For example, one of the key insights obtained from the pilot interviews was the realisation that the initial questions were too leading. For example, the question, “would you describe your coach as directive or non-directive?” led to an either/or answer, with the participant choosing one of the options. Instead, in the revised interview guide, the concepts of direction / non-direction were rephrased to, “please describe the process of sharing information with your coach – what helped you share?” This lead to answers such as, “the coach asked or challenged my assumptions in a direct but non-judgemental way”, which allowed for more complex answers to emerge and factors such as non-judgemental attitude could be linked to the concept of directiveness.

Memos were also used actively to raise focused codes in conceptual categories and to surface patterns as described by Charmaz (2014). Since both interviewer and interviewee were active participants within the research process, the interview was a living dialogue. While the initial open-ended questions were designed by the interviewer, the subsequent directions were led by the participant’s concerns and revelations as long as they were relevant to the research question. Thus, it was important to capture these orientations and record the insights gained; analytical memos were of great value in constructing the final theoretical propositions for the study. For example, the following three excerpts from the interview with Executive 6,

“ . . .so reflection in preparing for the next action, or action taken and you will need to reflect. So I don’t know if it was ‘now we are going to do a reflection exercise’ or ‘this is specifically going to take us into reflection”, followed by “ . . . but sometimes it is far more integral, sometimes it is actually a shared session, a debrief afterwards”, then, “you have some like transcending or transforming sessions, where there is a huge amount of shift and if you happen to do that in three sessions I think it would give you the shift that you wanted and I think having a longer relationship helps embed that shift.”

Resulted in the following memo:

“Coaching is not a continuum, it is circular. An example is after action comes reflection and before reflection comes action. This person talks about deep levels of integration and how they were able to bring all of themselves into the coaching conversation. It seems that the magic in coaching lies in the transcendence and by this I mean the climbing beyond, the rising above.”

Which, in turn lead to the theoretical insight that people are complex, layered beings, and when they enter a growth process such as coaching, they bring with them all that complexity, which comes to bear on their holistic transformation.
4.2 The coding process

The first interview generated 56 codes, and there were no new codes after eight interviews (see Table 1). Participant eight was an experienced, trained coach as well as being an executive, and her contribution added 24 new codes. These initial codes were *in vivo* and descriptive.

Table 1: Number of new codes per transcript

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<th>Transcript Number</th>
<th>New Codes Allocated</th>
<th>Cumulative Codes</th>
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<td>1</td>
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<td>11</td>
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After the substantial input from respondent eight, all the previous transcripts were re-analysed to seek whether and how her insights had been overlooked in the previous transcripts. In fact, this activity of reanalysis each time a new code emerged proved fruitful and the additional richness and depth ultimately extracted from all of the transcripts added to the quality of the emergent theoretical propositions. This exercise extends previously published ideas of constant comparison, which seem to have mainly taken place in a forward direction only.

Initially, coding immediately with gerunds was attempted. These “-ing” words are constructed from verbs and used as nouns. Charmaz (2014, p. 111) prefers this method because it “moves beyond concrete statements by focusing on actions rather than themes”, curbing making premature conceptual leaps before sufficient analysis was done.

However, subsequent to this approach, it was decided to code sequentially, ie, first descriptively, then with gerunds (Davoudi et al., 2016; Saldaña, 2016), which yielded far richer results. This can be seen in the following two figures using Saldana’s (2016, p.14) original diagram entitled “Streamlined-codes-to-theory process” in Figure 1 as the basis for the analysis in Figure 2.
Figure 1: Saldana’s (2016, p.14) streamlined codes-to-theory model for qualitative enquiry

Figure 1 illustrates the step-by-step process from data (interview transcripts) being coded (with sub-codes as necessary), then the codes being combined into groups with similar attributes (called axial coding by Strauss and Corbin in 1998); these groups are called categories, which may also have sub-categories. The categories are combined into themes, which are then further abstracted into theories, assertions or theoretical propositions.

Using the development of the identification of client readiness, a key theoretical component of the study outcome, Figure 2 illustrates how the gerunds were incorporated into the Figure 1 process.
Figure 2: Incorporation of gerund coding into the analytic process based on the study data

Two transcript segments were selected for the illustration of the process described here, and these appear in the text boxes on the left side of Figure 2, which correspond to the left hand box in Figure 1. The initial, descriptive, in vivo codes were extracted from the interviews as illustrated in the text boxes to the right of the transcripts, under the column heading “codes” in Figure 2. At this point, the initial codes were converted to gerunds, under the heading “gerund codes” in Figure 2; this step was not part of Saldana’s (2016) process in Figure 1, and represents an additional analytical step not specifically articulated in the literature. The coloured arrows indicate how the gerund codes were grouped into categories, under the “categories” heading in Figure 2. Thus, using green arrows, the gerund codes of “reflecting”, “deciding”, “supporting” and “facilitating” were grouped into a category labelled “processing”. It seemed clear that sub-categories for “processing” could be “internal”, to include both “reflecting” and “deciding”, and “external” which would encompass “supporting” and “facilitating”. The internal processes are undertaken by the coachee executive, and the external processes by the coach. The sub-categories have not been included in Figure 2 for concern that the figure may become too crowded.

For completion of the explanation of Figure 2, the categories were combined into themes on the right hand side of the diagram, which were, “the whole complex integrated person”, “the journey” and “the higher person”. These fall into place as a theoretical proposition (Davoudi et al., 2016) suggesting that a coaching client as a whole complex person, begins the coaching journey and, through facilitated support, reflects and makes decisions, thereby crossing thresholds and transitions into a developed, more insightful “higher” person afterwards.

This pathway seen in Figure 2 also nicely illustrates the transition from empirical data to theoretical concepts. This stepwise process is not usually clear, and definitions of theory do not always make it easy to bridge the divide, although the examples given in the literature review do illustrate the broad idea of theory being an explanatory statement about the relationships between concepts or constructs.
It should be noted that at the gerund stage, the links to the original transcripts are broken, and categories are built from gerund codes from across different transcripts. It is by this mechanism that the attributes of and variations within the categories emerge (Corbin & Strauss, 1990); and when no new attributes emerge, saturation is considered to be present.

4.3 Saturation and variation

Theoretical propositions emerged through the coding process; as described in the previous section. Care was taken to extract detail from the transcriptions relating to the attributes of each concept, and identify explanatory relationships between those concepts. In addition, sufficient detail was incorporated into each category to make it more likely that it could “overcome changing situations” (da Silva, da Silva, Valadares, Silva, & Leite, 2015 cited in Davoudi (2016)), and demonstrate theoretical saturation, ie when theoretical density and conceptual consistency were stable with further analysis.

For example, in analysing the data leading to the identification of the core category of “client readiness” (Figure 3), the dimension of “time” emerged as important in relation to barriers and enablers of coaching. There were different aspects of time: finding the time, the timing being right, time duration of the sessions, the scheduling and frequency of the sessions. These aspects have been specified in the centre arrow of the diagrammatic representation in Figure 3.

Figure 3: The path to client readiness developed from the data

In terms of finding the time for a coaching session; there appeared to be a challenge for many people. Executive 5 said that, “just finding the time to go to it was the main thing. An hour’s session is two hours because you have to make a plan to get there and get back...so it becomes a time constraint.” Executive 1 spoke about how challenging it was to find an appropriate time in the diary. Executive 12 shared the story of how one of her colleagues changed coaches as the first coach he had chosen was so busy that he could not find appropriate time slots, but the second coach understood his time constraints and met him at 7.00 am,
which enabled him to get the coaching into his diary. Rigidity in terms of timing was also an issue for one executive who preferred a fluid arrangement in terms of setting up coaching as needed, rather than prescribed set sessions. The flexibility of diary management was important.

For some respondents, it was more about it being the right time to have coaching; Executive 2 spoke about timing: “I found it very difficult in that period of time to try and take action. It just was not the right time ... There was so much pressure inside the organisation, my mind wasn’t allowing anything else to change.”

Others believed the timing was right for them; Executive 3 stated, “I think it came just at the right time, it was just what I needed to give me the jumpstart again.” Others agreed, with one describing how his coaching happened as he was promoted, and another as she was reflecting on her career goals. Executive 12 said, “I really think you get the best out of coaching when you have an issue, when there is something you really want to focus on.” While the comment about having an issue does not directly relate to timing, it appears to be relevant to the construct “right time for coaching”.

Transitions also seemed to be a key ‘right time’ for coaching. A transition could be a new job role, a promotion or a new project. Executive 6 said she had, “used coaching consciously or unconsciously at a transitional phase of my career”.

The other aspect of time that came through was that having the sessions over a period of time was helpful but simultaneously it was sometimes difficult to do any “homework” between sessions. Executive 4 stated, “I never did any of the exercises, I was useless with that. I would try for a week or whatever and it is just too time consuming, or we are just too busy or whatever.” Executive 3 said, “Because the process was continuing, because it was over a period of time it almost took a different shape in that it now supported me in my new environment, where I also had very different challenges again, so that was quite beneficial.”

The coaching location was also identified as a component of the time dimension, in that one of the respondents was grateful for the fact that she needed to travel to her coach, because, “I felt that I was not in the right frame of mind when I left to go to my coaching session. I had a gruelling and stressful day at the office, resulting in me staying longer than planned before setting out for my session. However, despite leaving the office ‘later’ I still had sufficient time to get to my appointment” and the travel time enabled her to reflect in preparation for her session.

5. Conclusion

The definitions of theory given in the introduction to this paper highlight the requirement for an explanation of a phenomenon in terms of the relationships between the concepts or constructs that make up the phenomenon, within contextual boundaries. The process for development of grounded theory aims to achieve exactly this, and the insights obtained in this study can facilitate such theory development. The link between data and theory is made explicit through the coding process, and the extension of Saldana’s (2016) model in Figure 1 with explicit inclusion of the gerund coding step, which facilitates moving beyond the rather static initial codes to active process codes, rendering categories and themes more visible, seen in Figure 2.

An additional step in the typical theoretical sampling process is suggested; that of reflexively consulting the literature within the constant comparison phase of analysis. This would mean analysing the first interview to extract initial codes, converting these to gerund codes, and then consulting the literature using the gerund codes as key terms. After that, propose possible relationships between the codes, moving iteratively between codes and categories. During this process, incorporate appropriate interview questions into the revised interview guide for the next carefully selected, theoretically-relevant respondent. With subsequent interviews, identification and fleshing out of the dimensions making up the categories is carried out.

Other factors influencing the data gathering process included having a narrowly-defined research question, being particularly careful in selecting the first participant, and the interviewing skills of the interviewer. Selection of the first participant needs to involve thorough research into the criteria for selection of the individual to ensure that they do indeed represent an expert source of knowledge about the substantive area of the study and can make a substantial contribution to the developing theory. Good interviewing skills, such
as those seen in the caring professions, enabled the extraction of richer, thicker data, and also reduced the size of the required sample.

This is the first time that we tried these techniques, and they certainly made the research process more interesting for us. We felt more engaged through the consultation of the literature in the way that we did it, although it did extend the time taken between interviews. This may reduce as we become more practiced in and reﬁne the techniques. The gerund coding step simply seemed to make the categories pop out, and the themes illustrated in Figure 2 just fell into place; we do not believe this would have happened without the gerund coding step, and look forward to hearing further adaptations of the method.

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Towards a More Holistic Understanding of Whole Organizational Networks: Anthropological Approaches in Evolving Markets

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Abstract: As markets become increasingly complex it is more and more important that we understand their underlying market networks. While much research has been conducted into the inter-relationships and impacts between the firm and the network, less attention has been paid to the study of the whole network itself. Understanding the origins, structures, and potential futures of whole market networks is vital to the understanding of whole markets. This is particularly the case in light of the multiplicity of societal and institutional conditions attached to an increasingly globalized economy. The insertion of technology into incumbent markets such as finance or healthcare causes market and network evolutions that firms must understand if they are to navigate them safely. Traditional business research methods are, however, often locked to the firm perspective through case study approaches, or quantitative network analyses. Despite some recent methods that take a more situated, biographical approach, a bird’s eye view of the whole network remains elusive. Anthropological methods offer assistance – both in making sense of the evolution of the network within the market context, and in understanding the intricacies of such networks. Unfortunately, the concept of network analysis remains disconnected across disciplines apart from some exceptions such as Berthod, Grothe-Hammer and Sydow’s (2016) combining of social network analysis with ethnographic research methods to produce ‘Network Ethnographies.’ We build on that approach, combining market network research methods with ethnographic research methods, illustrated through case examples from our research in the connected health domain. We illustrate ethnography’s potential for in-depth capture of network detail, showing how ethnographic methods can be used to understand each player’s position and function within that system, as well as reflecting the life and culture of the whole network.

Keywords: whole networks, inter-organizational networks, evolving markets, connected health, network ethnography, anthropological research methods.

1. Introduction

This paper stems from research conducted by the first author that sought to understand the evolution of inter-organizational networks in an evolving market, that of connected health (sometimes referred to as eHealth). The field of healthcare is struggling to respond to an unprecedented exogenous shock. Demographic changes in the form of an increasingly ageing population, coupled with resource constraints as previously fatal conditions become increasingly chronic, are placing crippling pressure on healthcare resources. One solution to this challenge is being sought through the integration of healthcare organizations and systems, aided by the application of appropriate technologies (Mountford et al, 2017). Resulting care model and associated business model changes are having evolutionary effects on organizational networks within the market. Traditional methods for the study of organizational networks relied on the researcher being able to observe and track dyadic relationships between identifiable market actors. This approach proved to be impossible, however, in connected health markets where the actors within the field were in constant flux. Connected health markets are currently characterized by the arrival of multiple types of new players. Multi-national technology companies such as Apple and Google, more powerful patient representative organizations, broker organizations, new government agencies and others are entering the fray. They join existing players in the form of healthcare provider and payer organizations who are also in a state of change that includes the consolidation, elevation or elimination of existing organizations. Turning to anthropology offered a different access point to the understanding of this evolving network. This paper aims to bring the reader along the journey taken by the first author to understand how traditional market studies approaches to the study of organizational networks could be combined with anthropological approaches, and in particular ethnographic approaches, to gain a more holistic understanding of the evolving network.

Why is it important to understand the evolving network in the process of evolution? Existing methods allow us to access the network post hoc - is this not good enough? Our concern is that retro-active views of organizational networks may fail to capture and appreciate the decisions and inflexion points that made the network what it is. They may offer a superficial, point-in-time view of the network rather than the layered
excavation required to unearth the preceding versions and understand why elements of those died or thrived.

We live in an increasingly networked world – technologically (e.g. Giustiniano and Bolici, 2012), internationally (e.g. Fortwengel and Jackson, 2016) and in terms of the design and delivery of market offerings (e.g. Camarinha-Matos et al, 2009). For organizations, policy makers and public service providers, understanding how to shape and create particular kinds of organizational networks may allow them to in turn shape markets that are more efficient, effective or egalitarian. Methods that allow us to gain these insights and understandings can only add to our ability as researchers to give more complete information to those who seek to effect such change.

Network researchers seek to unravel the puzzle of the organizational network using a variety of methodological approaches and taking a range of different perspectives. There are those who seek to understand the place of the organization in the network, those who focus on the impact of the network on the organization, and those that set out to elucidate the impact an organization can have on a network. This paper addresses a fourth category of network research – that concerned with ‘whole networks’ (Kilduff & Tsai, 2003) (see Figure 1, and Provan, Fish and Sydow, 2007 for a review of these four types of network research). Methodological issues have contributed to such whole networks being a category of network research that is “frequently discussed but seldom empirically studied”. These methodological challenges include the scale of the unit of analysis (the network can consist of 30-50 organizations or more), the issue of network bounding (when seeking to understand the whole of the network it is difficult to know where to stop including organizations), and the need for longer analysis periods (to understand the whole network requires understanding its evolution over time) (Provan, Fish and Sydow, 2007, p. 480). Other methodological issues are not confined to the study of whole networks but are nevertheless exacerbated in that context. Easton (1995), for example, surfaces issues around the connectedness of networks, and the problems of representativeness and choice of sampling unit that it creates. Likewise, Halinen and Tornroos (2005) distinguish four major challenges of network case research including problems of boundaries, complexity, time, and case comparisons. The latter authors ultimately confess that: “In choosing an appropriate theoretical perspective for the study, the researcher always loses something of a network as real-life system. This is probably, however, the only way to handle the complexity in research” (Halinen and Tornroos, 2005, p.1287).

This paper focuses on the evolving market, and therefore the evolving market network. We posit that in such an emergent context, the reality of the market is largely constructed by each actor for themselves based on their network positions, experiences, and beliefs around the market’s future paths and potential. Reality in this context is subjective, dependent on perspective, and can only be truly understood through in-depth qualitative approaches which “elucidate and explain complexity” (Neergaard, 2007, p. 256). Given the dynamic and emergent nature of the context under study, methodological approaches should capture and reflect this dynamism to “understand and represent the experiences and actions of people as they engage and live through situations” (Elliot, Fisher, and Rennie, 1999). This philosophy leads us to focus on naturalistic data gathered through actors’ everyday settings and activities, and research methodologies that can provide a deep insight into such a phenomenon. As a result, we turn to ethnographic research methods to help understand this concept of the whole network.

Figure 1: A typology of network research, Adapted from Provan, Fish, and Sydow, 2007
We respond to the methodological gap in whole network studies, offering a methodology (and associated methods) that seeks to measure more of the network reality, through the complexity-acknowledging, qualitative approaches of anthropology’s ethnographic methodology. We encourage network researchers to acknowledge that, although a researcher cannot measure everything, this is a “statement about research design, not a statement about reality” (Padgett and Powell, 2012, p.11).

In the next section we review and discuss current methodological approaches in market network research. We then surface any remaining methodological gaps including the identification of the network boundary; the sourcing of data and identification of informants, organizations and network nodes; and the challenge of dealing with the multiple levels inherent in network research. We go on to investigate how anthropological methods may offer solutions to filling some of those gaps. Finally we discuss how these approaches may impact future research in the market studies arena and further afield and suggest an agenda for future network research employing such methods.

2. Current methodological approaches in market network research

Bitektine and Miller (2015) offer a model of organizational research that consists of three main inputs: the theoretical framework, legitimate research methods, and available empirical data. The theoretical framework is offered, within this model, as a determinant of the scope of relevant research questions that can be asked in the context of a given research school or paradigm. Legitimate research methods are those that are mandated by the researcher community to which the researcher belongs, or wishes to belong, and are linked to the chosen paradigm. We will discuss existing methods using these three lenses seeking to provide an illustrative rather than exhaustive overview of the current state of play with regard to inter-organizational network research methods in relation to the understanding of whole networks.

2.1 Theoretical frameworks

Theoretical frameworks in the area of organizational network research have remained largely locked to the firm perspective (Provan, Fish, and Sydow, 2007). The Industrial Marketing and Purchasing Group has developed detailed theoretical models surrounding business to business relationships, underpinned by the ARA (Actors, Resources, and Activities) model (Hakansson and Johansson, 1992). This approach conceptualises business to business relationships in terms of Actor bonds, Resource ties, and Activity links. However, something is missing in the translation of such theoretical models to practical application. A search of the literature suggests that “rather few studies explicitly use either of the models to provide explanations of events” (Lenney and Easton, 2009:554). Lenney and Easton seek to address this gap through the addition of the concept of commitments, agreements made between actors whether these be specific or general, operational or strategic. In the nascent networks that we seek to investigate, however, such clearly stated commitments are conspicuous by their absence.

2.2 Legitimate research methods

Given that inter-organizational network theoretical perspectives remain firm-centred, so too do the research methods that are considered legitimate in the pursuit of answering the questions that remain within such schools of thought. Case study methods (Yin, 2003) are therefore popular and seminal articles, such as those by Eisenhardt (1989) and Perry (1998), aim to elucidate case study methods specific to the marketing and business discipline. While certainly achieving this goal, they have made little impact on issues faced by network researchers (Halinen and Tornroos, 2005). More recent methods have begun to move beyond the single site study to a more biographical approach (Williams and Pollock, 2012). However, achieving a holistic, bird’s eye view of this concept of the whole network is still challenging. Organizational researchers have recognised the increasing popularity of markets (Ahrne, Aspers, and Brünsson, 2015), the increasing complexity of market environments (Child and Rodrigues, 2011) and the rise of network responses to these challenges (Achrol, 1997).

2.3 Available empirical data

In seeking to make robust contributions in these areas, researchers have employed centring concepts such as the “focal organization”, “focal technology”, and “critical events.” Such methods involve the identification of a focal point in the research. We contend that, in the emergent network environment, this approach limits the researcher’s understanding to a point where findings and conclusions become difficult to apply in any whole-market context. Quantitative approaches to network analysis are well established and detailed, at both...
individual, (Fernandez and Weinberg, 1997; Seidel, Polzer, and Stewart, 2000) and organizational levels (Ahuja 2000; Stuart, Hoang, and Hybels, 1999). Numbers, however, typically define either positions or amounts – something it is difficult to do with accuracy or credibility in this emergent, holistic context. To represent a network, we need to know how to bound it, its constituents, who they connect to and how connections form and change. How do we identify the organizations within the nodes of the network? Do we focus on those organizations that are active participants within the network and understand its relationships and activities? Or do we look to organizations that sit on the edge or outside the network when we would expect to see them within. Can we learn more from understanding why they do not engage? To understand the network, the node or the organization, we often need to speak to the individual. How do we decide which individuals to include? Do we include network-facing individuals or those who see both sides of the network?

3. Remaining challenges and the promise of ethnography

There are challenges that remain in getting to grips with the whole network, long after we have employed the methodological might of existing scholarship. These are best surfaced and discussed through the use of an illustrative case study. We therefore, reference our research in the area of connected health. We identify some of the more striking outstanding practical questions that we encountered in our research in the Connected Health domain, combine these with the challenges raised in the literature discussed above, and group and define whole networks research challenges in a practice-based fashion. We focus on operational decisions that must be made by the individual researcher, discuss existing guidance in dealing with such questions, surface remaining methodological gaps, and investigate how ethnographic approaches might assist. To explain connected health, we must first describe the changing field of healthcare. The population over 60 is expected to increase from 287 million in 2013 to 417m in 2050 to 440m in 2100 (UN, 2017). As people live longer, associated healthcare costs will increase to unsustainable levels. Current health and social care systems are not equipped for an epidemic of age-related illnesses and injuries. Public health care expenditure in the EU27 is projected to increase from 7.1% of GDP in 2010 to 8.4% in 2060 (European Commission, 2012). Fortunately, rapidly advancing technology capabilities and increasing societal digital literacy provide an opportunity to lessen the burden of rising costs by aggregating and sharing healthcare information. Technology in the home and community can gather continuous health-related data (e.g. activity and sleep), and increasing capabilities in communications and analytics give a more complete picture of health in ways previously not possible. Advances in wearable sensing devices, mobile computing technologies, and cloud services further diminish technical barriers to progress in this area. Connected Health combines these state-of-the-art technologies, tools, methodologies, and analytics to create a new health management model by connecting people and actionable information in a health care system that gathers, links, interprets, and consolidates information from various sources. Patients are the centre of this health management model, accessing and controlling their own healthcare information to make informed decisions about their own care and treatment. Faster, more accurate communication between GPs, hospitals, allied healthcare, and other stakeholders means that clinicians can make contextual decisions and communicate health and treatment options to patients. Connected Health creates an environment where patients are treated in the best location by the best practitioner using the most relevant and efficient methods saving money and lives while ensuring a better quality of life during and post-treatment (Caulfield and Donnelly, 2013).

Connected health requires changes in market actors, organizational links (as patient and information flows change), reimbursement and payment mechanisms, and institutional norms such as medical professionalism (Battilana and Casciaro, 2012). Such changes disrupt existing market networks and demand new ones. It is in this context that we go on to discuss the methodological challenges faced in seeking to understand these new and evolving networks.

3.1 Dealing with multiple levels

The study of market networks traditionally deals with at least four levels of measurement and analysis: market, network, organization, and individual (Figure 2). Organisations and networks may, of course, have numerous layers embedded within them. In the following sections, we will discuss network bounding and data sourcing in such contexts. For the moment, however, we focus on how we can theorize and measure at the correct levels ensuring a robustness that accounts for field level. Existing research practice recognizes that level effects mean factors may impact at more than one level. It is also possible to translate between levels - operationalizing a construct at a level is not the same as measuring the construct’s variables at that level. It is often necessary, or preferable, to measure at one level and aggregate to another (Bollen and Lennox, 1991).
For example, in order to measure organizational involvement in a market network we can look to MOUs and partnership agreements at the organizational level, or we may interview informants, gathering data at the individual level which will be aggregated at the organizational level. There are numerous ways we can then complete the aggregation process, as captured within Chan’s (1998) typology of compilation models. The theories that we wish to build, however, concern the whole network and so should be built at the meso level. And while it is possible to operationalise whole network constructs at micro and organizational levels, it is difficult to do so in a robust and complete fashion.

Figure 2: Levels in market network research

Provan and colleagues offer guidance in respect of whole networks, suggesting that we include “only those organisations that interact with one another to achieve a common purpose” (Provan, Fish, and Sydow, 2007, p.482). In the nascent market network, however, such common purpose is absent. The process of coming to that common view is the very phenomenon we wish to study. While such approaches have added tremendous methodological clarity to the understanding of networks, they are difficult to apply to the study of network emergence in a nascent market. When we use ethnography to holistically interpret the structure of such layers and their inter-relationships we should allow the rigour of such established methodologies to inform our processes. Nevertheless, anthropology releases us to some extent from the theoretical straitjacket of more prescriptive approaches.

Anthropologists understand that communities are “messy,” as Heather Zempel (2012) has stated. Thus, it is difficult to identify where networks begin and end, and who belongs inside and outside of these “boundaries” (Hannerz, 1992). Whatever level we aim to build theory at, the ethnographer is forced to begin engagement with the network at the individual level (Pollard 2009; Schieffelin 2005; Wolcott, 1999). The unveiling of the connections between network nodes can only be achieved by working up through the levels. The researcher, as ethnographer, enters the environment as an individual and interacts with other individuals. It is only over time, they can understand the interconnectedness of the nodes and the structure of the networks. Conducting such participant observation requires the dedication of time and an immense amount of planning (Giurchescu, 1999). Nevertheless, to attain a thorough view of the whole network it is imperative the researcher knows the community being studied.

In our research within the connected health field, we found that through individual interviews we built a picture of an organization’s role in, and attitude towards, Irish connected health organizational networks. Understanding both individual and organizational roles and attitudes allowed us a better understanding of the whole networks involved. An initial attempt to access an understanding of the whole network at the whole network level through observations of network events proved useful but ultimately lacking in the level of detail required to fully understand the network and build relevant theory. For example, it was the understanding gained at an individual level that allowed us to build a theory of partnered governance approaches to connected health networks at a whole network level as we improved our understanding of the respective roles of public and private organizational actors within such networks.

3.2 The network boundary

To robustly theorize a network, we must first map out its boundaries (Laumann, Marsden and Prensky, 1992). Identifying the extent and boundaries for any research study is strongly linked to the generalizability of the
study. Analysing distinct, formal networks is simple as membership is clear. In quantitative analyses, clear approaches (and software programs) exist to guide research and sample selection (see, for example Chung-Wen, Ruehli, and Brennan, as early as 1975). Connection and flow measures used by network researchers have included information, materials, financial resources, services and social support (Provan, Fish, and Sydow, 2007).

Investigating less formal but established market networks still benefits from guidance throughout the literature. For example, Gebauer, Paiola, and Saccani (2013), select firms based on industry, and type of products manufactured, while Moller and Rajala (2007) identify the network based on the “underlying system through which it produces value” (Moller and Rajala, 2007, p. 898). Barabasi’s (2002) classification of networks into centralized, decentralized, and distributed, articulates levels of connectedness, but still relies on the identification of ‘hub firms’ and ‘ties.’ Within existing markets, we can identify groups of suppliers, purchasers, consumers, payers, influencers etc., building a picture of the network and its boundaries. The methodological gap becomes evident when we look to a nascent market where the membership of these categories is uncertain.

As we are primarily interested in understanding and elucidating elements of the evolving connected health market, the research design challenges that form the basis of this paper relate to descriptive studies rather than those that are experimental or quasi-experimental (Bickman and Rog, 2009). In the nascent connected health market we are as yet uncertain who the suppliers and payers will be (Lhachimi and Siegrist, 2015). Traditional suppliers such as hospitals and primary care physicians, vie with technological giants such as Apple and Google (Das, 2014). Insurers and governments have traditionally borne the brunt of healthcare payments, but increasing predictive ability may change the face of health insurance (Joly et al., 2014), while privatisation might combat the accelerating healthcare costs of an ageing demographic (Maarse, 2006). Like Easton, and Halinen and Tornroos, we therefore experienced difficulty bounding the network under study. In a study of the New York connected health market network, the first author asked 29 informants, whether there was such a thing as an “eHealth market.” Responses varied from positive – “Of course, that’s what we do”; to negative – “It’s all healthcare” to confused – “what do you mean by eHealth?” Networks are inherently about connectedness, making it difficult to draw the line between network and context. The network researcher faces the dilemma of trying to comprehend who belongs inside and outside the network.

Ethnographic research into nascent communities may guide our understanding of how to bound such networks (Heath, Fuller, and Johnston, 2009). Within anthropology, ethnographers typically spend time with people to develop an understanding of the minute aspects of their life (Whitehead, 2005). Ethnographic research involves the ethnographer immersing themselves into the physical community studied through Participant Observation (DeWalt and DeWalt, 2002:1). Participant observation can help understand emerging networks, such as online gaming communities. Anthropologist Tom Boellstorff suggested that understanding emerging virtual networks began with the creation of the first virtual world in the 1970s (Boellstorff, 2008). This ethnographic approach - determining the initiation or development of a network through understanding its initial purpose - can greatly help to understand the nascent connected health network and inform its subsequent analysis. Boellstorff discusses how communities develop within such ‘new’ social environments, tracing their evolution from being a place of interaction, to becoming communities in their own right. Time is important when attempting to understand how networks are bounded (Boellstorff, 2008). It is only with time that these places start to be seen as communities and it time that allows a community to grow, develop, and become valued by those involved, and indeed those who are not.

Given the connected nature of networks, researchers have largely accepted snowballing and triangulation with secondary data as suitable methods to define the boundaries of the network (Rampersad, Quester, and Troshani, 2010). Snowballing within ethnographic research involves: “identifying participants based on the recommendation of other members of the selected sample” (Ortiz, 2003, p. 40). Such a casual approach to identifying a line of sampling may, however, bias the ethnographer’s view of the network, and therefore their findings as to the nature of that network. Informants identified using this approach may well recommend others with similar viewpoints and ideologies as their own. While snowballing holds a use within ethnographic research, in the case of understanding the network, we confine this to the identification of boundaries and internal networks, rather than the selection of informants. By blending the snowballing approach and participant observation the ethnographer may lay claim to more intense rigour, increasing both validity and generalisability.

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In seeking to identify the boundaries of the Irish connected health market, therefore, the first author attended meetings of the Irish connected health ecosystem, health 2.0 networking meetings, open events at the national connected health technology research centre and other one off events that linked healthcare and technology. In doing so she identified the different types of organizations and individuals involved in the shaping of the Irish connected health market including previously unconsidered actors such as an umbrella organization for patient representative organizations who were training patient advocates who would work with both commercial and policy actors on issues such as re-imbursement and innovation. This observation was combined with a wide range of one on one interviews at the end of which informants were asked to identify individuals or organizations that they felt were making an impact on the direction or adoption of connected health models in Ireland. This helped to identify organization types that may otherwise have been overlooked such as small indigenous technology companies who were driving innovative services and associated payment models, pushing the boundaries of the organizational network out into elements of the technology industry that would previously have remained separate to healthcare.

### 3.3 Sourcing data: Choosing nodes, organizations and individuals

At this point we have employed anthropological approaches to deal with the multiple levels inherent in whole network research and to resolve some of the questions around the bounding of such a network. There remain, nevertheless, outstanding challenges around the selection of informants within the bounded sample. As we are theorizing emerging networks, an accurate quantification of the network population is impossible as an emerging population is unknowable (Levin-Rozalis, 2004). We can never, therefore, aspire to representative samples that are generalizable to that unknowable population, such as those offered by largely quantitative methods that employ random or probability samples (Tashakkori and Teddlie, 2003a). A network consists of multiple clusters, cliques, and nodes, each of which may contain several organizations and individuals. The density of the ties in a network increases over time (Venkatramen and Lee, 2004), and different networks age differently (Provan, Fish, and Sydow, 2007). The study of whole networks therefore consciously turns away from any kind of convenience sampling of nodes, organizations or individual informants (Patton, 1990). We propose, rather, that dynamic sampling approaches are required to keep pace with this changing network.

Throughout the literature, advice exists on issues like data saturation, a cycle of source identification, data gathering, data analysis, theme/issue saturation checks and a return to source identification and more data gathering where it seemed new concepts were still emerging (Mason, 2010), although the necessity to achieve data saturation in all qualitative research contexts has more recently been questioned (O’Reilly and Parker, 2013). Sampling techniques like purposive sampling, quota-based sampling and snowballing are well covered in the literature (see Gentles, Charles, Ploeg, and McKibbon’s 2015 Qualitative Report article for a comprehensive overview of sampling as discussed throughout the methods literature). Purposive sampling chooses participants according to preselected criteria relevant to a research question; while quota-based sampling quantifies participants chosen under specific criteria. Both are based on the premise that we can identify those people believed to experience, know about, or have insights into the research topic.

These methods predetermine the view of the network that will be achieved, based on the researcher’s preconceptions of who is important. This sampling bias is not to be equated with researcher subjectivity which is an essential and unavoidable element of an ethnographic approach (Roulston and Shelton, 2015). Rather, in the particular context of a nascent market, such an approach blinds the researcher to derogations from traditional relationships and the development of new networks or versions of networks that will dramatically impact the nature of the market. Snowballing, while more appropriate in terms of their ability to uncover hidden populations, may still lack the rigour of a more theoretical, purposive approach as discussed above.

Ethnography may address this imbalance, in part through the use of semi-structured interviews. Ethnographic interviews are not straightforward (Skinner, 2012). Consideration should be given to selecting interviewees and their potential to contribute to the research being conducted as “although almost anyone can become an informant, not everyone makes a good informant” (Spradley, 2016, p.45). Recruiting informants can be difficult and the temptation, for experienced and novice researchers alike, is to recruit as many as possible, as soon as possible. However, when making sense of the structure of a network, it is essential to dedicate time to informant selection. “Good informants” for ethnographic interviews demonstrate “(1) thorough enculturation, (2) current involvement, (3) an unfamiliar cultural scene, (4) adequate time” (Spradley, 2016, p. 46). These criteria are employed below in order to analyse the effectiveness of the ethnographic interview in understanding the whole network.
• **Thorough enculturation**: Interviews should be conducted with informants who understand the intricacies of their own culture (Back, 1955), which for whole networks means the culture of the network itself. While extremely knowledgeable informants may at first glance seem ideal, there are dangers of which the network ethnographer should be aware (Spradley, 2016). Firstly, the informant may be so familiar with the network they take aspects of it for granted (Spradley, 2016). Secondly, over time knowledgeable informants may develop a bias and report the network based on personal preferences rather than offering a whole network perspective (Spradley, 2016; LeCompte and Goetz 1982). To address these issues, it is suggested here that the ethnographer should 1) Interview as many knowledgeable informants as necessary to reach saturation, 2) Develop a network structure from interviews with knowledgeable informants, noting the similarities and differences between their accounts to test for bias, and finally 3) interview numerous less knowledgeable players in the network and build up the structure of the network from here. Interviewing less knowledgeable network participants can produce valuable insights (Spradley, 2016). Despite the fact that, in isolation they may possess less information than more knowledgeable informants, together they may in fact hold less bias.

• **Current involvement**: Selecting interviewees who are currently involved in the field being researched is especially important when considering the development of something as ever-changing as the market network. Interviewing an informant who has been retired for several years will yield outdated information on the network, and as a result lead the ethnographer on a path of inquiry which is irrelevant for the network in its current form (Spradley, 2016). In our research in the connected health field, however, we did find that two very recently retired network members made for excellent informants. Each had been active within the network up until 3 months previously. They remained thoroughly encultured and offered an up-to-date view of the network, but were no longer as burdened by personal or organizational agendas. This freed them up to offer a more holistic and less biased view of the whole network.

• **An unfamiliar cultural scene**: To date we have focused largely on the informant. The knowledge and experience of the ethnographer is, however, as important as the perceived ‘quality’ of the interviewee. If the ethnographer is over-familiar with the network, they will take much of it “for granted” (Spradley, 2016, p. 49). The ethnographer with little experience of the network will ask basic questions, such as “Who do you think are the people involved in the network?” , whereas, someone with more experience of the network might already know players involved and lead with a question like “What do you think X’s role is in the network?” (Spradley, 2016). Such a line of questioning presumes that the ethnographer and the interviewee have the same understanding of the network. As such, the ethnographer has the potential to shape, and bias the understanding of the network they present (Le Compte and Goetz, 1982). The first author’s investigation of the Irish and New York connected health market networks illustrated this danger. In Ireland, she was a member of the connected health network and set out to study it with accumulated knowledge and a perspective whereas she had no prior knowledge of the New York connected health network and was starting with a clean slate in terms of knowledge gathering. Contrary to expectation, it took a much shorter period of time to gather a holistic view of the New York network than the Irish network. Knowing little meant that the author began by reading around the field, consulting field experts, and scoping out the boundaries of the network. Informants were approached with no prior relationship or expectation and leads were followed without exception. In the Irish market the author was hampered by prior relationships, informants who skipped over chunks of data assuming that the author already had this information, and a reluctance to share information that might be considered sensitive, despite confidentiality assurances. The author confesses to having found it difficult to separate herself out from the field and the network, and acknowledges the need for copious reflective techniques to address this imbalance.

• **Adequate time**: Time plays a major role in successful and informative ethnographic interviews. As ethnography relies on spending time exposed to a specific social phenomenon, it is necessary to conduct several interviews with an interviewee (Westby, Burda, and Mehta, 2003). This allows for a trusting relationship to develop (Heyl, 2001). This trust may help the ethnographer attain a more truthful view of the network. With time between interviews, the ethnographer can consider interviewees responses, and conduct additional research on select topics (Spradley, 2016). The ethnographer can also pose additional questions and seek clarification on unclear topics (Leech,
While being a complicated method, the interview holds the potential to greatly assist in sourcing market network data. Core considerations should be limiting bias and creating a view of the network which is well-rounded and accounts for as many players as possible.

4. Conclusions

As our world changes, so too must our research methodologies. As we answer more of the market’s questions, the challenge is to find ways of addressing those most complex questions that remain. Complex questions require complex methodologies but they do not necessarily require us to compromise. As we have stated, the notion of the whole network demands a different mode of inquiry than other forms of market. It is our suggestion that to understand the complexity of the whole network we do not need to reinvent the wheel. Pre-existing methodologies such as ethnography have been addressing and shedding light on complex societal questions for decades, such as the purpose of language, and the notion of hierarchy within society.

Answering whole network questions may well be crucial to the maintenance of societal good in the face of increasing technology, globalization and marketization. Organizational networks in their widest sense include non-commercial actors such as government and their agents, non-governmental organizations and civil society organizations. Understanding how these players can defend or re-insert public good considerations through the maintenance or development of network norms and institutions is crucial. Such understandings can inform both government and organizational policy.

As illustrated throughout this paper, ethnography may help us bound, understand, and ultimately theorize the whole network. By utilising research methods such as participant observation and semi-structured interviews insight can be attained into what is an inherently complex phenomenon. We do not suggest ethnography as a panacea for all market network research ills. Rather we set out some of the elements of this approach that may resolve some practical issues for the market network researcher. In doing so we exhort such researchers to have courage and not retreat from the challenge of understanding the whole network.

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Abstract: The field of entrepreneurship is yet to exhaust the gamut of qualitative design choices for use in researching the entrepreneurial process. For this reason, this paper proposes that insider action research (IAR), with its iterative, immersive and emergent form of inquiry, presents a pragmatic design choice for understanding the nature of uncertainty surrounding the digital entrepreneurial process. Since entrepreneurship in the digital context is a highly dynamic and fluid process, IAR appears well-suited for use in researching the phenomenon. Yet, the paucity of its application in entrepreneurship research, and less so in the emerging digital space, is rather puzzling. Thus, using a real time case study of a new venture creation process in the e-learning sector, this paper contributes by elucidating how this mode of inquiry might be set up and applied in digital entrepreneurship experimentation. Even though the longitudinal study at hand is still unfolding, the completion of two IAR cycles serves to demonstrate how a symbiotic interweaving of new venture creation and new knowledge production can provide the basis for extracting valuable insights about the digital entrepreneurial process.

Keywords: insider action research, researching entrepreneurship, digital entrepreneurship

1. Introduction

Entrepreneurship research appears to be coalescing around core themes, unified by the study of the phenomenon – i.e., the process of emergence of new economic activity (Wiklund et al., 2011). This process is often described in terms of uncertainty (Knight, 1921; McMullen & Shepherd, 2006), non-linearity and unpredictability (Sarasvathy, 2001, 2008). Thus, it requires ‘continual adjustments by actors’ (Garud & Giuliani, 2013), who learn and hone their capabilities through a range of situational influences (Kempster & Cope, 2010) and experimentation (Kerr et al., 2014).

In the digital context, Nambisan (2016) notes that the dynamic and fluid boundaries of innovation and entrepreneurial processes, dictate the use of methodological approaches that reflect the incremental and nonlinear paths that digital artifacts and platforms facilitate in entrepreneurial initiatives. Following this argument, this paper proposes that insider action research (IAR), with its emergent and iterative mode of inquiry (Shani & Pasmore, 1985; Reason & Bradbury, 2008) presents an intuitive design choice for producing knowledge within this context. Yet, despite its potential to illuminate our understanding of the entrepreneurial process, the paucity of use is rather puzzling.

Therefore, using a longitudinal real time case of a digital start-up process in the e-learning industry, this paper serves to elucidate how this form of inquiry might be applied in continual experimentation with the digital entrepreneurial process, while producing new knowledge as a scholarly outcome. As such, in a dual role, the researcher as entrepreneur, initiates a digital start-up that provides the vehicle for applying and critiquing a host of entrepreneurship and innovation management perspectives and practices. In a collaborative effort involving a Dutch gaming company, a web developer and actors sourced from digital talent platforms, the study enacts a realistic digital entrepreneurial process as core project, which enjoys a symbiotic relationship with the academic project of knowledge production.

Since the research is still unfolding, results at the moment are only tentative. However, as the first and second IAR cycles indicate, managing uncertainty in the digital entrepreneurial process appears to lend itself to an eclectic mix of causal, bricolage (Baker & Nelson, 2005) and effectual logic (Sarasvathy, 2001); alongside multiple innovation and entrepreneurship principles and practices such as the Lean Startup (Ries, 2011, Blank, 2013). Under conditions of extreme uncertainty, decision making appeared to be greatly influenced by bricolage and effectual logic. However, as effectual cognition facilitated new knowledge acquisition in the entrepreneurial process, newly acquired knowledge became the basis for a transition to more predictive sub-processes, as uncertainty is reduced.

This paper is organised as follows. First, it draws on current debates in entrepreneurship research to underscore the rationale for adopting an IAR mode of inquiry. In so doing, it highlights the call for entrepreneurship research that adopts methodological sophistication, unique to researching the dynamic and non-linear entrepreneurial process (Bygrave, 2007). Next, it explores relevant literature on AR and the subcategory of IAR, while simultaneously establishing its suitability for experimenting with the digital start-up process. Finally, it illustrates how IAR is being applied in a live longitudinal entrepreneurship experimentation process.

2. Researching Entrepreneurship

Entrepreneurship theories draw from diverse disciplines, with their corresponding epistemic traditions. While the multidisciplinary character of the field has contributed to a vibrant discipline (Audretesch, 2012); it has also resulted in fragmented and non-cumulative knowledge development (Fiet, 2001), with some incompatibility in the methods used to conduct research (Chandler & Lyon, 2001). This increased fragmentation has prompted different responses from the scholarly community about how knowledge might be produced in the field.

2.1 Debating Entrepreneurship Research

Pittaway (2012) identifies and categorises two broad groups in the entrepreneurship research debate. The first group seeks to define the subject more narrowly, thereby consolidating (Shane & Venkantaraman, 2000) and/or excluding certain types of research (Low, 2001). This group leans towards positivistic paradigms to seek expansive theories that integrate much thinking into a coherent whole. Meanwhile, the second group echoes both pragmatist and interpretivist perspectives; and considers the diversity in thinking to be a positive outcome of entrepreneurship studies (Gartner, 2007). Diversity, they argue, leads to very different forms of acceptable knowing and knowledge construction (Grant & Perren, 2002; Pittaway, 2005).

Despite differing perspectives, there appears to be a consensus on several issues facing entrepreneurship research. For one, most scholars seem to agree that entrepreneurship is an evolving discipline and need not be researched purely as part of established sciences (Simon, 1996). For instance, Zahra and Dess (2001) argue that entrepreneurship cannot be too paradigm driven, as that would kill the energy that makes the field vibrant. There is also unanimity in Gartner’s (1988) argument that entrepreneurship cannot lose sight of the phenomenon it seeks to study. As such, research needs to encompass the study of processes of emergence of new economic ventures (complete or incomplete) across various organisational contexts (Davidsson, 2016: 35).

The above views echo Bygrave’s (2007) repeated call for entrepreneurship research involving methodological sophistication germane to studying the phenomenon. As such, he insists that because entrepreneurship begins with an act of human volition and unfolds in a disjointed, discontinuous, and non-linear manner; it does not lend itself to methods designed for smooth, continuous and linear processes.

2.2 Rigour vs. Relevance

The entrepreneurship research debate can also be framed within the broader rigour versus relevance discourse; which was partly engineered by Susman and Evered’s (1978: 585) observation that findings in scholarly management journals only remotely related to the real world of practising managers. To bridge the gap between theory and practice, Gibbons et al. (1994) proposed Mode 2 knowledge production.

Unlike traditional Mode 1 research, which sets and solves problems in a context governed by academic interests of a specific community, Mode 2 research produces knowledge within a context of application (Starkey & Madan, 2001). It seeks to overcome the concerns of the practitioner community by producing knowledge which is based on academic rigour, yet holds relevance to practitioners (Starkey & Transfield, 1998: 14). For this reason, Starkey and Transfield argue that ‘the ability to develop ideas and relate them to practice should be the distinguishing competence of the skilled management researcher.’

Mode 2 research, such as IAR, is therefore born out of some of the limitations of traditional research approaches, especially those that rely heavily on backcasting. As cognitive psychologists point out, human memory is constructive, with the result being selective recall and retrospective and hindsight biases (Anderson, 1990). As such, traditional research designs which mainly rely on data collection techniques such as
in-depth interviews or surveys, risk producing knowledge that misidentifies causality in the entrepreneurial process, which only an immersive experience might uncover (Read, Sarasvathy, Dew & Wiltbank, 2016).

However, at this juncture, it is important to underscore that the intent in identifying some of the limitations of Mode 1 research, is neither designed to deny its many merits; nor is it meant to suggest that one design choice is superior to the other. In fact, it will often be the case that a researcher’s design choice is predicated on subject matter and situational constraints (Easterby-Smith et al., 2015).

Nonetheless, since entrepreneurship is often cast as pragmatic science (Drucker, 1985; Rasmussen & Sørheim, 2006), the need to produce actionable knowledge (Argyris, 1996), using concrete research, cannot be over-emphasised. Aldrich and Martinez (2001: 51) concur by stating that entrepreneurship research needs to move beyond conceptual integration and attempt to replicate concepts in concrete empirical research.

Likewise, Landström et al. (2016: 10-11) summarise the foregoing practice-based arguments, by stating that like real world entrepreneurs, entrepreneurship research needs to adopt the same ‘down to earth,’ actionable and pluralistic view of entrepreneurship; by employing epistemological and methodological inspiration from pragmatic philosophy, and a wide range of traditions.

Digital entrepreneurship, which has only very recently received an agenda-setting first entry in entrepreneurship’s top journal (ET&P), is in need of appropriate methodologies for studying the phenomenon (Nambisan, 2016). Given the current interest, the time may be right for identifying design choices that cater to highly dynamic and fluid digital entrepreneurial processes. As such, a closer examination and adoption of AR and IAR for use in real time entrepreneurship experimentation presents a worthwhile undertaking.

3. Action Research (AR) – An Overview

3.1 Definition

AR is an umbrella term for a family of practices (Reason & Bradbury, 2008: 1), united by a Lewinian (Lewin, 1946) origin, with each modality having its own distinctive emphasis (Raelin, 2009; Coghlan, 2010a, 2011; Bradbury, 2015). Given the multimodal and interdisciplinary nature of this design choice, definitions tend to be varied and discipline specific. Within organisational sciences, however, AR is commonly defined as:

... an emergent and iterative process of inquiry that is designed to develop solutions to real organisational problems through a participative and collaborative approach, which uses different forms of knowledge, and which will have implications for participants and the organisation beyond the research (Shani & Pasmore, 1985; Reason & Bradbury, 2008).

3.2 Modalities

In developing solutions to real organisational problems, various modalities of AR can be mixed and matched as circumstances dictate (Coghlan & Brannick, 2014). Participatory AR has a focus outside of the organisational context and seeks to empower people to construct and use their own knowledge (Lykes and Mallona, 2008); while Action Learning focuses on the development of people in an organisation, and uses tasks as a vehicle for learning (Revans, 1982; Pedler, 2011). With Appreciative Inquiry, the emphasis is on large system change through an appreciative focus on what already works in a system than what is deficient (Reed, 2006). Meanwhile, Clinical Inquiry is based on the notion that deeper and more valid information can grow from AR if researchers base their inquiry on clients’ needs; and if they focus on being helpful (Schein, 1995, 2006). Cooperative Inquiry involves a modality of AR where all participants work together in an inquiry group as co-researchers and co-subjects (Reason and Heron, 1986; Heron and Reason, 2008); and Reflective Practice, is a form of first-person inquiry which refers to how individuals engage in critical reflection on their own action (Schon, 1984). This family of practices is in many ways, different from conventional Mode 1 research.

3.3 Action Research vs. Conventional Research

To gain a fuller appreciation for AR, a comparison against conventional or traditional research is of essence. Traditional research is used here in its broadest sense to denote research that mostly draws from well-established positivistic paradigms. The table below summarises some of the core differences.
Table 1: Differences between Conventional & AR

<table>
<thead>
<tr>
<th>Basis</th>
<th>Conventional Research - (Mode 1)</th>
<th>Action Research -(Mode 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose; Power</strong></td>
<td>To understand; Researches 'on' – 3rd person inquiry</td>
<td>To understand &amp; improve; Researches 'with' – 3 Voices (1st, 2nd &amp; 3rd person inquiry)</td>
</tr>
<tr>
<td><strong>Researcher</strong></td>
<td>External to context</td>
<td>Embedded with research</td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td>Qualitative &amp; quantitative</td>
<td>Experiential, emergent, partial, dialogic, intuitive, qualitative &amp; quantitative</td>
</tr>
<tr>
<td><strong>Strengths</strong></td>
<td>Weights variables into deterministic sets &amp; seeks generalisability</td>
<td>Addresses complex contexts where systems activities are governed by political-pragmatic realities</td>
</tr>
<tr>
<td><strong>Weaknesses</strong></td>
<td>Commitment to objectivity may render it armchair speculation – possibly inactionable &amp; potentially misleading</td>
<td>Many positive outcomes cannot be easily summarised quantitatively; to those not familiar, it appears lacking in objectivity</td>
</tr>
<tr>
<td><strong>Benefits</strong></td>
<td>Serves academic community &amp; may exploit participants as objects</td>
<td>Builds problem-solving and learning competencies in communities, groups and organisations</td>
</tr>
</tbody>
</table>

Source: Adapted from Bradbury (2015: 2)

Given the differences, AR has its own unique set of rules for judging quality. Bradbury (2015:8) identifies the following seven pillars of good AR:

1. **Articulation of objectives** - (i.e. the extent to which the AR project addresses its objectives)
2. **Partnership & participation** - (i.e. the extent to which it reflects participative values, such as consultation with stakeholders)
3. **Contribution to AR theory-practice** - (i.e. the extent to which it contributes to a wider body of theory and/or practice)
4. **Appropriate methods & process** - (i.e. the extent to which appropriate methods are clearly articulated and illustrated; analysis must include the voices of participants)
5. **Actionability** - (i.e. extent to which AR provides new ideas which guide action in line with need)
6. **Reflexivity** - (i.e. extent to which the researcher acknowledges self-location as a change agent; whereby self-location means taking a personal, involved and self-critical stance in the process)
7. **Significance** - (i.e. having relevance beyond the immediate context of the AR project)

3.4 Philosophical Underpinnings of AR

The basis for adopting AR and its corresponding quality assessment criteria, is grounded in solid ontological and epistemological meta-theories. While AR may be associated with a continuum of philosophical traditions, Herr and Anderson (2005) identify critical realism (CR) and pragmatism as being recurrent in underpinning knowing in action (Johansson & Lindhult, 2008; Coghlan & Brannick, 2014: 45).

3.4.1 Critical Realism

CR, as Burgoyne (2011) explains, presents a middle ground philosophy between the extremes of positivism and interpretivism. It develops a qualitative theory of causality by avoiding some of the pitfalls of empiricist theories, as embodied by direct realism and positivism (Roberts, 2014). For this reason, critical realists such as Bhaskar (1975) maintain that reality is stratified into the empirical, the actual and the real. The empirical represents events that are observed or experienced; the actual, constitutes events and non-events which come about as a result of the real, while the real represents causal or generative structures and mechanisms with lasting properties.

Therefore, given the stratified nature of reality, the researcher must deep-dive in critical reflection, to probe and understand the underlying structures and mechanisms that give rise to observed phenomena (Bhaskar, 1989). Since CR raises questions about the preconditions for social phenomena, Blundel (2007) posits that it is well placed to frame and investigate into contextual and process issues in entrepreneurship.

Critical realist knowing involves a four-step process of experiencing, understanding, judgement and decision on action (Lonergan, 1992; Flanagan, 1997); whereby, we start by experiencing; then, using inferencing techniques such as abduction and retroduction, we reason backwards to question our experience (Danermark et al., 1979; Sayer, 1992:107; Danermark, 2002; Reed, 2005). In so doing, we discover or gain understanding. Upon our understanding, we make a judgement. Through this process, we discern the underlying causal
mechanisms and structures that give rise to qualitatively observed phenomena. Finally, based on our judgement, we might take action.

As Johansson and Lindhult note, the critical realist orientation of AR ‘focuses on reflective activity, in order to articulate, develop and validate knowledge, and support emancipation of minds.’ It allows researchers to be part of a study, yet maintain distance from it. AR mostly derives its rigour from a critical realist orientation.

3.4.2 Pragmatism.

Pragmatism and CR, thus combine to provide the basis for quality in most AR projects. Whereby, CR emphasises the process of knowing; while pragmatism helps to combine theory and practice, by employing experimentation in practice and conceptualisation as a desirable approach to developing new knowledge and improving practice.

Given the widespread adoption of CR and pragmatism in entrepreneurship research, the idea of researching the entrepreneurial process using AR is not far-fetched.

3.5 Why Action Research the Entrepreneurial Process

The AR process is both emergent and iterative. It begins within a context and works through several cycles, with the possibility for a change in direction as the research unfolds. Each cycle starts with diagnosing of issues, followed by planning, taking and evaluating action. A decision on actions for the next cycle is usually informed by knowledge gained from evaluating the previous one. Similarly, the entrepreneurial process is ‘a phenomenon in a state of constant flux, shaped by the behaviour of entrepreneurs whose responses to perceived opportunities may be highly difficult to predict’ (Neergaard & Ulhøi, 2007:1).

By juxtaposing the AR process (see Figures 1) and pragmatic entrepreneurial process models (see Figure 2) such as the Lean Startup (Ries, 2011:75), Design Thinking (Brown & Katz, 2011) and effectuation (Sarasvathy, 2001, 2008), methodological similarities begin to emerge. Thus, AR empowers scholars and scholar-practitioners to naturalistically experiment with, and document the entrepreneurial process in real time. Researchers can envisage several scenarios in which AR processes become seamlessly woven into entrepreneurial processes, in symbiotic relationships of new venture creation and new knowledge production.

![Figure 1: Action Research Method](Source: Coghlan and Brannick (2014: 30))

![Figure 2: Lean Startup](Source: Ries (2011: 75))

With relation to participation, AR is a social process in which the researcher is embedded (Bradbury & Reason, 2003), and collaborates with members of an organisation as a facilitator, to better their situation (Greenwood & Levin, 2007). As Heron and Reason (2006) observe, AR is research ‘with’ rather than ‘on’ people. Similarly, most entrepreneurial ventures are the result of teams (Cooney, 2005) or a loose coupling of actors called ‘collectives’ (Nambisan, 2016), engaging in immersive and high-performing experiences, to co-create successful ventures within affordable means; and stakeholders who self-select into the process (Read et al., 2016).

Further, AR also encourages the use of different forms of knowledge, which may include abstract theoretical knowledge, experiential knowledge, and knowing-in-action (Reason, 2001). This approach to knowledge
production is incorporated into each stage and cycle of the AR process. It echoes the same pragmatic approach ‘expert’ entrepreneurs are observed to adopt in gaining knowledge during new venture creation processes.

The many similarities between the entrepreneurial process and the AR process, is the basis for the rather obscure but intriguing question - Is entrepreneurship action research in disguise? (Rasmussen & Nielsen, 2004). While the use of AR in entrepreneurship studies appears intuitive, only a handful of entrepreneurship scholars have taken up this mode of inquiry (Rasmussen & Sørheim, 2006; Leitch, 2007). Even rarer is the application of AR in hands-on experimentation with the entrepreneurial process.

Perhaps, the paucity of AR in real time entrepreneurship experimentation may be explained by a number of factors. First, the potentially taxing nature of the process may not always present a feasible option for researchers within academic institutions. Likewise, there is a general tendency for top journals to favour large positivist studies (Chandler & Lyon, 2001). Further, being a relatively young discipline, the field of entrepreneurship is yet to exhaust the gamut of qualitative research methodologies which may provide novel perspectives on the entrepreneurship phenomenon.

4. Insider Action Research

4.1 Overview

While the previous section serves to provide a generic basis for using AR in researching entrepreneurship, Insider Action Research (IAR) is probably most suitable for use in real time entrepreneurship experimentation. Best described as research in ‘the swampy lowlands’ (Schon, 1995), IAR is a unique form of inquiry which involves conducting research in the organisation or community in which one is employed or a member - such as a start-up organisation. It emerges from a mixture of organisational AR modalities and gains integrity by integrating first, second and third person inquiry. As such, the process involves high vulnerability, amongst other challenges (Coghlan, 2007; Coghlan & Brannick, 2014).

A complete theory of the IAR process, as Shani and Pasmore (1985) envisage, consists of four main factors - context, quality of relationships, quality of the AR process and outcomes. Factors surrounding context, affect the readiness and capability for participating in AR. Environmental factors in the global and local economies provide the larger context in which AR takes place.

The quality of relation between researcher and members is paramount; and, therefore, it needs to be managed through trust, concern for others and equality of influence. The IAR process itself needs to be rooted in a dual focus on both the inquiry process and the entrepreneurial process. Finally, outcomes of AR need to have a dual function of developing self-help competencies out of the action, and the creation of new knowledge (Coghlan & Shani, 2014; Coghlan & Brannick, 2014: 5-6).

Björkman and Sundgren (2005) describe IAR as a form of political entrepreneurship where researchers exploit learning opportunities within their organisations. Political entrepreneurs, as Buchanan and Badham (1999) note, operate within an organisation, combining a flexible number of skills while enabling activities such as intervention in political processes, coping with resistance, and promoting credibility in order to reach objectives.

One reason IAR presents a feasible option in experimenting with digital entrepreneurship, stems from the low barriers to entry made possible by enabling digital technologies (Porter, 2001) and a distributed system for innovation; thus, it allows researchers to set up real start-up organisations, against which they may affordably experiment with the entrepreneurial process, while gaining new insights that may lead to theory building, theory corroboration and/or modification.

4.2 Challenges & Countermeasures

The immersive nature of IAR (Riordan, 1995; Cooke & Wolfram Cox, 2005) presents challenges, which mainly arise from being close to the problem under study. For this reason, Coghlan (2007) identifies preunderstanding, role duality and organisational politics as being the main issues researchers face when undertaking IAR.
Preunderstanding, as Gummesson (2007: 57) notes, refers to a person’s knowledge, insights and experiences before they engage in a programme. It includes both explicit and tacit knowledge; which for the insider action researcher, can be beneficial, as well as detrimental to the study (Coghlan & Brannick, 2014: 133-134). Insider action researchers must guard against assuming too much, which tends to prevent critical examination. Ferguson and Ferguson (2001) warn against the danger of believing they fully know their own contexts when in fact their perspectives might only be partial and path dependent. Thus, the researcher is called upon to question their own assumptions and self-awareness using first person reflexive techniques such as reflective journaling, thought experiments, retroductive analysis and counterfactual thinking.

Role duality, which Williader and Styhre (2006) describe as being between academia and practice, can equally complicate the IAR process. This dual role can become overwhelming and confusing as the researcher is bound to experience ‘competing commitments’ (Kegan & Lahey, 2001); whereby, there is a higher degree of commitment to the core project (new venture creation in this case), but as an academic, a detached and neutral position is demanded. This conflict may lead to role detachment as the researcher begins to feel like an outsider in both roles (Adler & Adler, 1987).

Organisational politics presents yet another challenge, as it can undermine research and obstruct planned change. Coghlan (2007) observes that gaining access, using data, disseminating and publishing findings of IAR can be intensely political acts, which may also raise ethical concerns. As such, researchers need to be reasonable, intelligent, self-critical and responsible. An early awareness of these challenges is the first step in pre-empting and overcoming them.

5. Enacting the IAR Process

As part of the IAR process, this study has so far completed two cycles, which began with a pre-step that outlined the context and purpose of the study.

5.1 Pre-step: context & purpose

The pre-step in IAR, defines the context and purpose of the core project and the research project. Context in this study is multi-layered and includes the digital entrepreneurial context and the Irish national and academic contexts. These contexts, which often overlap, present affordances and constraints for carrying out the core IAR project.

The overarching purpose of the project was the creation of a new venture in the e-learning industry, as the basis for a continuous extraction of new knowledge. The new venture idea is a start-up, designed to support learning in K-12 (pre-university education) markets using cross-platform compatible games.

5.1.1 Digital entrepreneurial context:

The process unfolds within the broader context of the global digital economy and the digital learning industry. Within this context, a technological disruption presents the external enabler (Davidsson, 2015, 2016) for coming up with the new venture idea. The entrepreneur has been embedded within this context for over ten years as portfolio digital entrepreneur; and draws from relevant prior knowledge, abilities and experiences, to identify, evaluate and develop the new venture idea.

This digital context presents challenges for conducting IAR, which mostly stem from the network-centric value creation processes brought about by digitisation. As Dymek (2008) notes, digital technologies shape the development of AR processes as they provide opportunities for collaboration, yet bring new challenges. Schein (2003) observes that the lack of body language and ‘functional familiarity’ threatens the quality of participation when undertaking AR with geographically dispersed agents. This study found that computer-mediated communication has the potential to increase the level of misunderstanding and uncertainty in the digital entrepreneurial process. To circumvent these challenges, communication technologies were later used interchangeably and concurrently to minimise misunderstanding in a two-tier layer of symmetric communication and follow-up asymmetric confirmation.

5.1.2 Academic context:

The academic context of this study offers knowledge-based opportunities. The current venture under study is initiated by the researcher, who doubles as a portfolio digital entrepreneur in the e-learning industry. After a
fourteen-year hiatus from higher education, the entrepreneur returned to undertake a master’s in entrepreneurship in his current institution. Upon completion of the programme, he came away with an improved understanding of how his fortuitous digital entrepreneurial journeys had unfolded. He then became intrigued by the idea of fusing academic research with real-world practice at the doctorate level. As such, the motivation for using the creation of a new start-up venture as a vehicle for entrepreneurship experimentation and self-improvement was born. Thus, borrowing from effectual logic (Sarasvathy, 2001) and other entrepreneurship perspectives and practices, the researcher founds and funds the realisation of the new venture idea.

5.1.3  *Irish national context:*

The academic context is embedded within the broader Irish national context. Within this context, the researcher is a non-EU citizen on a student residential visa. The researcher’s status presents constraints at the level of setting up the venture as an Irish limited liability company – state polices prohibit non-EU nationals from establishing Irish limited liability companies, unless they commit to a huge upfront investment. With this limitation, the researcher was forced to register the venture as a Hong Kong company, while leaving open the possibility for scaling later within Ireland, if successful.

5.2  *Main Steps - Stories & Outcomes*

While documenting the experience in real time through reflective journaling, this study completed two IAR cycles and is in the middle of a third. The researcher’s reflective notes provide essential data for retroductive and abductive analysis.

5.2.1  *First IAR Cycle*

While the complete IAR story and outcome is quite detailed, Figure 3 and the subsequent narrative provide a summary of how the first IAR cycle unfolded.

**Figure 3: Summary of 1st IAR Cycle**

5.2.2  *Constructing the problem:*

Using the Business Model Canvas (Osterwalder & Pigneur, 2010) as a planning tool, the entrepreneur started by articulating his vision for the new venture. He then proceeded to search and shortlist a cast of possible agents as collaborators and partners. Starting from his own network, he enlisted the services of his India-based web programmer, who agreed to develop the online learning platform.
Through LinkedIn, he found a Dutch gaming company that had experience building cross-platform compatible games, using HTML5 technology. The entrepreneur emailed a document to the founder of the Dutch firm, detailing requirements of the project; and raised awareness of its academic nature. The document became the basis for a Skype video meeting. During the meeting, the goal of developing four customisable game templates for use in e-learning game development was established.

A week after the meeting, the gaming firm returned with a quotation for the project which was unaffordable. However, by communicating the level of financial constraints, the Dutch firm devised a more affordable solution by reducing the number of required game templates to two, and removing ‘nice-to-have’ but unnecessary programming requirements. They saw the project as an opportunity to hone their skills on developing e-learning games, which was a new undertaking for them. The effectuation principle of ‘affordable loss’, mostly informed financial decision making by the entrepreneur.

5.2.3 Planning action:

With a contract signed, the project manager (PM) designated by the founder of the Dutch firm was introduced to the entrepreneur. Through Skype, the PM, the web developer and entrepreneur jointly discussed what was needed at key steps of game and web development. Next, the PM worked with his own team to produce wireframes and schematics which showed how the games would be programmed to work. The entrepreneur used the graphics to begin eliciting limited feedback from the expected target customer.

With details concluded, the entrepreneur went on to contract the services of two bloggers, who were tasked with writing articles relating to the future product. These articles were used to begin a digital marketing campaign. Specifically, it provided content which Google’s search engines could begin indexing; and which early visitors could consume. As literature on digital marketing suggests, search engine rankings can be crucial to a digital venture’s success. Factors such as domain authority and regular content updating are among important criteria search engines use for website ranking. Therefore, launching early and often, was adopted as a key digital marketing strategy.

5.2.4 Taking action:

After signing off on wireframes and schematics, game development began with intermittent Skype video meetings, email and text messaging. The game development process was running smoothly, until a miscommunication led to the wrong technology implementation. The error originated from using the wrong technology document. The entrepreneur took responsibility for the miscommunication and the process carried on. Owing to the error, the game templates would not end up capturing learning interactions on learning management systems as planned; and correcting the problem would lead to an unaffordable financial expense. Thus, the entrepreneur decided to effect a ‘pivot’ in revenue model and other aspects of the venture.

Meanwhile, in line with the bricolage principle of ‘making do’ with existing resources, the entrepreneur used extra space and bandwidth on one of his servers to create a temporary hosting account for the website. This allowed the web developer to go in and begin programming. The website began its journey as a blog, upon which articles were posted and indexed by search engines.

As game development was drawing to a close, the entrepreneur was impressed by the efficiency with which the Dutch team worked on the project. Riding on the momentum of the team, he leveraged it to conclude a contractual agreement to build an additional two new game templates for a fifty per cent discount. With the same efficiency, the Dutch team completed game development and delivered four game files in total.

Evaluating action:

As this first IAR cycle was drawing to a close, the entrepreneur scheduled a Skype meeting with the founder of the Dutch company. The meeting was an in-depth interview designed to understand how the process unfolded behind the scenes with their own independent team members. This provided a major learning opportunity for the entrepreneur. The meeting revealed that more people had worked on the project than the entrepreneur realised; and it gave him an insight into the digital tools used for collaboration by the Dutch team.

The meeting switched to small talk as the entrepreneur got to learn about the Dutch founder’s digital entrepreneurial journey. Interestingly, his formative journey bore the hallmarks of an effectual and bricolage process. The meeting helped to strengthen trust and mutual respect; and concluded with suggestions on how
future game development processes and outcomes might be enhanced. To conclude this cycle, the PM gave the entrepreneur a Skype video tutorial on code editing for game customisation, which enabled him to develop his very first learning activity from one of the templates.

5.2.5 Second IAR Cycle

A summary of the second IAR cycle is presented in Figure 4 and the brief description of events below.

**Constructing problem**
Create 150 games as MVP; elicit customer feedback

**Evaluating Action**
50 games not enough as MVP; new pages with embedded games indexed by search engines; need to develop more templates & new games for ‘real’ MVP next; decision to persevere on course

**Planning Action**
To create games for reviewing math, English & science; upload to the cloud for web developer to embed on website; carry out limited promotion to attract visitors & learn

**Taking Action**
Game creation begins; bug discovery in game templates & delays; 50 games created only; limited Google Adwords campaign, 50% site bounce rate & 2-minute user engagement

**Figure 4: Summary of 2nd IAR Cycle**

5.2.6 Constructing:

The second IAR cycle was planned around the creation of 150 free e-learning games for the website as part of the MVP. The games would help students review math, English language and science topics. The entrepreneur would analyse incoming feedback from users as part of customer discovery, using Google Analytics.

5.2.7 Planning action:

The entrepreneur, who also has skills as a primary educator, would custom create learning activities; which would be uploaded to the cloud (Dropbox.com) with search engine descriptions for the web developer to embed on the website. After every five game activities were created, the entrepreneur would upload the files to the cloud. As games are created, a limited advertising campaign would be launched to attract a few early adopters. Bounce rate and time spent playing games would be among key performance metrics to analyse. With this understanding, the process began.

5.2.8 Taking action:

While creating games, the entrepreneur discovered bugs in the game templates which would end up stalling the project. As such, only fifty games were created out of those templates without bugs. The Dutch team was informed and began finding solutions.

Nevertheless, using Google Adwords, a limited promotional campaign was launched, with the goal of gauging user engagement with the fifty games. The results came back mixed. However, given the limited number of games and lack of variety in learning activities, the entrepreneur decided that the roughly fifty per cent bounce rate and two minutes of game engagement, suggested the project held promise. In addition, two early adopters had sent emails asking to use the game templates, while two schools had shared links to the games on their school websites. Overall, this was taken as a very positive validating signal.
5.2.9 Evaluating action:

Given the busy schedule of the Dutch team, it was a while before the templates were debugged. In the meantime, Google’s search engines indexed all fifty pages within which new games were embedded. This IAR cycle concluded that a better MVP was needed to acquire a fuller profile of customer engagement. As such, the entrepreneur decided to develop new game templates and use the debugged templates for developing a ‘real’ MVP. This would later become the basis for the currently unfolding third IAR cycle.

5.3 Value of IAR

McMullen and Dimov (2013) are among many scholars who have called for process research in entrepreneurship. Despite the potential for such studies to offer a qualitatively distinct view of the field, those calls have largely gone unheeded. The use of AR in entrepreneurship research, which presents a suitable design choice for process research, is rather scarce. Even rarer, is the application of IAR in real time entrepreneurship experimentation. By using a live case in the digital entrepreneurship context, this study serves to illustrate how IAR may be implemented in longitudinal process studies of entrepreneurship. Only such studies may yield a more granular understanding of how entrepreneurial processes actually unfold. As evidenced by this study, IAR is well placed to produce knowledge that is novel, interesting and valued by a variety of audiences – practitioners and academics alike.

As a pioneering use of the methodology, this study offers future researchers insights on how to adopt this design choice for use in producing knowledge under various circumstances. Only such a research design may help energise the maturing field of entrepreneurship, which runs the risk of focusing on incremental research using ‘normal science’ designs (Landstrom et al., 2016: 2-3).

6. Findings & Conclusions

By elucidating how IAR can be utilised in an immersive longitudinal study of the digital entrepreneurial process, this paper contributes to the growing debate on how entrepreneurship at the intersection of digital technologies might best be qualitatively researched. Through an on-going case in the e-learning industry, the paper demonstrates compatibilities between IAR and the study of the digital entrepreneurial process.

As the study indicates, IAR seamlessly adapts to the fluidity of the digital entrepreneurial process, in symbiotic relationships of new venture creation and new knowledge production. In other words, IAR is a parallel process, which follows the contours of complexity in the digital entrepreneurial process; thereby making it a pragmatic research instrument for use in hands-on digital entrepreneurship experimentation.

Tentative findings suggest that although some form of planning is necessary, the digital entrepreneurial process never seems to fully succumb to a planned process because the future is simply unpredictable. As such, an overarching vision and limited short-term planning appears useful in providing direction for immediate action. This implies that digital entrepreneurs stay flexible, leverage contingencies and adjust to an ever-changing process; and an uncertain evolution of new venture initiatives. Therefore, the digital entrepreneurial process demands an eclectic mix of both causal and effectual logic, with effectual reasoning appearing to dominate. Effectual logic and bricolage seem to enable entrepreneurs to gain experiential knowledge under extreme uncertainty, which later informs the transition to more causal processes and sub processes.

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Abstract: Psychogeography refers to the loose interface between psychology and geography. Specifically it examines how we impact on the environment and the environment impacts on us. As a process it involves intimately observing the environment and seeing what may have been previously unobserved. Participants then construct meaning from these observations.

This paper describes how we used a time-limited psychogeography approach followed immediately by a focus group as research method. The aim was to determine if examining participants’ work environment would potentially enable them to identify enablers and barriers to career success. The findings from these two short interventions are compared to the more often used semi-structured interview approach to reveal that the psychogeography provided another lens to the research. Interestingly factors that were uncovered in the psychogeography and focus groups were generally different to those identified in the interviews.

The participants were a group of high-potential academic women at a large public university in Western Australia. They were enrolled in a career and leadership development program aimed at assisting women access promotions and other senior roles leadership within the university.

Much of the women’s career development literature focuses on ‘fixing women’ and not the system. To that end we wanted to use a method, in addition to interview questions, to uncover aspects of the corporate environment that might impact on women’s decisions to progress their careers. We asked participants to derive, stroll or wander within their university campus with a view to observing any ‘career enablers and barriers at work’. To not impose any further burden on their time, and to manage the wealth of data generated by the psychogeography, we asked the women to immediately share their insights through a structured focus group discussion.

Participants found the psychogeography exercise a novel approach to discovering and rediscovering their work environment. The findings revealed aspects of the work environment that had not previously been overt. These included participants’ appreciation of students having fun and a carnival atmosphere within the campus yet a simultaneous concern at the lack of quiet spaces to support scholarship and research; a disparity of investment in infrastructure improvements across various schools and faculties, which led to discussions of how disparately workload was managed by different managers; staff being segregated from students and other staff with security doors; the number of steps at the university and the impact this would have on some people with a disability.

One pleasing and unexpected outcome of the psychogeography exercise was the level of energy and collegiality it generated. The exercise was conducted at an early stage in an eight-month career development program and its use heightened participant’s awareness of aspects of their work environment’s impact on career success that may have otherwise remained uncovered or unexamined.

Our view is that psychogeography; within a limited timeframe is a valuable method to employ. When the data from such a method is captured though a focus group the impost on participant’s times is lessened, the quality of data is retained with the combined research method producing novel findings that may be different to other more traditional qualitative research methods. In our case, they helped uncover aspects of university culture and enculturation to which many research participants had been previously oblivious.

Keywords: Psychogeography, focus groups, career success, gender, qualitative research, corporate culture

1. Introduction

The research was undertaken at a large public Western Australian (WA) university. The university was piloting a career and leadership development program for senior academic women (the Program) that linked with the SAGE Athena SWAN initiative (http://www.sciencegenderequity.org.au/what-is-athena-swan/) launched in 2017. Our view is that psychogeography; within a limited timeframe is a valuable method to employ. When the data from such a method is captured though a focus group the impost on participant’s times is lessened, the quality of data is retained with the combined research method producing novel findings that may be different to other more traditional qualitative research methods. In our case, they helped uncover aspects of university culture and enculturation to which many research participants had been previously oblivious.

Australia in 2015. The Program was part of a broader gender equity strategy and was linked to research aimed at exploring the enablers and barriers to career success for academic women at the university.

One of the traps in gendered work that we were very aware of is the focus on ‘fixing’ women (Ely & Meyerson, 2000) to enable them to fit into existing cultures, structures, and practices. That is, women are expected to conform to the existing organisational practices and their lack of career success can be ascribed to their lack of conformity with the established norm. Our focus was on the systemic and more complex issues that impact on academic women's careers.

As a result one of the elements we were interested in exploring as part of this research was the impact of the work environment and how this acts as an enabler or barrier to women’s career success. We were interested to explore the full extent of the enablers and barriers and felt that semi-structured interview techniques alone may not reveal their full extent and impact. One of the authors was introduced to the dérive and psychogeography methods through the work of Hindley et al. (2015) at the 2015 European Conference of Research Methodology (ECRM). Inspired by its novelty in a business setting we turned to it as strategy for adding richness to our data gathering.

As noted above we were keen to use a research method that would not only add richness to the interview data but which could potentially provide new or novel insights in relation to gendered workspaces. That is, we were interested in uncovering aspects of the corporate culture that were gendered (Halford & Leonard, 2013) and to which women, especially those that had been at the university for long periods, may have become enculturated. To that end, psychogeography seemed a suitable research method.

Having decided to use psychogeography we were concerned that we should gather and collate the participant’s observations in a thorough yet timely manner and not add to their workloads further. To that end we used a focus group with all Program participants immediately at the conclusion of the psychogeography exercise.

This paper reports on the use of an approach to psychogeography coupled with a focus group to undercover aspects of corporate culture that relates to academic women’s careers. Psychogeography refers to the loose interface between psychology and geography. Specifically it examines how we impact on the environment and the environment impacts on us. As a process it involves intimately observing the environment and seeing what may have been previously unobserved. Participants then construct meaning from these observations. In this research we invited a group of 25 academic women to participate in a psychogeographical exercise to observe their environment with ‘career success’ in mind.

The use of a focus group is a commonly used qualitative data gathering method. In this case we used the focus group immediately following the psychogeographical exercise to surface and explore the meaning of the academics’ thoughts and observations through a structured group discussion in a timely and time efficient way.

When the results of this approach are compared with in-depth interviews covering similar areas relating to career enablers and barriers with the same group of academic women we found that significant depth and another side to the data had been added. This helped to reveal aspects of the corporate culture that the interviews alone did not.

This paper will be of interest to readers who are tasked with gaining insights into corporate culture or those interested in novel research methods. Particularly the paper reveals the usefulness of the psychogeography technique in making visible a range of signs and symbols that shapes the university’s messages to staff and students. The quality of data gathered in a brief period of time utilising a structured approach coupled with the use of a timely focus group has the potential to reveal rich and varied data. A further insight is that the data generated by the psychogeography provides additional insights that interviews alone may not. Finally, the improved sense of camaraderie coupled with the discovery of new spaces and places by the participants in relation to the workplace should be considered.

The paper is structured as follows. The first section is the literature review in which we briefly review the literature on training transfer as it relates to the importance of the participants’ work environments.
aspects of feminist literature are highlighted in relation to women’s career success. The literature on the psychogeography research method and on focus groups is explored. The second part of the paper provides an overview of the methodology. In this section we discuss psychogeography and focus groups and provide a comparison to how and why they are used in our study as compared to semi-structured interviews alone. The third part of the paper outlines our Findings. Of note in this section is the depth and difference of finding compared to a snap-shot of the interview findings. The final section of the paper is the Conclusions and Implications for practice in the future.

2. Overview of the Literature

We were drawn to three distinct areas of the literature. Firstly we looked at training transfer in relation to career development with a particular focus on organisational context. We then highlight key literature relating to gender and leadership in the academy. This is followed by an examination of psychogeography and its application to date.

There is a significant body of literature on implementation or ‘transfer of training’ dating back to seminal works by Baldwin and Ford (1988). Across much of the literature the impact the environment has on participants returning to their workplaces after an intervention program is discussed.

Individual’s participation in career planning has a strong relationship with training transfer success (Clark et al 1993, Kontoghiorghes 2000, Colquitt et al 2000). However, in exploring enablers and barriers to career success for women it is important to consider not only the women themselves but also the environment within which they work (Heiskanen & Rantalaiho, 2016). There has been a focus over time on ‘fixing the women’ (Ely & Meyerson, 2000) through a variety of learning and development strategies including training programs, mentoring and coaching. While these may be useful at an individual level, the training transfer literature cites numerous examples of the need to also have a supportive transfer climate. For example, Burke and Hutchins (2007) and Blume et al (2010) have shown that work environment is an important variable for the transference of training investment. Blume et al. undertook a meta-analytic review of 89 empirical studies and conclude that, among other factors, a receptive work environment is vital for training transference. Thus we were mindful of the need to explore perceptions of the work environment given its potential to impact on the success of the Program.

It was also important to be informed by gender literature particularly as it relates to professional women’s careers. In her study on the influence of organisational culture and increasing numbers of senior women, Boyd (2013) found that there is a need to engage employees in the assessment of the corporate culture and changes that need to be made to make it more inclusive for women. Women continue to report in higher numbers than their male counterparts that they have experienced a range of gender specific barriers in relation to their career success. These include childbearing and care responsibilities as well as sexism, discrimination and prejudice (Miller Burke & Attridge, 2011). Research by Carter and Silva (2010) showed that men are more likely to climb higher on the career ladder and to get there faster despite women having the same or similar qualifications and experience. They found it was perceptions rather than ability that impacted women’s careers. That is, perceptions that women weren’t as ambitious (Fels, 2004) or that child bearing or child caring slowed women’s careers (Howe-Walsh, Turnbull, Papavasileiou & Bozionelos, 2016; & Kahn, Garcia-Manglano & Bianchi, 2014). Changing perceptions is challenging as it requires changes to underlying beliefs and behaviours about how work is done and who should do it (Sanders, Hrdlicka, Hellicar, Cottrell, & Knox, 2011).

Blackmore (2014) argues that the corporatisation of universities acts as a disincentive for women to aspire to leadership roles in the academy. The lack of recognition of women’s leadership capacities further restricts women’s opportunities for leadership and continues to reinforce narrow definitions of leadership (Morley, 2013). Morley (2014) reports on a small study of women academic leaders. They were asked what in their view makes leadership attractive or unattractive to women and what might encourage women to enter leadership roles. The group also reflected on their own career journeys and what had been for them either enablers or barriers. They reported that they were rarely ‘identified supported or developed for leadership’ (p 124). Among other issues they identified was that women’s human capital was often devalued and they weren’t always ‘strategically positioned on pathways to leadership’ (p 115). Many of the respondents viewed leadership as potentially unobtainable given the paucity of women in senior roles and as a restrictive role that would limit rather than enhance their academic identity.
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Acker (2012) reflecting on her experience as a departmental chair noted that if she had had ‘more training and access to institutional information when I began my term as a head of department, my transition into the position would conceivably have been eased, if not easy’ (p 423). Given that women are less likely to be in pathway roles or to have access to the same levels of support as their male colleagues there is a need to provide preparation for leadership both through formal organisational roles and access to training and development opportunities.

We were also conscious of the limited body of literature on psychogeography and feminism. While some (Craig et al, citied in Knowles 2009) caution us to beware of the vulnerability of female researchers working and walking alone. Others, such as Bridger (2013) and Knowles (2009), discuss engaging people as research ‘instruments’ which can result in seeing the world through a fresh and subjective lens, not necessarily embodied in the ‘male gaze’.

We were interested in how psychogeography may be used as a research method to reveal corporate culture. In doing so our aim was to see if this approach enhanced training transfer for a cohort of senior academic women.

Psychogeography has emerged from the literary traditions. Writers such a Defoe (Robinson Crusoe) and Joyce (Ulysses) perhaps started the tradition of meticulously observing and describing the, for them fictitious, inextricably linked relationship between the environment and its characters. The use of the term Psychogeography came about when Situationists, including Guy Debord, in Paris first coined the term in the 1950s. It refers to the loose interface between psychology and geography, that is, how we impact on the environment and the environment impacts on us. Bridger (2015:np) notes that psychogeography is, ‘about opening ourselves up to the experiences of spaces, place and other people, ...in order to develop fuller critiques and challenges to the contemporary order of things ...’. It involves intimately observing the environment typically by walking through it slowly and painstakingly seeing what may have been previously unobserved. The research participants then construct meaning from those observations.

Some researchers suggest that psychogeography research should occur only in urban environments (Coverley, 2012). Others, such as Debord, and more contemporary writers such as Will Self (2007) and Ian Sinclair (in Martin, 2015; Cooper and Roberts 2012) use the term more broadly to apply to any environment.

Whilst there is mixed support for psychogeography as a research method (e.g. Knowles, 2009; Bridger, 2013; Smith 2010), there is general consensus that it can provide an extra layer or richer texture of data than may otherwise not be accessed (or even noticed). There is also strong evidence to suggest that findings can be used to challenge the status quo (Bridger, 2015).

Hindley et al. (2015) note that psychogeographical methods are potentially innovative and highly effective methods for building multiple perspectives about sense of self and formation of identity. One method is to ‘walk around’, or ‘stroll’, ‘dérive’ or ‘drift’. It is reflective and ‘slow speed’ research (Knowles, 2009). The purpose of pyschogeographical strolling can be lengthy and undefined (Sinclair in Martin, 2015). However, there are precedents where purposeful dérives have been used with a minimum time limit (1 hour) rather than more lengthy explorations (Hindley et al, 2015).

This section has examined some of the key literature that informed our thinking. It highlights the rationale behind wanting to deploy a novel approach to uncovering organisational culture through the use of a psychogeographical approach. Our methodology and approach is explained more fully in the next section.

3. Methodology

An interpretive inquiry perspective informed data collection and analysis (Yin 2015, Denzin and Lincoln 2008, and Angen 2000). Two methods were used to explore academic women’s perceptions of career success and associated barriers, challenges and enablers. One method, the results of which are reported in detail elsewhere, was semi-structured interviews with 23 of the 25 women on the Program. We compare the high-level findings from the interviews with the findings of the more novel psychogeographical approach used. The findings from the psychogeographical approach were captured through the use of a focus group. The combined psychogeographical approach and focus group are elaborated on below.
The group of participants for this research were drawn from a high-potential group of academic women participating in an executive education program offered by their university. The group of 25 women were from all faculties and were one or two levels away from positions as full Professors (i.e. Associate Professors or Senior Lecturers).

We wanted to use psychogeography as a way of encouraging research participants to see what they may not have seen before, to study the interplay of identity and ‘the politics of spaces and places’ (Bridger, 2015, n.p). The process of psychogeography had the potential to add an additional, richer dimension that may not have been consciously visible to participants prior to the process. Knowles (2009:51) has compared psychogeography against key research evaluation criteria and concluded that, when used correctly is ‘worthwhile’ research in that it meets the research criteria for reliability, validity and generalisability.

We were also aware that time constraints was an issue for nearly all the participants. As a result we combined the data gathering via psychogeography principles with sense-making through a focus group with all participants immediately following their stroll, dérive or drift around the campus.

Participants were invited to take around 90 minutes to stroll, dérive or drift around the university campus, or the university’s intranet for those unwilling or unable, to walk. The focus of this exploration was loosely the topic of ‘career enablers and barriers’. We asked them to observe their environment slowly and conscientiously: watching and listening to people and how they interacted; to view the organisation’s logos and signage; look at unofficial graffiti and visit areas with which participants were less familiar. They could also surf the intranet with less pragmatic purpose than they may usually utilise.

The principles of psychogeography were broadly explained as were the ‘psychogeographic tactics of play’ (Souzis, 2015) or having fun. Participants were encouraged to ‘wander’ in pairs or triads, invited to take photos, record voice memos and make notes that may jog their memories. Several structured activities were proffered for consideration to aid those who may have felt uncomfortable or unconfident with the process. (see Appendix 1) Participants were also encouraged to simply wander in anyway and anywhere they wished.

One concern raised in relation to psychogeography is the vulnerability of the participant, especially women. We noted the gendered nature of such concerns, in that the advice generally relates to women modifying their behaviour to ensure their safety. However, given that the environment was familiar to participants; they ‘wandered’ in pairs or triads and that the exercise was conducted in day light hours when the campus was busy, our view was that personal risk was minimised. Additionally, one of the researcher’s mobile number was provided in case of emergency and participants were all versed in university emergency protocols. An online psychogeography activity was also proffered that negated the need for participants to even leave the room, or face the elements.

All the women participated in the activity willingly joining with one or two others to create the dyad or triad. This seemed to allow a greater level of deeper discussion to take place as well avoiding the inevitable process loss that a larger group can cause (Corey et al, 2013). Some revealed that they initially saw it simply as a nice after lunch stroll. Some took the sheet with the activities outlined in Appendix 1 and some took dice to go with one activity detailed on the sheet.

When participants returned to the room there was a flurry of different conversations. Lots of excitement was observed and a clear need by participants to share their observations and generally debrief. The focus group discussion was facilitated immediately after all participants returned.

The aim was to highlight and capture key effective and affective observations and insights. The ORID technique (Observe, Reflect, Interpret, Decide) (Stanfield, 2008) was used to structure the focus group discussion. It enabled deeper exploration of meaning from their observations. The ORID focus group discussion has four parts. Participants were first invited to share what they had ‘Observed’ which included, for some, photographs of the environment they had discovered. Questions included, What visual images do you recall? What photos did you take? What are some of the sounds you heard? What words or phrases did you catch? What did you and your partner/s talk about? Did you notice any smells – what were they? Participants were then invited to ‘Reflect’ on these observations. Questions included: What was a highlight for you? What frustrated you? What made you feel happy? What surprises were there? How did you feel about the activity?
The third stage invited the participants to comment in their ‘Interpretations’ or the impact this may have had in terms of their careers at the university. Questions here included, What was the greatest learning for you or your pair? How do you think your observations impact on your career? How would it be if the messages you’ve observed were different? Finally, participants were invited to give their first thoughts on ‘Decisions’ they may be making. Focus group questions here included, What might you do differently as a result of this exercise? Who might you share this information with? What change is needed?

In this section we have provided an overview of the methodology used with a focus on psychogeography coupled with focus groups. The findings resulting from these data gathering and collating methods is discussed in detail on the section below.

4. Findings

Both affective and effective outcomes were observed. Firstly, there was joy and camaraderie displayed as a result of participants being involved in the psychogeography activity. None of the participants used the activity sheet preferring instead to wander semi-purposefully to explore what their university revealed to them as ‘career enablers and barriers’. When asked why they had not used the activity sheet the general responses were that they felt informed and confident enough with the request to wander purposefully, and that they were enjoying the novelty of the approach so much they didn’t want or need the guidelines that had been provided.

We noted that participants returned to the room commenting with enthusiasm, on the insights they had gained by this brief but purposeful exploration of their university. This is reflected in the focus group comments below:

‘I didn’t know those parts of the university existed’.
‘I’m so new and have been taken on a wonderful introductory tour’.
‘I’ve been at this university for 20-odd years and hadn’t noticed that so much had changed’.

One woman took several photographs of herself with other participants. She was relatively new to the university and enjoyed meeting others and knowing that her collegial circle had grown considerably as a result.

Perhaps one of the most rewarding aspects of the activity, for the researchers, happened over the next few weeks when participants incidentally reported back that they had met other participants in unrelated meetings and how they greeted each other with hugs and excitement at actually knowing someone else, or seeing a familiar, friendly face in the group. Thus, an unintended outcome of the psychogeography activity was to quickly bond the group of women participating in the Program.

Whilst overall there was not a particular focus by the participants on gendered enablers and barriers, four key effective areas emerged based on their observations. These were a focus on students having fun over staff and scholarship; perceived inequity regarding working spaces; physical barriers; and exclusive rather than inclusive images. These are discussed below.

4.1 University as a Carnival

Participants identified a festival or carnival feel about the university with lots of colour, vibrancy and meeting places designed for students to congregate. They appreciated the sentiment but they also noted as they wandered that there were lots of ‘sound bites’ which created a feeling of lack of depth. This raised questions as to whether this is what students expected or, was the University in danger of providing too much celebratory stimulation that detracted from its academic pursuits. There was a level of concern expressed regarding the emphasis on fun without a corresponding emphasis on research, scholarship and academic achievement.

4.2 All academics are equal but some of more equal than others

A number of participants visited each other’s work areas, which ranged from individual offices, to shared offices to large open plan formats. What they noted was the disparity in space allocations, resources and the general condition of each other’s workspaces, some were in newly refurbished workspaces while others were in aged infrastructure. This also led to discussions regarding expectations of presenteeism (Quazi, 2013).
least one participant reported that she had been instructed not to work from home whilst others were
encouraged to focus on their research and teaching outcomes that allowed them to work flexibly and
wherever they wished. These aspects had been largely invisible to previously Faculty-insular, conscientious
academics, who had assumed that their experiences were the norm.

4.3 You’re welcome?

Participants noted and encountered a number of physical barriers in moving around the campus and in gaining
access to office spaces. They spoke of encountering ‘stairs everywhere’. Others spoke of being behind a
physical barrier (security accessed areas – not available to all staff). This created a barrier in terms of
connection with students, who have ‘to be given permission’ to enter staff spaces. This was noted particularly
as a barrier by academics with student-facing roles. One women cited walking 4-5 minutes to and from her
office several times each day to meet with students. Participants reported a further barrier to connection,
especially those in shared or open plan offices, was the lack of meeting rooms or collaborative workspaces.

4.4 Someone who looks like me

It was noted than many of the images that participants observed during the exploration of their environment
were ‘nearly always young and thin’ and not very ethnically diverse. This was not seen as reflective of the
whole student and staff cohort. Participants reflected on the messages such images gave about who fitted in
and what the ideal student or staff member was supposed to look like. They also noted the number of images
or stories of achievement related to exemplary men but very few to women.

In summary, participants discovered and re-discovered their work environment even though for most they
considered it a familiar landscape. They became aware of the messages they were receiving from their work
environment and how these potentially impacted on their view of their place in the academy.

5. Discussion

The purpose of the Program was to increase women’s representation in senior roles in the university and
preceding development sessions had focused on a range of gender based issues we therefore had expected
that participants may have observed or become more aware of gender related career enablers and barriers in
their environment. However, as noted above, this was not the case. Whist elements of a gendered
environment were reported there was greater focus on the changing ways that universities promote
themselves and how they connect with their students and staff.

For many participants this was the first time they had consciously observed their work environment and
explored not only their immediate work area but had wandered further afield. The psychogeographic exercise
enabled them to reflect more deeply on how the broader work environment impacted on them, their sense of
place, their work, and on their collaborations with other staff and students.

As noted earlier the psychogeographical approach described above was part of the data collection process.
Semi-structured interviews were also conducted with twenty-three of the participants. The interviews
averaged around one hour in duration. Key themes relating to career enablers and barriers at the individual,
organisational and sector level were identified.

Comparing the time and resource commitments between the psychogeographical approach used and the
semi-structured interviews we noted that there was minimal administration required for the
psychogeographical exercise as participants were already attending the development program. The
psychogeography took 90 mins and the focus group took 90 mins. Both were embedded into the program. One
researcher facilitated the focus group while the other took detailed notes. The analysis took a further 3 hours.
There were no monetary costs. In contrast the interviews whilst revealing rich data required considerably
more resourcing (approximately 350 hours) to set up, conduct, transcribe and analyse the interviews. There
were costs involved relating to transcription and data management training.

From the psychogeography exercise we received rich data. It was apparent from the discussion that the
exercise had led to a deeper reflection on a range of aspects of university life including the physical aspects of
the environment. The complexities of university life are often taken for granted norms, which are
unquestioned and often unacknowledged organisational practises. Also often unquestioned is the opportunity
to reflect on and influence the university environment. The psychogeographical exercise provides, in our view a way for participants to become aware of their environment and how it impacts on them and to facilitate discussions on how they might wish to exercise agency and impact on their environment.

As noted, we also received rich data from the semi-structured interviews including observations of perceived differences between men’s and women’s careers and career success and perceived barriers and enablers to career success. Barriers included difficulty in building national and international profiles in resource constrained times, finding adequate time for research; poor line management; teaching being perceived as secondary to research; and constantly changing university expectations. Enablers included clear institutional signals for gender equity, supportive line management, role models and informal mentors and personal ambition.

Our observation is that both the psychogeographical approach and the semi-structured interviews provided rich but different information. The interview data revealed more gender aware and personal information relating to career barriers and enablers and what this meant for their career success. The psychogeography and focus group surprised us by revealing cultural differences that in the main had little to do with gender. The attraction of using the psychogeography coupled with the focus group is that it put another lens on ‘career success’ and how the visible manifestations of corporate culture impacts on this.

A further benefit of the information gathered from psychogeographical approach was the efficiency of the process. Both the researchers and participants had fun and were energised by the process. Within, less than half a day, we had gathered and analysed data that provided another dimension for the university to consider.

One of the challenges universities face is their need to appeal to a wide range of stakeholders. Images and stories that appeal to one cohort may have the potential to disenfranchise another. There was a sense from the participants that they were being forgotten as active participants in the shaping of the university’s identity as well as their own academic identity. The use of psychogeography has enabled the surfacing of a range of organisational symbols and images that shape identity and can act as both physical and psychological barriers. The insights gained from a diverse group wandering with purpose have the potential to challenge this status quo and create more inclusive spaces.

6. Conclusion

One of our aims was to explore the use of psychogeography as a means of gaining richer insights into the enablers and barriers of career success. Whilst the findings identified a number of barriers these related more to a sense of belonging and inclusion rather than gendered career barriers. The enablers identified related to the building of collegial networks beyond normal discipline or structural barriers. The barriers and enablers the participants identified do have the potential to impact on career success but perhaps not as directly as we had anticipated. However, their indirect impact should not be overlooked. Overall we found that psychogeography is a useful method to examine work environments as it surfaces shared insights and awareness that are difficult to surface via interviews alone.

We are cognisant that the group we worked with are high potential, confident, mid-career academic women who were asked in a safe environment to share their observations of how the work environment impacts their career success. We are also aware that prior to the group embarking on the activity they were given a simple but very clear mission and when they returned, the focus group was facilitated by a researcher with extensive experience in facilitation and thus could harness the excitement, energy and feelings in the room leading to a reflective process and a productive outcome.

Thus the elements we have identified for the successful application of the approach include the embedding of the activity into career development programs; inviting participants to ‘see’ perhaps for the first time their work environment and its surrounds; using a skilled a facilitator to debrief the exercise facilitating the discussion and providing some ideas for the group (Appendix 1) as a way to get the process underway. Such an approach has the potential to surface aspects of organisational culture that are often hidden, taken for granted or unacknowledged. The use of a psychogeographical approach as part of a larger data gathering exercise has added richness and valuable insights into the participants’ perception of their work environment and what this might mean in terms of their career development.
Appendix 1 - Psychogeography Activities

1. **Throw the dice**
Attribute each side of the dice with a different direction (N, S, E, W, up or down) and head off literally or investigate that space until you reach the next turn in the ‘road’ then throw the dice again. Allow up to 90 mins for this exercise. Take notes and photos (if you wish) to jog your memory.

2. **Freedom to Sit**
Set aside around 90 mins and go to one of the busiest section of campus where you could sit and enjoy the scene without buying or doing anything, even if you wanted to. Find a spot and just sit and look around. Why do you think none of the passers-by have taken advantage of your spot? How do people seem to treat you now you’ve sat down in this public sitting space? How comfortable do you feel just sitting and active in some way? Take notes of what you see and how you feel and photos (if you wish) to jog your memory.

3. **The “Eye Spy” Stroll**
Your task for this activity is to set around 90 mins to wander around noting any graffiti (yes, you can access toilets and read the walls), official signs, logos, media, bus stops, good citizenship, patrons at the Tavern. Try to go to places where you don’t usually go and observe what you may not usually see. Were there some places you felt more or less comfortable? Take notes and photos (if you wish) to jog your memory.

4. **Wander the Web (University’s intranet)**
If you don’t feel like literally strolling around you may choose to wander the University’s website. But remember you’re not there to attend to emails or research (turn off Outlook for the 60 – 90 mins you might want to set aside for this activity). Take notes of ease or difficulty of access to sites, imagine a new employee using it, observe the logos, key people, follow links, what surprises you? What disappoints you? Take notes and screen shots (if you wish) to jog your memory.

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Guidelines for Researchers Using an Adapted Consensual Qualitative Research Approach in Management Research

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Abstract: This article offers an approach to conducting qualitative research in Management Studies by providing researchers with guidelines to apply Consensual Qualitative Research (CQR). Although in the pursuit for structure, management researchers may be cautious of using qualitative research, CQR offers a structured qualitative research design option. The article explains how an adapted CQR design aligns well with most structured qualitative research methods. To describe an adapted CQR method, a research example based in Management Studies was used. This research example involved the development of a comprehensive theoretical framework that identified the various components of organisational reputation and reputation management and aimed at describing the role of social media within this framework. The primary research design of the research example consisted of two phases. The first phase comprised of an organisational policy document analysis. The second phase consisted of qualitative in-depth, semi-structured interviews with various departmental or divisional heads aimed at enriching the data collected using document analysis of specific policy documents. In both phases, a research team was employed as well as an auditing or verification system in keeping with the CQR method, where the research team considered the data codes, data coding, analysis and interpretation throughout the research process. This article further outlines the process followed and provides coding structures, which could be adopted for other similar studies. Ten CQR guidelines are proposed, which management researchers could apply when using document analysis in Management Studies as well as three guidelines for using interview transcripts from semi-structured interviews. The CQR research process foundation was the research team approach adopted when analysing, coding and reporting on data collected. The adoption of a method such as CQR, or a modified version thereof, allows for a team of researchers to institute a process of validation to the research process and the results by thoroughly examining their own individual understandings of the data.

Keywords: CQR, qualitative methods, management research, document analysis, semi-structured interviews

1. Introduction

Management researchers in general prefer to have structure in their research processes owing to the nature of their discipline which tends to involve procedure and organisation. As a result, this pursuit for structure may deter some researchers who prefer a more quantitative means of investigation from using qualitative research designs.

However, the rich value attributed to qualitative research is often placed in designs which are emergent in nature and developed relatively flexibly (Clissett, 2008, p.100) with a particular and ambiguous outcome rather than replicable and clearly-defined outcomes (Van Maanen, 1979, p.520) as with quantitative research methodologies. The value is thus attributed to the creation of new theory and knowledge in the discipline or topic and, therefore, could be of value in understanding emerging issues within the discipline of Management Studies, by providing an in-depth understanding into concerns related to people and organisations as well as their concepts and ideas.

Qualitative research can add value through rigorous, structured research designs. One such qualitative research design is Consensual Qualitative Research (CQR), which aligns well with most structured qualitative methods. The model of introducing a step-by-step process to collecting, coding, analysing and rechecking the research data has a number of important advantages in relation to the philosophy behind research designs and bridges the gap between realism and relativism by satisfying the need for “partly-replicable, robust and cumulative” research by calling for quasi-statistics or numerical classification of results (Yeh and Inman, 2007, p.374).

In this article, an adapted approach to CQR is offered to management researchers by providing a more rigorous approach to conducting qualitative research and offers the researcher guidelines to apply CQR. The article uses a case study conducted in Management Studies and presents the general process applied for data collection, data coding and data analysis. Examples of documents and semi-structured interviews are used as tools for data collection. The important role of the research team in this process is also explained. The article

further develops an adapted CQR approach which is offered as a guideline that could be replicated in other Management Studies, both on its own as a pure qualitative study or as an addition to a quantitative study.

2. Literature review

2.1 Value of Qualitative Research in Management Studies

The value of qualitative research is to explain and recognise social phenomena in terms of the significance people bring to them. Du Plooy-Cilliers, Davis and Bezuidenhout (2015, p.174) identify that qualitative researchers are interested in the depth of human experience, including all the personal subjective peculiarities that are characteristic of individual experiences and meanings associated with the particular phenomena. Furthermore, qualitative researchers are engaged in scientific discovery as well as the creation of new theory and are not just testing theory (Dougherty, 2015, p.608).

Therefore, qualitative research could be the most appropriate method when the research being conducted attempts to explain the unexplained; where the nature of the research is broad and where previous theories do not exist, or are incomplete (Patton, 2002, p.22). This methodology provides management researchers with an added appeal by providing an in-depth understanding into concerns related to people and organisations as well as their concepts and ideas. As a result, qualitative methodology is instrumental in appreciating multifaceted interactions between individuals and their environment and how these phenomena influence outcomes (Anderson, Leahy, Delvalle, Sherman and Tansey, 2014, p.88). In addition, Kalou and Sadler-Smith (2015, p.629) explain that organisations need to be language-mediated domains of social interaction in which communication constructs organisational realities and produces organisational phenomena. Therefore, organisational researchers require methods for interpretive field studies (Kalou and Sadler-Smith, 2015, p.629).

The crucial features of qualitative research can be identified as the appropriate choice of applicable methods and initial theories; the appreciation for and analysis of different perspectives; the researchers' reflections on their research as part of the process of knowledge production and the variety of approaches and methods that can be adopted (Flick, 2009, p.14). Qualitative researchers are presented with a number of options for conducting research (Creswell, Hanson and Clark, 2007, p.236). Creswell et al (2007, p.236) stress that the process of selection should begin with the “inquiry process, with the philosophical assumptions about the nature of reality (ontology) and how they know what is known (epistemology), the inclusion of their values (axiology), the nature in which their research emerges (methodology) and their writing structures”.

Within qualitative investigations, researchers characteristically identify with a specific epistemological paradigm, within which various theoretical frameworks exist and further include representative methods (Anderson, et al, 2014, p.88). Thus, for qualitative researchers, the ideal method to understand a specific phenomenon is to approach measurement within its own context and develop questions as the researcher becomes familiar with the research context (Krauss, 2005, p.759). However, Maree (2007, p.37) stresses that although the value of the data obtained in qualitative studies rests in its rich comprehensive detail, the results obtained from a qualitative investigation need to remain similar, even when they are obtained on different occasions or by different forms of the same assessment or measuring mechanism. Therefore, it is essential to facilitate quality assurance, namely, data verification. According to Cho and Trent (2006, p.322), in seeking trustworthiness for qualitative research, researchers need to attend to research credibility, transferability, dependability and conformability. Furthermore, qualitative researchers need to view research validity and reliability as a transactional process consisting of techniques or methods by which misunderstandings can be adjusted and thus fixed (Cho and Trent, 2006, p.322) leading to research trustworthiness. Du Plooy-Cilliers et al (2015, p.258) understand the rigorous process of coding qualitative data as imperative for obtaining research trustworthiness. Zhang and Wildemuth (2009, p.309-311) also stress the importance of coding and analysing qualitative data in eight stages, first, by preparing the data collected, followed by defining the coping unit to be analysed and developing categories and coding scheme or conceptual framework. The researcher then tests the coding schemes on sample data and follows with coding all the data. The data is then assessed and conclusions are drawn from the coded data. Finally, the researcher reports on the methods and findings.
2.2 Components of Consensual Qualitative Research (CQR)

The CQR method, used frequently as a qualitative inquiry method in counselling psychology research, was designed and used by Hill (2012) and Anderson et al (2014, p.89-90) who prescribed the use of semi-structured interviews. The basic premise behind this particular research method is highlighted by Barden and Cashwell (2014, p.45) as the use of “multiple researchers, reaching consensus as a team, and the systematic methodology of examining the representativeness of results across cases”.

Hill, Thompson and Williams (1997, p.523) describe the CQR process as involving three general steps:
1. Responses to open-ended questions from questionnaires or interviews for each individual case are divided into domains (or topic areas)
2. Core ideas (or abstracts or brief summaries) are constructed for all the material within each domain for each case
3. Cross-analysis, which involves developing categories to describe consistencies in the core ideas within domains across cases.

Therefore, according to Lee, Lee, Park and Lee (2017, p.508), basically each researcher develops domains and core ideas from the data collected from various interviews. These domains and topics are then used to group or cluster the data, and core ideas are summarised and reviewed by an auditor through the consensus process. Thus, CQR can be explained as a “data-driven qualitative methodology using a team consensus approach and includes a systematic evaluation of thematic representativeness across multiple cases” (Depner, Grant, Byrwa, Breier, Lodi-Smith, Kerry and Luczkiewicz, 2017, p.201).

For Hill et al (1997, p.519), CQR fits well within the tradition of qualitative research in that it shares several features in common with the methods used in qualitative research. The founding researchers elaborate further on this and align the CQR method with other qualitative research designs and identify the key components that apply to CQR. Some similarities across the two methods (qualitative research methodology and the CQR method) could include, inductive reasoning and conclusions being built on the data collected, the reliance on words to describe phenomena as opposed to numbers, identifying and studying a small number of cases intensely with the aim of appreciating the whole case to understand the specific parts, becomes the focus. An additional similarity would be to generally consider the open-ended questions so as not to restrict the responses of respondents. The composition of the research team and the process they follow in the gathering, analysing and presenting of data also offers some similarities. For example, all judgements are made by a primary team of researchers so that a variety of options are available about each decision. Consensus amongst the research team is required so that the best possible construction is developed for all the data and that auditors are used to check the consensus judgements to ensure that the primary team does not overlook important data. Finally, the primary research team continually goes back to the raw data to make sure that their results and conclusions are accurate and based on the data (Hill et al, 1997, p.520-521).

Hill (2012) points out that this collectivist approach to organising and processing of qualitative analysis has a number of important advantages in relation to philosophy and bridges the gap between realism and relativism by satisfying the call for “replicable, robust and cumulative” research by calling for quasi-statistics or numerical classification of results (Yeh and Inman, 2007, p.374). However, Stiles (1997, p.589) adds that Hill et al (1997) did not expect researchers using CQR to come to the same results when collecting and analysing data, but emphasises that the truth relies in the commonality of the different perspectives. Thus, the CQR approach allows the researchers to identify categories that encompass responses by all of the participants and advocates the reporting of the number or portion of the cases that fit each category.

3. Applying an adapted method of CQR in Management Studies

To explain the adapted method of CQR, a research example based in Management Studies was used. An overview of the research example is first provided before the process of using the CQR method is described.

3.1 Overview of the research example

Organisations increasingly measure their assets in terms of intangibles, such as knowledge, brand visibility and customer loyalty and not only by what the organisation makes or does, but how it is perceived (Money and Gardiner, 2005, p.43) through organisational reputation. Thus, organisational reputation is a result of the interactions between an organisation and its stakeholders and of stakeholder-stakeholder communication
Social media provide organisational stakeholders with tools for integral listening platforms that not only allow practitioners to monitor what is being said (McAllister, 2012, p.319), but also provide an interactive platform for stakeholders to share concerns and ideas about the organisation. Websites and new media technologies have had a revolutionary impact on the management of organisations and ultimately on the way organisations perceive and manage organisational reputation. Managing organisational risk with respect to organisational reputation and the concept of social media management through organisational policy development are important issues that assist organisations to avoid possible crises and maximise its potential. However, as a result of the "infancy level" of social media in the corporate world, little research has been done to investigate the adoption of social media and associated implementation models (Chikandiwa, Contogiannis and Jemere, 2013, p.367) in relation to organisational reputation management.

Social media platforms are emerging as an important part of the daily operations within Higher Education Institutions (HEIs), notably universities, where they are being used as a significant tool for improved communication and enhancement of services, as with other organisations. HEIs can maximise this unique set of tools to the benefit of their students through improved service delivery as well as by assisting staff and students to develop their research and academic reputation, thus indirectly enhancing the institution’s reputation. At the same time, it implies maximising the benefit of social media as an organisational tool to assist in the operation of the organisation. When making the comparison between the corporate environment and HEIs, clients in the corporate environment are seen as external stakeholders only, while the students within the HEIs should be appreciated as both external and internal stakeholders. It is for this reason that HEIs are ethically required to protect their students from the possible harm that could be caused by the wrongful use of social media by regulating and educating students and staff about the power and legal issues arising from the irresponsible use of social media, while also being mindful of creating an environment for freedom of speech. In addition, universities have a keen interest in retaining contact with their Alumni stakeholders, and social media have become a key networking tool for this.

Therefore, understanding the unique dynamics of the use of social media within higher education becomes the cornerstone in the provision of guidelines and policy development for the appropriate use of social media to achieve a desired organisational reputation. Against the background of reputation management theory and the use of social media, the primary objective of this research was to investigate organisational reputation management in South African Higher Education Institutions (SAHEIs) as manifested in the social media policies of the SAHEIs.

The research was built on a comprehensive theoretical framework that identifies the various components of organisational reputation and reputation management and aims at understanding the role of social media within this framework. This structure provided the foundation for analysing organisational social media policies and formulating an understanding of the development of such within SAHEIs by appreciating the advantages and potential risks associated with organisational social media use in organisational reputation management.

The most compelling reason for the research being set in the constructivist research paradigm is that it takes into context the framework and the setting, and ultimately searches for a deeper understanding of the phenomenon under investigation, which is the role social media could play in the reputation management of HEIs in South Africa. There is scant evidence that a comprehensive systematic empirical analysis of the use of social media in support of reputation management at HEIs in South Africa has ever been conducted. Furthermore, the research was well-matched within the qualitative approach given the exploratory nature of investigation (Barden and Cashwell, 2014, p.45).

The discovery of theory underpinning this research was conducted mainly through the analysis of secondary sources, namely, the social media policy documents of selected organisations, employing a document analysis tool. Document analysis is used as a systematic procedure for reviewing or evaluating documents and is often used in combination with other qualitative research methods (Bowen, 2009, p.27-28). In addition, in-depth, semi-structured interviews with key personnel were conducted to clarify and provide further insight into the situation. The document analysis tool asked questions about the way specific social media policy structures were deployed in the social construct of institutional management. This particular social construct provided insight into the unique situation that managers faced when investigating the potential advantages and risks of
social media distribution and usage within their organisation as a significant factor in institutional reputation management.

In an attempt to address the objectives of this research and to conduct the practical aspects of the research, a qualitative research design was used. Furthermore, the research was positioned within a social institutional construct as the study aimed to emphasise the processes and meanings of the phenomenon under examination (Noor, 2008, p.1602) and explain the unique situation that managers face when looking at reputation management within HEIs. In addition, the qualitative research methodology allowed for the framing of a context for the research, which ultimately lead to a deeper understanding of that particular situation, namely, the role that social media may play in organisational reputation management of HEIs in South Africa and the way in which this is managed by these organisations.

3.2 Process using the adapted CQR method

The primary research design of the study was presented in two main phases. The first phase comprised a document analysis of organisational policy documents. The second phase consisted of qualitative in-depth, semi-structured interviews with various departmental or divisional heads aimed at enriching the data collected by means of the document analysis (in this case, the policy documents). It also provided an opportunity to verify the findings of the analysis concluded in the former phase by either confirming or disputing them and providing further insight.

In both phases, a research team was employed as well as an auditing or verification system in keeping with the CQR method, where the research team considered the data codes, data coding, analysis and interpretation throughout the research process. A research team was established, consisting of the primary researcher, research assistant and a senior academic within Management Studies. Through the process of incorporating an adapted version of the CQR method, research trustworthiness and consistency in coding and analysis was achieved.

3.2.1 Phase One: Document analysis

To conduct a document analysis of organisational policy documents, the study reflected on three comparative sample groups, namely, an international sample (from the US and UK), a sample from a different sector but within the same country as the investigative sample (the SA financial sector) and the main sample under investigation (SAHEIs). Thus, the study reflected on policy documents from 30 international organisations, which was considered a comprehensive sample for presenting an accurate account of the international perspective (international sample). A total of nine organisational policy documents were consulted from a different sector within South Africa (for internal comparability purposes). A total of 23 policy documents were considered from 23 formally-established South African organisations, which formed the bases of the investigation.

As a starting point, a preliminary study (pilot) was undertaken to determine the existence and/or accessibility of the organisational policies (and other documents) available to the public on the Internet. Focus on the accessibility of the documents on which the analysis for this research was based were obtained primarily through the Google search engine. The search involved using a number of search strings, for example, ‘social media policy HEI’, ‘Web 2.0 policy HEI’ and ‘Social networking policy HEI’. The pilot then produced the required results. The same process for gathering the policy documents was used for three different comparable sample groups of the study. The organisational policy documents that were not available via the Google search engine were obtained by means of a direct request to a staff member within the particular organisation. The documents considered were collected, printed and filed according to their respective groups.

The research team considered the data described in the documents and established the original set of coding themes from a pilot sample of the larger sample frame and the literature consulted. The research assistant and primary researcher established the original set of themes and categories, while the senior academic reviewed the process.

The initial theme identified the location, namely, where the documents were positioned within the organisations. Codes were allocated to three central policy location categories, and the documents were coded accordingly. A member of the research team allocated the codes to the documents and another
member of the team cross-checked the process followed and assigned the total number for each category. The senior researcher supervised the final process.

The documents were then categorised within the second theme level, which considered the document audience. Therefore, who were the intended “audiences” of the policy? Again, codes were allocated according to whom the policies were addressed. The documents were then categorised according to various stakeholders they aimed to address. A member of the research team would classify the documents and another research team member would verify the process followed and allocate totals to these codes. Finally, the senior researcher supervised the process.

The final process involved in analysing the documents considered the analytical themes and theoretical concepts inherent in the documents. The coding categories were developed from the literature related for the study. Together the research team consulted on the main themes outlined in the literature and developed codes that were designed as “questions” posed to the documents and varying “responses” were predetermined to provide the sub-categories. A rigorous process of joint consultation by the research team was employed to code the documents (data) to determine the number of documents allocated to the subcategories. The same coding process was used for all three sample groups. Care was taken by the research team to code and verify the interpretation of the coding procedure while a senior researcher considered the overall activity.

Table 1 shows the coding structure and categories that were used to code and analyse the data obtained from the organisational policy documents from the selected sample groups.

Table 1: Coding structure for document analysis

<table>
<thead>
<tr>
<th>Coding Theme</th>
<th>Coding Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theme Level 1: Categorises policies into three distinct category levels according to where policies are located/housed within the host organisation.</td>
<td>Category 1</td>
</tr>
<tr>
<td></td>
<td>Category 2</td>
</tr>
<tr>
<td></td>
<td>Category 3</td>
</tr>
<tr>
<td>Theme Level 2: Categorises documents according to their main audience.</td>
<td>Stakeholder 1</td>
</tr>
<tr>
<td></td>
<td>Stakeholder 1</td>
</tr>
<tr>
<td></td>
<td>Stakeholder 1</td>
</tr>
<tr>
<td></td>
<td>Stakeholder 1</td>
</tr>
<tr>
<td>Theme Level 3: Questions are developed from the literature and proposed to the documents.</td>
<td>Theme 1 identified from literature</td>
</tr>
<tr>
<td></td>
<td>Theme 2 identified from literature</td>
</tr>
<tr>
<td></td>
<td>Theme 3 identified from literature</td>
</tr>
<tr>
<td></td>
<td>Theme 4 identified from literature</td>
</tr>
<tr>
<td></td>
<td>Theme 5 identified from literature</td>
</tr>
<tr>
<td></td>
<td>Theme 6 identified from literature</td>
</tr>
</tbody>
</table>

Source: Author’s own compilation

Table 1 outlines the coding structure and the coding details applied during for data analysis process for the organisational policy documents. Codes were then allocated to the themes, categories as well as subcategories and the documents were coded accordingly. The team of researchers performed a final check of the coded data and compared the coded data across the cases and tabulated the number of cases that fitted within the codes for reporting of the data.
3.2.2 Phase Two: Semi-structured interviews

In addition to the analysis of the organisational policy documents, the study made use of semi-structured interviews as an additional source of data, with the aim of providing further insight into the phenomenon being investigated. These interviews, with key informants, provided more detailed information on matters which would not have been available in the policy documents. It was important to note that interviews were only conducted with key organisational personnel from the main study sample group and not the comparative samples.

Purposive sampling was used and key employees were identified. This provided the study with further insight into the development of the organisational policy documents and how the main study sample implemented their organisational policies.

The interviews were conducted using a discussion guide generated from joint consultation with the research team and comprised of different sections pertaining to the research topic, problem or question under investigation, such as the development of a reputation management position and the use of social media within an institution. The guide contained five standardised open-ended questions, but allowed the researchers to deviate and ask further probing questions based on the respondents’ responses (Du Plooy, 2009, p.360).

All interviews were transcribed by the research team. A rigorous process of coding the interview documents was applied across all the transcribed documents. Broad categories of responses were developed according to the responses to the questions posed to the participants. The research team categorised the documents according to the themed responses and tabulated the replies across the samples. Once again, the senior researcher performed a verification process to ensure consistency was achieved. The same coding process was used for all interviews. Care was taken by the research team to code and verify the interpretation of the coding procedure, while a senior researcher considered the overall activity.

Table 2 illustrates an example of how the five questions posed to the participants relates to the broad coding structure that was used to code and analyse the data obtained from the transcribed interviews for this case.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Question 1</th>
<th>Question 2</th>
<th>Question 3</th>
<th>Question 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Theme 1 – central concept identified/highlighted related to question 1</td>
<td>- Theme 2 – central concept identified/highlighted related to question 1</td>
<td>- Theme 3 – central concept identified/highlighted related to question 1</td>
<td>- Deviations from the above themes</td>
<td></td>
</tr>
<tr>
<td>Question 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Theme 1 – central concept identified/highlighted related to question 2</td>
<td>- Theme 2 – central concept identified/highlighted related to question 2</td>
<td>- Theme 3 – central concept identified/highlighted related to question 2</td>
<td>- Deviations from the above themes</td>
<td></td>
</tr>
<tr>
<td>Question 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Theme 1 – central concept identified/highlighted related to question 3</td>
<td>- Theme 2 – central concept identified/highlighted related to question 3</td>
<td>- Theme 3 – central concept identified/highlighted related to question 3</td>
<td>- Deviations from the above themes</td>
<td></td>
</tr>
<tr>
<td>Question 4</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>- Theme 1 – central concept identified/highlighted related to question 4</td>
<td>- Theme 2 – central concept identified/highlighted related to question 4</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Table 2 outlines the coding structure and the coding details applied during the data analysis process for this case. The team of researchers compared the coded data across the all cases and tabulated the number of cases that fitted within the codes and themes developed from the codes. Careful consideration was taken not to exclude distinct points raised by respondents. The senior researcher audited the process by checking the coding and validating the categorisation.

3.2.3 Reporting the research

To provide consistency and uniformity across the three sample groups, the reporting process provided the same coding and analysis process for each sample group. In addition, interviews were conducted with key personnel to gauge their views and provide supporting information to the document analysis. Figure 1 outlines the process followed in both phase one and two of the study and reveals the input of CQR in the process.

**Phase One: Document analysis**

<table>
<thead>
<tr>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Theme 3 – central concept identified/highlighted related to question 4</td>
</tr>
<tr>
<td>- Deviations from the above themes</td>
</tr>
<tr>
<td>Question 5</td>
</tr>
<tr>
<td>- Option to share additional information outside the prescribed questions</td>
</tr>
</tbody>
</table>

Source: Author’s own compilation
Phase Two: In-depth, semi-structured interviews

**STEP 1: Sampling and data gathering**
Conduct semi-structured, in-depth interviews with key personnel to provide more information on matters not reflected in the documents.

**STEP 2: Coding**
Broad categories of responses are developed according to the responses to the questions posed to the participants. The research team categorised the documents according to the themed responses and tabulated the replies across the samples.

**STEP 3: Data analysis**
A cross-analysis, which involves developing categories to describe consistencies in the core ideas within domains across cases conducted.

Establish codes used. Auditor checks the codes decided on.

Compare the data across cases and tabulate the numbers of cases that fit within the codes. Auditor checks the information coded and analysed.

Figure 1: Research design using an adapted method of CQR

**Source: Author’s own compilation**

Figure 1 shows an adapted module of CQR and the input of the research team as well as the auditor in each step of the research process related to both the document analysis and interview phases.

As this was a qualitative study, the concepts expressed in the documents as well as the underlying approach and direct responses from the participants were used as the primary focus when analysing and reporting on findings. However, the analysis approach and reporting provided further explanation, through numbers, as a complementary process to qualitative information presented, and was not meant to be a generalisation of a larger sample. Maxwell (2010:478) argues that the use of numbers in conjunction with qualitative methods and data does not make a study one of mixed-method research. Using numbers in the sense of simple counting of items are legitimate and an important type of data for qualitative research.

The research team and auditing process was fundamental in reporting the findings and selecting the most appropriate citations to report on the themes and categories to provide an in-depth understanding of the case. The accuracy related to the numerical reporting was checked and rechecked by the research team and validated by the auditing member. Thus, allowing for both an overview of the data results and the detailed reporting of the findings.

**4. Guidelines to employ an adapted CQR method in Management Studies**

The following guidelines could be proposed based on the research example using document analysis:

1. Print and file all documents according to the sample groups.
2. Use a research team (researcher and senior academic in Management) to determine original set of coding through a small sample of the larger sample group.
3. Identify the location of where the documents were obtained by using an open coding process.
4. Allocate codes to these categories and code the documents accordingly.
5. Categorise the documents within a second level of coding and classify according the selected codes identified by the research team.
6. Allocate codes to these categories and code the documents accordingly.
7. Identify the central themes or theoretical codes from the documents. The coding themes are developed from the literature, which were designed as actual questions posed to the documents and varying “responses” are then predetermined to provide the sub-categories.
8. Identify classifications emerging from the main themes applied to the documents within the study.
9. Allocate codes to these themes and code the documents accordingly.
10. Compare the coded data across the cases and tabulate the number of cases that fit within the codes with team of researchers.
Guidelines for interview transcripts from semi-structured interviews include:

1. Transcribe all interviews and write-up the responses provided according to the questions asked.
2. Categorise each response according to the questions asked and coded.
3. Compare the coded data across the cases and tabulate the number of cases that fit within the codes and themes developed by team of researchers, but careful consideration should be taken not to exclude distinct points raised by participants.

5. Conclusion

The article demonstrates, through a research example, the opportunities offered when using a qualitative methodology in a management study. The rich, contextual data extracted and analysed from using collection methods such as document analysis, focus groups and interviews can provide new opportunities and understandings in the area of management studies. As in the case of the example provided, these collection methods, namely, document analysis and selected interviews, were fundamental tools to explore the significance of the contextual and developmental nature of the organisational policy documents sampled.

However, establishing a replicable method or process to facilitate such qualitative studies provides a value to knowledge generation and knowledge development that aligns itself with the replicable nature offered in reliability, which is often associated with quantitative research methodologies. Thus, the adoption of a method such as CQR, or a modified version thereof, allows for a research team to institute a process of validation to the research process and results through examining their own individual understanding of the data. This could be done through individual effort, and then consulting with the research team who consider the final codes and categories, as proposed by Hill et al (1997). It could also include a process which requires teamwork with initial consultation on the process to be followed. The primary procedure of using a research team and the consulting of an independent auditor to authenticate the results by checking the results continually should become the foundation to the research process. The article thus offers clear guidelines that can be applied to other such Management Studies where similar collection tools are used.

The additional benefit of implementing such a process-based approach, provides a disciplinary study, such as Management Studies and other disciplines closely-aligned to qualitative methodologies, with an alternative to the traditional positivistic/realist paradigm that is familiar to these disciplines. Furthermore, the inclusion of such inquiry methods into management research will offer rich contextual information and the development of new knowledge.

References


Delphi Method Variants in Information Systems Research: Taxonomy Development and Application

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Abstract: Delphi is a frequently used research method in the information systems (IS) field. The last fifteen years have seen many variants of the Delphi Method proposed and used in IS research. However, these variants do not seem to be properly derived; while all variants share certain characteristics, their reasoning for differentiation inconsistently varies. It seems that researchers tend to create “new” Delphi Method variants, although the underlying modification of the Delphi Method is, in fact, minor. This leads to a heterogeneity of Delphi Method variants and undermines scientific rigor when using Delphi. The study addresses this deficit and (1) identifies different variants of Delphi and determines their characteristics, (2) critically reflects to what extent a clear distinction between these variants exists, (3) shows the clearly distinguishable Delphi Method variants and their characteristics, (4) develops a proposed taxonomy of Delphi Method variants, and (5) evaluates and applies this taxonomy. The proposed taxonomy helps clearly differentiate Delphi Method variants and enhances methodological rigor when using the Delphi Method.

Keywords: Delphi, Delphi method characteristics, Delphi method variants, Information systems research, Taxonomy, Taxonomy development.

Please note: An earlier and shorter version of this paper was published in PACIS 2016 proceedings.

1. Introduction

Delphi is a method used to examine a complex problem through a group of experts. Experts are chosen as a data source in Delphi because of their special knowledge and experience regarding the issue under investigation. The experts provide data through questionnaires over several iterations. After each iteration, controlled feedback with the anonymized consolidated responses is provided to all participants. Consequently, experts can reflect and revise their opinions and judgements for the next iteration. The process stops when the research questions are answered. This may, for instance, be the case when consensus is reached, theoretical saturation is achieved, or sufficient information has been exchanged (Skulmoski, Hartman and Krahn, 2007; Linstone and Turoff, 1975; Delbecq, van de Ven and Gustafson, 1975).

The Delphi Method was first described in 1963 by Dalkey and Helmer, who conducted a Delphi study at the RAND corporation to apply expert opinions to a military problem. Over the years, Delphi has been applied in many research areas such as business, education, healthcare, and IS (Gupta and Clarke, 1996; Mitchell, 1991; Gallego and Bueno, 2014). The number of studies in the IS field using the Delphi Method is increasing (Gallego and Bueno, 2014), and Delphi appears to be an established method in IS research (Rowe and Wright, 1999; von der Gracht, 2012; Skulmoski, Hartman and Krahn, 2007; Gray and Hovav, 2008). Studies using the Delphi Method have, e.g., identified key IS management issues (Brancheau, Janz and Wetherbe, 1996), developed a descriptive framework of knowledge manipulation activities (Holsapple and Joshi, 2002), and investigated the IS outsourcing provider selection process (Chang et al., 2012). Although our paper focuses on IS research, we assume that similar observations and conclusions can be drawn in other disciplines that have adopted the method and are increasingly using it.

From a methodological perspective, researchers have proposed many variants of the Delphi Method. Main variants include Classical Delphi (Dalkey and Helmer, 1963), Decision Delphi (Rauch, 1979), Policy Delphi (Linstone and Turoff, 1975), and Ranking-Type Delphi (Delbecq, van de Ven and Gustafson, 1975; Schmidt, 1997). Furthermore, researchers have modified these main variants and proposed sub-variants (Chakravarti et al., 1998; Chang, 2006; Landeta and Barrutia, 2011; Tapio, 2003; Gupta and Clarke, 1996; Paré et al., 2013). While the method’s modifiability can be considered as one of its advantages, “there is the danger that too much modification without ensuring rigor may threaten the validity of the original research approach” (McKenna, 1994, p. 1222), which may negatively impact its quality and credibility (Gupta and Clarke, 1996).
There are suggestions to improve the Delphi Method’s rigor (e.g., Gallego and Bueno, 2014; Paré et al., 2013). However, these publications focus on improving the rigor of specific Delphi Method variants but do not contribute to clearing the ambiguity regarding the differentiation and definition of Delphi Method variants. The objective of this research is to address this gap and propose a taxonomy of Delphi Method variants. Thus, our study contributes to enhancing rigor in applying the Delphi Method in IS research. Our corresponding research questions are:

(RQ1) What Delphi Method variants are differentiated in IS research?
(RQ2) To what extent does a clear distinction exist between these variants?
(RQ3) What are clearly distinguishable Delphi Method variants and their characteristics?
(RQ4) How can a taxonomy be set up to clearly differentiate Delphi Method variants?
(RQ5) How can the taxonomy be applied to existing and new research to define Delphi Method variants purposefully and unambiguously?

The paper is organized as follows. Section 2 describes findings related to Delphi Method variants and their characteristics in IS research (RQ1). An analysis of these findings addressing RQ2 and the description of clearly distinguishable Delphi Method variants and their characteristics (RQ3) follows in Section 3 and Section 4. At the end of Section 4, the taxonomy is developed and presented (RQ4). The resulting taxonomy from Section 4 is then evaluated twice (RQ5). In Section 5, we apply it to IS research published in three highly ranked IS journals. In Section 6, we evaluate the practical applicability of the taxonomy by using it to define the specific Delphi design for one of our research projects. Section 7 concludes the study by summarizing research contributions, assessing its limitations, and suggesting potential avenues for future research.

2. Delphi method variants in IS research

A systematic literature search was used to identify Delphi Method variants and their characteristics in IS research. The first step addresses the identification of relevant databases. Vom Brocke et al. (2009) recommended searching databases that provide access to leading IS journals. To meet these requirements, the search process included the databases AIS electronic library, EBSCOhost (Business Source Complete), IEEE Xplore, ProQuest, and ScienceDirect. These databases provide access to journal articles and conference papers published in leading IS journals and conferences, according to the IS Senior Scholars Basket of Journals (Association for Information Systems, 2011), the MIS Journal Ranking (Association for Information Systems, 2013), and the most preeminent IS conferences (Association for Information Systems, 2017).

The databases were queried using a keyword-based search with the search string: “Delphi AND Information Technology” and “Delphi AND Information Systems”. To obtain as many Delphi Method-based studies as possible, we did not limit the search timeframe. Further settings included a boolean/phrase search mode, choosing the search field “title, keyword, abstract” and restricting results to scholarly peer-reviewed articles (Levy and Ellis, 2006) of more than four pages. We used a subject (thesaurus) filter and classification codes in some databases to exclude non-IS research. Finally, we used a forward-backward search approach (Webster and Watson, 2002) to determine prior articles and identify further articles.

An evaluation of sources ensured that only relevant research articles were included (vom Brocke et al., 2009). Overall, we identified 104 literature items consisting of 85 journal articles, 13 conference papers, and six monographs. These items can be classified into two subgroups: “Delphi Method” (31 journal articles, six monographs, and three conference papers) and “Application of Delphi Research” (54 journal articles and 10 conference papers). Five studies from the 40 studies in the Delphi Method subgroup define and differentiate 13 Delphi Method variants (cf. Table 1). The remaining literature items of this subgroup focus on characteristics of Delphi in general or specific Delphi Method variants that are included in Table 1 (follows).
Table 1: Overview of the heterogeneous classification of Delphi Method variants (reference in each column reflects the primary source for each variant, if identifiable)

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</tr>
</thead>
<tbody>
<tr>
<td>Rauch (1979)</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Mitchell (1991)</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Keeney (2010)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Paré et al. (2013)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Gallego et al. (2014)</td>
<td>X</td>
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<td>Total</td>
<td>4</td>
<td>4</td>
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<td>1</td>
<td>X</td>
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</table>

Rauch (1979) suggests a distinction between three kinds of Delphi Method variants: Classical Delphi (Dalkey and Helmer, 1963), Policy Delphi (Linstone and Turoff, 1975), and Decision Delphi (Rauch, 1979). He describes Classical Delphi as the “well-known-basic Delphi approach [...] [seeking] to obtain a group opinion through an anonymous, multilevel group interaction” (Rauch, 1979, p. 160). Classical Delphi serves as a forum for facts to seek a consensus among homogeneous groups of experts. In contrast, Policy Delphi serves as a forum for ideas seeking to generate the strongest possible opposing views. It is a tool for the analysis of policy issues and not an approach for making a decision (Linstone and Turoff, 1975). To prepare and support decisions is the objective of the third variant of Delphi. Facts and ideas are thrust into the background so that Delphi serves as a forum for decisions (Rauch, 1979).

Mitchell (1991) identified further variants. He differentiates an Electronic Delphi that uses information systems or computer simulations to conduct the questionnaire iterations. Furthermore, he characterizes a conversational Delphi, the so-called EFTE (Estimate, Feedback, Talk, Estimate) Delphi (Nelms and Porter, 1985). The special attribute of this variant is direct interaction (face-to-face) with the respondents, which provides immediate feedback but does not try to force a consensus.

The variant Modified Delphi includes a combination of Delphi with another method, for example, scenario writing (Chakravarti et al., 1998). Keeney (2010) describes Modified Delphi as a modification of the Classical Delphi technique, combining it with, e.g., employing a focus group, interviews, or results of a review to develop the first round. In addition, Keeney (2010) characterizes an Electronic, Online, and Technological Delphi, which are all conducted using some form of information technology as well as an Argument (Kuusi, 1999) and Disaggregative Policy (Tapio, 2003) Delphi. While the objective of an Argument Delphi is to develop relevant arguments and expose underlying reasons for different opinions on a specific issue, Disaggregative Policy Delphi constructs future scenarios in which panellists are asked about their probable and preferable future (Hasson and Keeney, 2011). Finally, Keeney (2010) characterizes a Real-Time Delphi (Gordon and Pease, 2006) without distinct questionnaire iterations; expert responses are updated and provided to participants in real time through an information system (Gordon and Pease, 2006).

In addition to the variants of Delphi reviewed above, Paré et al. (2013) further differentiate a Ranking-Type Delphi (Schmidt, 1997). This variant is used to reach a group consensus about the relative importance of issues. To identify and rank key issues, this Delphi Method variant uses an iterative-controlled feedback process that includes the brainstorming, narrowing-down, and ranking process steps (Schmidt, 1997).

Gallego and Bueno (2014) identified a further simplified variant of Delphi, Mini-Delphi. It consists of a physical meeting of experts to conduct individual estimations with a subsequent debate regarding the aggregated answers (Gallego and Bueno, 2014).
In summary, it is apparent that a multitude of Delphi Method variants have been defined and are used in IS research (Paré et al., 2013; Skulmoski, Hartman and Krahn, 2007; Hasson and Keeney, 2011). However, the differentiation criteria seem to be inconsistent, e.g., based on research objective, type of rounds, data-gathering approaches, and facilitating technologies. This raises the question as to what extent a clear distinction between these variants really exists (RQ2).

3. Analysis of delphi method variants

Following Rowe and Wright (1999), as well as Skinner et al. (2015), only those studies that show four generic characteristics should be classified as Delphi studies. These characteristics are:

1. **Anonymity of participants**: Responses from the series of questionnaires are anonymized by the research team. This anonymity allows group participants to express their judgements individually and without social pressure that could arise from dominant individuals. Furthermore, negative influences of individual responses associated with personalities or statuses of the participants can be excluded through anonymized responses.

2. **Controlled feedback**: Controlled feedback is provided between each questionnaire iteration. Each participant is informed about the thoughts of their anonymous fellow participants. The research team deletes all irrelevant information.

3. **Iterative process**: The questionnaire includes a number of iterations. Each iteration constitutes an opportunity for participants to reflect and revise their judgements with the help of the information they receive from the rest of the participating experts.

4. **Statistical aggregation of group response**: All views contribute to form part of the answer after the final round. A quantitative and statistical treatment of these answers can then be carried out.

According to Hasson and Keeney (2011, p. 1698), “Within each Delphi [Method] type, the characteristics of the Delphi can also differ, for example, the number of rounds, the level of anonymity and feedback given, as well as the inclusion criteria, sampling approach or method of analysis”.

We use the four generic characteristics for our analysis and refine them based on the specifications of Delbecq, van de Ven and Gustafson (1975) and Kuusi (1999) to develop more detailed and specific characteristics. **Anonymity** subsumes panellist and individual responses. **Controlled feedback** means that information about panellists’ answers is fed back to the panellists; this feedback could be provided by a facilitator running the Delphi. An **Iterative process** contains a series of rounds; it uses a questionnaire and gives participants the opportunity to rethink opinions between each iteration. Finally, questions are formulated so that a quantitative and **statistical aggregation** of the answers can be carried out. In addition to these characteristics, we identify the **focus and objective** of each Delphi Method variant and attempt to identify its distinctive nature. These characteristics are used to analyse the 13 Delphi Method variants (cf. Table 2, left column).
Table 2: Analytical result according to Delphi Method variants and their characteristics

<table>
<thead>
<tr>
<th>Characteristics/Method variant</th>
<th>Argument Delphi</th>
<th>Decision Delphi</th>
<th>EFTE Delphi</th>
<th>Policy Delphi</th>
<th>Online Delphi</th>
<th>Face-to-face Delphi</th>
<th>Random Type Delphi</th>
<th>Real-time Delphi</th>
<th>Thematic Delphi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Arguments</td>
<td>Facts</td>
<td>Decisions</td>
<td>Holistic</td>
<td>Opinion</td>
<td>Un-stated</td>
<td>Varying</td>
<td>Un-stated</td>
<td>Un-stated</td>
</tr>
<tr>
<td>Objective</td>
<td>Develop arguments and expose reasons</td>
<td>Elicit opinion and gain consensus</td>
<td>Prepare and support decisions</td>
<td>Construct holistic scenarios</td>
<td>Opinion capture in multi-disciplinary tasks</td>
<td>Un-stated</td>
<td>Varying</td>
<td>Un-stated</td>
<td>Un-stated</td>
</tr>
<tr>
<td>Anonymous participation</td>
<td>Anonymous responses</td>
<td>X X X X X X X Un-stated</td>
<td>X X X X X X X Un-stated</td>
<td>X X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
</tr>
<tr>
<td>Controlled feedback</td>
<td>Consolidated feedback</td>
<td>X X X X X X X Un-stated</td>
<td>X X X X X X X Un-stated</td>
<td>X X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
</tr>
<tr>
<td>Iterative process</td>
<td>Opportunity to retain</td>
<td>X X X X X X X Un-stated</td>
<td>X X X X X X X Un-stated</td>
<td>X X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
</tr>
<tr>
<td></td>
<td>Questionnaire</td>
<td>Incl. interviews</td>
<td>X X</td>
<td>Incl. interviews</td>
<td>X X</td>
<td>-</td>
<td>Un-stated</td>
<td>X X X X X Un-stated</td>
<td>X X X X X Un-stated</td>
</tr>
<tr>
<td></td>
<td>Number of rounds</td>
<td>X X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Physical meeting</td>
<td>Un-stated</td>
<td>X X X X X</td>
</tr>
<tr>
<td></td>
<td>Statistical aggregation of group response</td>
<td>Aggregation</td>
<td>X X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>Un-stated</td>
</tr>
<tr>
<td></td>
<td>Group of selected experts</td>
<td>Participants of issue areas</td>
<td>X</td>
<td>Decision makers</td>
<td>Representatives of groups</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Un-stated</td>
</tr>
</tbody>
</table>

The results indicate that all variants show the generic characteristics of the Delphi Method (Table 2). The “X” label indicates that the Delphi variant corresponds to generic characteristics without exceptions. Hence, regarding the four fundamental characteristics, all Delphi Method variants can be considered Delphi Methods.

However, the methods differ regarding how they define expertise, their focus and objective, their level of anonymity, as well as their round 1 design. An expert suitable for a Delphi panel requires an individual who is at the top of his or her field of knowledge and is interested in a wide range of matters in his or her own field. The individual has to be able to see connections between national and international, as well as present and future developments. In addition, an expert must have the ability to see connections between different fields of science as well as the ability to disregard traditional points of view. Finally, the individual has to be able to regard problems from known, safe, and unconventional angles, as well as be interested in creating something new (Kuusi, 1999; Delbecq, van de Ven and Gustafson, 1975). Some Delphi Method variants, e.g., Decision and Policy Delphi, do not recruit panellists according to the expert definition above but instead focus on a specific group of selected experts. While Decision Delphi recruits only experts with regard to their actual position in the decision-making hierarchy, Policy Delphi requires informed advocates and referees for policy issues (Linstone and Turoff, 1975; Rauch, 1979).

Regarding focus and objective, seven of the 13 Delphi Method variants pursue defined objective goals and set their foci accordingly. For example, Argument Delphi tries to develop relevant arguments and expose underlying reasons for different opinions on a specific issue (Kuusi, 1999). For this purpose, arguments from different perspectives are the primary focus. The remaining six Delphi Method variants do not differ according to their foci and objectives, but how they apply technology (Real-Time, Electronic, Technological, and Online Delphi), their modifications (Modified Delphi), or simplification in relation to process steps (Mini-Delphi). Since focus and objective are directly related, we include them in one attribute called “focus and objective”.

In Argument, Decision, EFTE, and Mini-Delphi, the participants in the panel are known from the beginning, but their responses remain anonymous. This quasi-anonymity is supposed to motivate panellists to answer the
questionnaire themselves and to not delegate the work due to lack of time, for example. Furthermore, the prestige of the other panel participants is presumed to provide a challenge and incentive (Rauch, 1979).

Finally, in Argument and Disaggregative Policy Delphi, the first round of the questionnaire is qualitative. It includes interviews for verbal argumentation or for making qualitative judgements (Kuusi, 1999).

4. Taxonomy development

The taxonomy development process, based on Nickerson, Varshney and Muntermann (2013) comprises four process steps: (1) choose a meta-characteristic of the object of interest, (2) specify dimensions, (3) define necessary conditions for the taxonomy, and (4) conceptualize characteristics.

The choice of the meta-characteristic should be based on the purpose of the taxonomy (Nickerson, Varshney and Muntermann, 2013). Hence, our meta-characteristic comprises the design and application of Delphi studies. The next step addresses specification of dimensions of the object of interest. Dimensions are frequently based on theory and serve as a starting point for conceptualizing the characteristics (Nickerson, Varshney and Muntermann, 2013). According to Miller (1994), the number of dimensions falls in the range of 7±2. Our analysis in Section 3 reveals that Delphi Method variants differ regarding how they define expertise (hereinafter referred to as panel participants), their focus and objective, their level of anonymity (hereinafter referred to as participant group), as well as their Round 1 design. Hence, we chose these four dimensions complemented by a fifth dimension, specifics of the panel. The latter dimension comprises recommendations concerning the size or composition of groups.

The third step comprises the definition of conditions. To establish consistency when deciding to consider a Delphi Method modification of a true variant, in addition to Classical Delphi, we propose that the following conditions should be met: (1) generic characteristics of Delphi are fulfilled, (2) a differentiating focus and objective exists, and (3) a sufficiently robust description of the Delphi Method variant is provided. Conditions (1) and (2) ensure that the respective Delphi Method variant can be considered as a Delphi Method and that it pursues a clear objective with a distinct focus. Condition (3) determines if an underlying rationale and description for this Delphi Method modification exists and qualifies it as a true variant. Table 3 shows the result of the first three process steps. The left column in Table 3 shows the dimensions mentioned above that characterize the differences in the seven Delphi Method variants that met the developed conditions.

Table 3: Differentiating dimensions of the remaining seven Delphi Method variants (in alphabetical order).

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Focus and objective</td>
<td>Arguments: Develop relevant arguments and expose reasons</td>
<td>Facts: Elicit opinion and gain consensus</td>
<td>Decisions: Prepare and support decisions</td>
<td>Scenarios: Construct holistic scenarios</td>
<td>Opinions: Opinion capture in multi-disciplinary tasks</td>
<td>Ideas: Define and differentiate views</td>
<td>Rankings: Consensus about the relative importance of a set of issues</td>
</tr>
<tr>
<td>Panel participants</td>
<td>Group of experts</td>
<td>Homogeneous groups of experts</td>
<td>Decision makers</td>
<td>Representatives of interest groups</td>
<td>Group of experts</td>
<td>informed advocates and referees</td>
<td>Group of experts</td>
</tr>
<tr>
<td>Participant group</td>
<td>Dependent panellists and anonymous response</td>
<td>Independent panellists and anonymous response</td>
<td>Dependent panellists and anonymous response</td>
<td>Independent panellists and anonymous response</td>
<td>Dependent panellists and anonymous response</td>
<td>Independent panellists and anonymous response</td>
<td>Independent panellists and anonymous response</td>
</tr>
</tbody>
</table>
In addition to the different focus and objectives, the remaining Delphi Method variants differ according to these four dimensions: (1) panel participants, (2) participant group, (3) Round 1 design, and (4) the specifics of the panel. The following paragraphs detail these dimensions.

1. Panel participants: In addition to a panel of experts in their respective areas of expertise, some variants choose a specific-focus group. Decision Delphi recruits its panellists only with regard to their actual position in the decision-making hierarchy (Rauch, 1979). Another example is Policy Delphi, which addresses only informed advocates and referees to reach the research objective (Linstone and Turoff, 1975).

2. Participant group: With all variants, the individual responses of the participating group are still anonymous. However, the participants’ names of the Argument, Decision, and EFTE Delphi are known from the beginning. This is done to motivate the panellists to answer the questionnaire themselves (Rauch, 1979) and to argue their choices seriously (Kuusi, 1999). Participants in the EFTE Delphi are assembled face-to-face in a conference room and freely discuss the (anonymous) feedback results (Nelms and Porter, 1985).

3. Round 1 design: The first round of the Delphi study either includes a qualitative study to refine the research issues or immediately starts with a quantitative questionnaire.

4. Specifics of the panel: Proposals vary here. In Ranking-Type Delphi, for example, in order to facilitate consensus, the panel should not be too large (Paré et al., 2013). The panel of a Disaggregative Policy Delphi should consist of different interest groups to construct holistic scenarios (Tapio, 2003).

The fourth step in the process of taxonomy development is the conceptualization of characteristics. The dimensions serve as the basis for the choice of characteristics for our taxonomy. Table 4 shows that each dimension contains between two and seven characteristics.

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Round 1 design</td>
<td>Interview; qualitative</td>
<td>Open; qualitative</td>
<td>Questionnaire and interview</td>
<td>Face-to-face interaction; questionnaire</td>
<td>Questionnaire; quantitative</td>
<td>Questionnaire; quantitative</td>
<td>Unstructured; qualitative</td>
</tr>
<tr>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
</tr>
<tr>
<td>Specifics of the panel</td>
<td></td>
<td></td>
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<tr>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
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<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
<td>Should represent the research issue from different perspectives</td>
</tr>
</tbody>
</table>

In addition to the different focus and objectives, the remaining Delphi Method variants differ according to these four dimensions: (1) panel participants, (2) participant group, (3) Round 1 design, and (4) the specifics of the panel. The following paragraphs detail these dimensions.
Table 4: Dimensions and characteristics of Delphi Method variants

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus and objective</td>
<td>Arguments: Develop relevant arguments and expose reasons</td>
</tr>
<tr>
<td></td>
<td>Decisions: Prepare and support decisions</td>
</tr>
<tr>
<td></td>
<td>Facts: Elicit opinion and gain consensus</td>
</tr>
<tr>
<td></td>
<td>Ideas: Define and differentiate views</td>
</tr>
<tr>
<td></td>
<td>Opinions: Opinion captured in multi-disciplinary tasks</td>
</tr>
<tr>
<td></td>
<td>Rankings: Consensus about the relative importance of a set of issues</td>
</tr>
<tr>
<td></td>
<td>Scenarios: Construct holistic scenarios</td>
</tr>
<tr>
<td>Panel participant</td>
<td>Expert in narrow sense</td>
</tr>
<tr>
<td>Participating group</td>
<td>Total anonymity</td>
</tr>
<tr>
<td>Round 1 design</td>
<td>Qualitative</td>
</tr>
<tr>
<td></td>
<td>Quantitative</td>
</tr>
<tr>
<td>Specific characteristics of</td>
<td>Size of panel should be high in absolute terms</td>
</tr>
<tr>
<td>panel</td>
<td>Consider different groups of experts</td>
</tr>
<tr>
<td></td>
<td>Cover a high percentage of a specific group of experts</td>
</tr>
<tr>
<td></td>
<td>Should include a group of experts with no strong personality conflicts</td>
</tr>
<tr>
<td></td>
<td>Size of panel should not be too large</td>
</tr>
<tr>
<td>Issues developed from</td>
<td>Experience of participants</td>
</tr>
<tr>
<td></td>
<td>Literature review</td>
</tr>
<tr>
<td></td>
<td>Pilot study</td>
</tr>
<tr>
<td>Processing of the results</td>
<td>IT-supported</td>
</tr>
<tr>
<td></td>
<td>IT-supported in real-time</td>
</tr>
</tbody>
</table>

Focus and objective clearly differentiate the Delphi Method variants from each other. Regarding the panel participants involved, a differentiation between an expert in a narrow sense and an expert in a broad sense can be observed. An expert in a narrower sense comprises the generally known definition of an expert suitable for a Delphi panel (cf. p.5) according to Delbecq, van de Ven and Gustafson (1975) and Kuusi (1999). An expert in a broader sense covers a specific-focus group, e.g., decision makers or representatives of interest groups. Experts assigned to this category do not necessarily have a wide range of knowledge in their own fields; their expert status results from their actual position in the decision-making hierarchy or their affiliation with an interest group.

The participating group is restricted or anonymous. Restricted anonymity means that the participants know each other’s names or directly exchange feedback while their responses remain anonymous. In the case of anonymity, panellists, as well as their responses, remain anonymous.

The first round of Delphi can be qualitative, i.e., more exploratory, quantitative, or more confirmatory (Skinner et al., 2015). A qualitative first round works best when situations are vague, ill-defined, or contradictory (Hasson, Keeney and McKenna, 2000). A quantitative first round is useful when the scenario is generally less ambiguous and is customarily undertaken by giving the panel a predefined set of issues to explore (Niederman, Brancheu and Wetherbe, 1991).

Regarding the specific characteristics of the panel, some recommendations exist concerning the breadth and depth of the panel and the composition of groups. The panel should be high in absolute terms to get the most significant possible results, but should not be too large to reach a consensus. Furthermore, a high percentage of a specific group is encouraged to gain particular insights or consider a number of different groups to get results from multiple perspectives. Additionally, strong personality conflicts within the group of experts should be avoided. Otherwise, conflicts may occur.

Furthermore, we recognize two characteristics that did not arise from specific Delphi Method variants but are still important for Delphi in general. The first characteristic concerns the source from which issues are developed. The issues for Round 1 could originate from a previously performed or already published literature review, having emerged from a previously executed pilot study or from an examination of participants’ experiences. The selection is carried out in accordance with the research content and status is independent of a specific variant.
The second characteristic comprises the results processing. All Delphi studies use some form of software, i.e., IT. Beyond this, IT can be used to give responses in real time. Such systems evaluate responses obtained from respective iterations and directly display results.

5. Evaluation of taxonomy

Upon completion, the resulting taxonomy needs to be evaluated for its usefulness (Nickerson, Varshney and Muntermann, 2013). We, therefore, evaluate our taxonomy twice. First, we apply it to selected IS research published in highly-ranked IS journals (Section 5). This evaluation addresses whether a purposeful and unambiguous determination of Delphi method variants using the taxonomy is possible. Second, we evaluate the practical applicability of the taxonomy by using it to define the specific Delphi design for one of our research projects (Section 6). The application of the taxonomy should demonstrate whether a clear definition of the selected Delphi Method variant and its characteristics can be made. We use three articles from our subset “Application of Delphi Research” (Section 2, p. 2f.) for the first evaluation. These papers examine:

1. key factors affecting transnational knowledge transfer (Duan, Nie and Coakes, 2010),
2. how organizations can effectively implement IT governance in practice (Haes and van Grembergen, 2008), and
3. the future impact of enterprise resource planning (ERP) on Supply Chain Management (SCM) (Akkermans et al., 2003).

We selected the three articles because each one uses a different Delphi Method variant, includes a comprehensive description of the methodology, and was published in different top-tier IS journals. The first study (Duan, Nie and Coakes, 2010) applies a Classical Delphi Method variant to reach a consensus about the most important factors, while the second study (Haes and van Grembergen, 2008) uses a Ranking-type variant of Delphi as a technological forecasting tool applied to develop a necessary set of top 10 practices for implementing IT governance. The third study (Akkermans et al., 2003) differs by implementing an EFTE approach to understand the impact of ERP on SCM. Table 5 illustrates the evaluation results.

Table 5: Evaluation results (the numbers in brackets refer to the IS research articles mentioned above)

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus and objective</td>
<td>Arguments: Develop relevant arguments and expose reasons</td>
</tr>
<tr>
<td></td>
<td>Decisions: Prepare and support decisions</td>
</tr>
<tr>
<td></td>
<td>Facts: Elicit opinion and gain consensus (1)</td>
</tr>
<tr>
<td></td>
<td>Ideas: Define and differentiate views</td>
</tr>
<tr>
<td></td>
<td>Opinions: Opinion captured in multi-disciplinary tasks (3)</td>
</tr>
<tr>
<td></td>
<td>Rankings: Consensus about the relative importance of issues (2)</td>
</tr>
<tr>
<td></td>
<td>Scenarios: Construct holistic scenarios</td>
</tr>
<tr>
<td>Panel participant</td>
<td>Expert in narrow sense (1) (2) (3)</td>
</tr>
<tr>
<td></td>
<td>Expert in broad sense</td>
</tr>
<tr>
<td>Participating group</td>
<td>Restricted anonymity (3)</td>
</tr>
<tr>
<td></td>
<td>Total anonymity (1) (2)</td>
</tr>
<tr>
<td>Round 1 design</td>
<td>Qualitative (1) (2) (3)</td>
</tr>
<tr>
<td></td>
<td>Quantitative</td>
</tr>
<tr>
<td>Specific characteristics of panel</td>
<td>Be high in absolute terms (1)</td>
</tr>
<tr>
<td></td>
<td>Consider different groups of experts</td>
</tr>
<tr>
<td></td>
<td>Cover a high percentage of a specific group of experts</td>
</tr>
<tr>
<td></td>
<td>Should include a group of experts with no strong personality conflicts (3)</td>
</tr>
<tr>
<td></td>
<td>Should not be too large (2)</td>
</tr>
<tr>
<td>Issues developed from</td>
<td>Experience of participants (3)</td>
</tr>
<tr>
<td></td>
<td>Literature review (1) (2) (3)</td>
</tr>
<tr>
<td></td>
<td>Pilot study (2)</td>
</tr>
<tr>
<td>Processing of the results</td>
<td>IT-supported (1) (2)</td>
</tr>
<tr>
<td></td>
<td>IT-supported in real-time (3)</td>
</tr>
</tbody>
</table>

Overall, within the default characteristics noted above, a purposeful and unambiguous determination is possible. It is apparent that the study of Akkermans et al. (2003) describes the specifications of an EFTE Delphi without naming this variant. However, the characteristics of the respective Delphi Method variants are not
directly mentioned in those studies. Our taxonomy addresses these deficits by offering a clear definition of Delphi Method variants and their characteristics. Any potential deviations can be made transparent without creating new variants or declaring them as “modified”.

6. Exemplary application of the taxonomy

As Section 5 shows, the proposed taxonomy can be successfully applied to existing IS research. This indicates that the taxonomy is comprehensive and helps to clearly distinguish features that differentiate the Delphi Method. A logical next step is to apply our approach to a new Delphi research project. The additional step is useful to evaluate the practical applicability of the taxonomy and to show that it helps specify the chosen research method unambiguously. For that purpose, we use the taxonomy to define a research proposal using Delphi to investigate the organizational role of a so-called offshore coordinator. The offshore coordinator connects the onshore and offshore organization and facilitates the knowledge transfer process. The objective of this study is to identify the main tasks of the offshore coordinator role as well as the necessary skills to perform this role. The grey-marked squares in Table 6 illustrate the chosen research approach along the suggested taxonomy.

Table 6: Characteristics of our research approach

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Focus and objective</th>
<th>Panel participant</th>
<th>Participating group</th>
<th>Round 1 design</th>
<th>Specific characteristics of panel</th>
<th>Issues developed from</th>
<th>Processing of the results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Arguments: Develop relevant arguments and expose reasons (Argument Delphi)</td>
<td>Expert in narrow sense</td>
<td>Restricted anonymity</td>
<td>Qualitative</td>
<td>Size of panel should be high in absolute terms</td>
<td>Experience of participants</td>
<td>IT-supported</td>
</tr>
<tr>
<td></td>
<td>Decisions: Prepare and support decisions (Decision Delphi)</td>
<td></td>
<td>Total anonymity</td>
<td></td>
<td>Consider different groups of experts</td>
<td>Literature review</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facts: Elicit opinion and gain consensus (Classical Delphi)</td>
<td></td>
<td></td>
<td></td>
<td>Cover a high percentage of a specific group of experts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ideas: Define and differentiate views (Policy Delphi)</td>
<td></td>
<td></td>
<td></td>
<td>Should include a group of experts with no strong personality conflicts</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Opinions: Opinion captured in multidisciplinary tasks (EFTE Delphi)</td>
<td></td>
<td></td>
<td></td>
<td>Size of panel should not be too large</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rankings: Consensus about the relative importance of a set of issues (Ranking-Type Delphi)</td>
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<tr>
<td></td>
<td>Scenarios: Construct holistic scenarios (Disaggregative Policy Delphi)</td>
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</tbody>
</table>

To meet our objective, we use a Classical Delphi method variant (Dalkey and Helmer, 1963) for our study design. Classical Delphi serves as a forum of facts to elicit opinions and seek a consensus. This Delphi method variant is most suitable to determine an agreeable set of tasks the offshore coordinator role typically performs and the necessary skills he or she needs.

Experts suitable for the study are managers or practitioners with proven expertise in IS projects transferring knowledge to near- or offshore locations. They should be directly involved in IS offshoring initiatives, incorporating the transfer of knowledge from Germany to near- or offshore countries. Hence, our panelists are experts in a narrow sense.

During the series of questionnaires, the responses are only sent to researchers who anonymize all replies. This total anonymity allows group participants to express their opinions individually without any influences from other panel members.

The first round is qualitative and includes open questions according to the summarized literature findings regarding the offshore coordinator’s tasks and skills. This design offers freedom for experts to comment on these findings and generate ideas and issues.
The size of the panel should not be too large to reach a consensus. Although there is no agreement on the optimal number of subjects for a Delphi study in general or a Classical Delphi in detail (Skinner et al., 2015; Paré et al., 2013), we follow the recommendation of Delbecq, van de Ven and Gustafson (1975) and aim to reach a panel size of approximately 30 participants across the total number of rounds.

The questions for the first round are developed through an extensive literature review (Strasser and Westner, 2015). Further on, the participants’ experience is used to evaluate the literature findings critically as well as to enhance the amount of findings for the subsequent quantitative rounds.

For the questionnaire and result processing, we used a web-based questionnaire tool for data gathering. We compared different tools according to their features and selected LimeSurvey.

Using the developed taxonomy, as illustrated, allowed for identification of the Delphi characteristics where we needed to make methodological and explicit decisions. The example shows that this provides a straightforward research method description that is both concise and unambiguous.

7. Conclusion

In this work, we analysed existing research to identify variants of the Delphi Method and their characteristics. We found 13 Delphi Method variants differentiated in IS research and analysed them critically. The results indicate that all variants show the four generic characteristics of the Delphi Method but differ regarding how they determine expertise, their focus and objective, as well as their level of anonymity (RQ1).

While the definition of the respective Delphi Method variants is inconsistent, and six of these variants lack a clear objective and focus (RQ2), we suggest three conditions that must be met to accept a Delphi Method modification as a Delphi Method variant. By applying these conditions to the identified 13 Delphi Method variants, seven clearly distinguishable variants with different focus and objectives remain (RQ3). We describe the specifications of these Delphi Method variants in detail and generalize these findings to develop a taxonomy. This taxonomy includes seven characteristics and 23 specifications to clearly differentiate and characterize Delphi Method variants (RQ4).

We evaluate our taxonomy twice. First, we apply it to selected IS research published in highly ranked IS journals. This evaluation reveals that a purposeful and unambiguous determination of the chosen method variant using the taxonomy is possible. Thus, we tentatively claim that the taxonomy is comprehensive and helps clearly distinguish differentiating features of the Delphi Method. Second, we illustrate the practical application of the taxonomy by using it to define the specific Delphi design for one of our research projects. Application of the taxonomy demonstrates that a clear definition of the selected Delphi Method variant and its characteristics can be easily, yet precisely, documented (RQ5). Overall, this will help researchers in specifying their research method concisely and unambiguously, without burdening readers of research papers with verbose sections on methodology. Relevant IS research should consider practitioners and not only researchers as a possible audience. This might help make research papers more readable for the target group without harming research rigor.

From a research perspective, we claim that awareness of the developed taxonomy enhances research rigor. The findings clearly show that the Delphi Method has been adapted in various ways, which may cause methodological problems and undermine rigor because it presumably creates new Delphi Method variants. These variants are, in fact, not substantially different to those already existing. We analyse these different Delphi Method variants, their characteristics, and offer insights to researchers by providing a taxonomy to point out the methodological decisions they must make and to describe their research approach clearly. We believe that a careful consideration of our taxonomy intensifies understanding of the applied Delphi Method variants in IS research and contributes to enhancing methodological rigor when using the Delphi Method.

There are certain limitations of this study. First, we cannot be sure that we found every relevant Delphi Method-based publication despite a thorough and broad literature retrieval process. Second, the evaluation of the developed taxonomy is limited to three highly ranked journals and one application in practice. Future research could apply our proposed taxonomy to more IS research using Delphi Method variants. The findings
could help develop our taxonomy to improve the rigor of Delphi studies conducted in the IS community. Third, we conducted this study in one research discipline only, but tentatively claim that results can be transferred to other disciplines that have started using Delphi more extensively. We argue that other disciplines that have started adopting Delphi more recently could be encouraged to avoid methodological ambiguity from the beginning of broader adoption of Delphi within their disciplines.
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Alchemy Methodology - Applying the Arts to Research

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Abstract: The difference between art and research is that, whereas art can speak for itself, research must be explained. Unlike research, art invites open interpretation from the viewers, without any need to justify or explicate its existence or the artist's intentions. Research however, by its very nature, is a cognitive and rational product – at least in its final stages. The appreciation of postmodern perspectives in academia has given rise to methodologies for first-person inquiries and arts-based methods. Arts methods may provide the researcher with great insights into a research question, however the inquiry needs to be situated in a rational and philosophically aligned research framework. In this paper I present Alchemy Methodology as a theoretical framework for such research. It has been developed as an application of the pure phenomenology of Edmund Husserl, and it uses arts practice and subjective insights to inform and transform this data into universal, phenomenological insights. Alchemy Methodology is based on three principles:

• that the unconscious mind is far superior to logic and cognition when it comes to navigating the complex research question, but ...
• that the unconscious can only speak through images and metaphor, which ultimately must be translated through rational thought and language
• that the arts-based methods embedded in Alchemy Inquiry, can take the researcher from the most subjective reflections to the most intersubjective, universal outcomes

This paper shows how the researcher can use arts practice to inspire unconscious responses to a research question, and frame these methods in a research construction, which is rigorous and informed by pure, European Phenomenology. It takes issue with a common misconception of phenomenology in research, arguing that twentieth century modernism has skewed Husserl's transcendental philosophy into something obscure and nonsensical.

Keywords: Phenomenology; Arts Research; Qualitative Methodology; Alchemy Methodology; arts-based research; Husserl.

'Subjectivism can only be overcome by the most all-embracing and consistent subjectivism (the transcendental). In this (latter) form it is at the same time objectivism (of a deeper sort)..' (Husserl, 1964/1929, p.34).

1. Introduction

As a student of art and literature, I was persuaded that the artist's intentions, however interesting, are separate to the art itself. To be clear, by 'art' I am referring to any or many creative genres, including visual and performing arts, as well as creative writing. The art speaks for itself. That is, the artist does not need to be able to articulate the meaning or intention, which underpins the work. Through the elements of the particular art form, the work may affect the audience, who will ultimately be responsible for any consequential analysis and evaluation. The audience may show little or no response to the art – it doesn't matter to the artist. But the opposite is true if the artist is also a researcher and the art work is used as data for the inquiry. Research is ultimately a logical process.

Research demands a more active role from any artist who is using the creative work as data for inquiry. The researcher is then responsible for making a convincing argument that the arts-informed process can be explained. As much as I applaud the swell of arts-based methods in qualitative inquiry, I wonder if this explicit aspect of the research process is sometimes diminished in methodologies such as Autoethnography. In order to evaluate a research methodology, I need to ask if the inquiry is logical. The theoretical framework, which informs the analysis and outcome, must be philosophically informed and consistently aligned, and the researcher must convince the reader that the chosen arts methods are appropriate and relevant in regard to the inquiry.

One way of approaching an arts-based inquiry is to tailor a methodology specifically to suit the individual project. Otherwise, there are established approaches, which can be used as a template for research, and I offer...
one here. I call it Alchemy Methodology because metaphorically, like the alchemists of old who changed base metals into gold, through Alchemy Methodology the researcher uses mundane, personal experience to produce important, universal insights. Informed by the philosophy of Edmund Husserl (Husserl, 1981), the methodology uses subjective, arts-based data as a starting point for the discovery of universally significant insights. It follows the process of pure phenomenology, which Husserl established early last century. At that time, modernism reined, and it is thought that dominant scholars such as Heidegger were unable to embrace the transcendental nature of the philosophy (Hopkins, 2001). Now, one hundred years later, we are ready to do so. Alchemy Methodology offers a process for applying Husserl’s Transcendental Phenomenology as research methodology.

2. The Lost Art of Phenomenology

When Husserl was writing about Phenomenology in the 1920s in Europe, his contemporaries, Sigmund Freud (1856-1939), Carl Jung (Jung, 1875-1961) and Rudolf Steiner (1861-1925), were all pioneering research into the significance of image, dream and the unconscious. Husserl’s Transcendental Phenomenology, which seeks the archetypal form that is the essence of the research inquiry, is of the same philosophical ilk. In contrast to modernist thinking, which dominated the twentieth century, these founders and developers of psychoanalysis and phenomenology were interested in transcultural metaphors and symbols for understanding the human psyche. In the methodology which follows, subjective methods of first-person experience are interpreted through art, and become what Husserl calls ‘intersubjective”, that is, universal archetypes, which are the essences of phenomenology.

What is an archetype? Neville (2005) explains that archetypes are primary forms which govern the psyche, and transcend time and culture:

For Plato, archetypes were ideas or forms of natural objects held to have been present in the divine mind prior to creation. For St Augustine they were ‘principle ideas’ which are themselves not formed, but contained in the divine understanding. In the Buddhist-Hindu systems, they are the first forms of manifestation that emerge from Void Spirit in the course of creation. Kant and Schopenhauer were more immediate precursors of Jung in dealing with this idea. For Jung, archetypes are typical and universal ‘modes of apprehension’ which appear as images charged with great meaning and power, images which exert a great influence on our individual and collective behaviour. (Neville, 2005, p. 125.)

Neville (2005) directs us to the Greek Gods as examples of archetypes:

Golden-Haired Aphrodite, the goddess of beauty and sensuality; Winged Eros, god of relationship and of the creativity which is generated by relationship; Ares, a raging war god (and beaten in battle by Athena); Artemis the huntress; Hermes the Cowboy, “god of travelers, shepherds, thieves, merchants and scholars” (Neville, 2005, P.292).

Many students today have been led astray by distorted interpretations of phenomenology brought about by Heidegger (Hopkins, 2001), a student of Husserl, who saw the philosophy through the lens of worldly ontology. Husserl had always described his Phenomenology epistemologically – that is, as a way of knowing. Influenced more by the modernist positivism of the century, Heidegger attempted to describe Phenomenology as a way of being in the world. This latter, ontological perspective distorted the terminology created by Husserl, and Phenomenology, as it is widely practiced today, appears more as an imitation of some kind of interview-based, Grounded Theory. Because Husserl’s metaphysical terminology had been retained by Heidegger, but the epistemological focus was changed to an ontological one, what had been an aligned philosophical approach for understanding human endeavor had become distorted. Only Husserl’s original Transcendental Phenomenology, or ‘pure phenomenology’, as it is referred to by Spiegelberg (Spiegelberg, 1982), makes sense. It is this original, pure phenomenology that informs the research methodology of Alchemy Methodology.

3. Psychoanalysis and the Unconscious

I contend that the unconscious, an ancient part of human consciousness, is the part of our psyche that has evolved to cope with the massive input of stimuli. If we are to believe the psychoanalysts (Freud, 1900/ 2010) (Jung, 1953), the unconscious can access and organize data in a mythical, symbolic way, which is more
comprehensive than conscious rationality. The world has always been a complex place, and we have evolved with a means to cope with chaos. Our unconscious minds deal with the details of daily experience during sleep, as in dreams we weave tangible patterns and symbols from seemingly endless daily detail. Psychotherapists use dream analysis, hypnosis and sometimes art works created by the patients to understand their inner worlds. At first, the array of seemingly unrelated memoirs and feelings may seem to make no sense. Freud used a process called “Free Association” in which he asked the patients to speak randomly about anything that came into their minds, without censorship of any kind. By listening to the flow of the conversation and attuning to key symbols, he could analyse the underlying narrative as it emerged. The unconscious, which is so much smarter than the rational self (Goleman, 1992), will know the way through the chaos. But the unconscious speaks through myth and image, so ultimately, the rational self will need to become skilled at interpreting the cryptic clues. Let us look at some experimental evidence of the computer-like competence of the unconscious, when it comes to dealing with enormous amounts of data. Goleman (1992) observes that experiments in the ability of the unconscious mind to synthesise ideas and patterns is quite superior. He explains the testing process as follows:

The cognitive unconscious, long thought by most cognitive scientists to be fairly simple-minded, may in fact be extremely intelligent, according to new findings by Dr. Pawel Lewicki of the University of Tulsa. In a major study, he had volunteers sit at a computer screen and push one of four buttons that corresponded to quadrants on the screen in which an "X" appeared, seemingly at random. Actually, the X followed an extremely complex pattern determined by 10 simultaneous rules; for example, that after moving twice horizontally, the X would then move vertically. Despite the complexity of the rules, Dr. Lewicki determined that the volunteers unconsciously learned them because their performance became progressively quicker, then rapidly deteriorated after the rules were suspended and the X started moving truly at random” (Goleman, 1992).

This is an important, scientific perspective of the intuitive unconscious, but the focus of this paper is not to explain the workings of the non-cognitive dimensions of the mind, but rather to use its synthesising capacity for research analysis and the presentation of research outcomes. The unconscious can seem to be elusive, however through Art and free-association, researchers can access the patterns revealed by the unconscious. After many years of exploring Husserl's Phenomenology (Husserl, 1981), I have put together Alchemy Methodology, which draws together both the unconscious and the rational minds of the researcher – arguably both left and right brain hemispheres – to address first-person research questions in this increasingly complex world. Working solo, on a phenomenon within one’s own experience, is the only way to do authentic phenomenology, according to its founder, Husserl (McCormic and Elliston, 1981). Furthermore, Jung explained the process of working with the unconscious like this:

The point is that you start with any image; for instance, just with that yellow mass in your dream. Contemplate it and carefully observe how the picture begins to unfold or to change. Don’t try to make it into something, just do nothing but observe what its spontaneous changes are. Any mental picture you contemplate in this way will sooner or later change through a spontaneous association that causes a slight alteration of the picture. You must be careful to avoid spontaneously jumping from one picture to another. Hold fast to the one image you have chosen, and wait until it changes by itself. Note all these changes, and eventually step into the picture yourself, and, if it is a speaking figure at all, then say what you have to say to that figure and listen to what he or she has to say….Thus you can analyse your unconscious but also give your unconscious a chance to analyse yourself, and therewith you gradually create the unity of conscious and unconscious (Jung 1973, cited in Neville, 2005. p.91).

It is only through first-person experience that the unconscious can reveal patterns that may reveal potentially universal insights. So how might one understand the complex world through subjective experience? How does alchemical phenomenology work? As a researcher, I need to be able to logically justify my theoretical framework, even if the methods I use will be intuitive. I have argued that if I was just doing Art, then Art could speak for itself, but with research, its essentially intellectual nature requires researchers to be explicit regarding the theoretical underpinnings of their approaches. Alchemy Methodology is informed by Husserl’s Transcendental Phenomenology. Husserl was ahead of his time, and the prevailing modernism struggled with his concept of “intersubjectivity” (Husserl, 1964/1929). To Husserl, intersubjectivity occurs when, for example, my subjective experience is typical of the experience that others have of the same phenomenon. My
experience then ceases to be merely subjective, as it aligns with intersubjective experience – one that is experienced and know universally.\

4. Alchemy Methodology

To be succinct, I have summarised the theoretical framework of Alchemy Methodology in the following table. I will then explain each of the methods and describe an example of how I have used the methodology in my own research.

Table 1 shows the structure of Alchemy Methodology and an overview of the philosophical alignment in the research design. Objectivism is compatible with Transcendental Phenomenology, because the latter seeks intersubjective objects of the research experience. The listed methods serve the theoretical perspective, because they are the steps to accessing the researcher’s unconscious mind, which will present the intersubjective essence as a visual or mythical archetype.

**Table 1: The Theoretical Framework of Alchemy Methodology**

| Theoretical Framework of Alchemy Methodology – a Whole-Brain Approach for Arts-Based Research |
|---------------------------------|-----------------------------------|
| EPISTEMOLOGY | OBJECTIVISM |
| THEORETICAL PERSPECTIVE | TRANSCENDENTAL PHENOMENOLOGY |
| METHODOLOGY | ALCHEMICAL PHENOMENOLOGY |
| METHODS | |
| o Experience |
| o Epoche |
| o Epiphany |
| o Elucidation |
| o Explanation |

Although students of methodology frequently use the term ‘epistemology’ in varying ways, here I comply with Michael Crotty’s thesis (Crotty, 1996) that in the context of research methodologies, there are three basic epistemologies (or ways of knowing), which can inform a research paradigm. Crotty (Crotty, 1998) points out that the epistemology of any given research design is based on one of the following three ways of knowing:

- **Objectivism**, which assumes that real or abstract objects exist, whether or not the researcher is aware of them. Scientific method assumes objectivism, and usually seeks tangible, external objects. Alchemy Methodology also works with the epistemology of Objectivism, but the external objects being sought here are ideal or abstract;
- **Constructionism**, which assumes that although knowledge objects exist independently of the thought of an individual, it is the individual who creates meaning from these objects. To the constructionist, my meaning may be quite different to your meaning, even though they are drawn from the same experience. Most qualitative methodologies are based on constructionism;
- **Subjectivism**, which assumes that there is no meaning outside of what I know from personal experience. Some kinds of reflective research and narrative inquiry work within the boundaries of subjectivism.

Although Alchemy Methodology starts with subjective methods, the overall epistemology informing the methodology is Objectivism, because ultimately the researcher is seeking archetypal objects. These objects will sum up the research in a way that is understood universally. Alchemy, through first-person research into subjective experience, searches for what Husserl calls *a priori* objects. He says:

All of phenomenology, or the methodological pursuit of a philosopher’s self-examination, discloses the endless multiformity of this inborn a priori. This is the genuine sense of “innate”....Phenomenology explores this a priori, which is nothing other than the essence...and which is disclosed, and can only be disclosed, by means of my self-examination (Husserl, 1964/1929, p.29).

Like Plato’s Greek Gods and Jung’s archetypes, these a priori objects do not actually exist in the lifeworld, but they exist *transcendentally* in a way that symbolizes lifeworld phenomena. For example, no one has ever seen Aphrodite herself, but we see her essence in everyday beauty. So when the researcher uses Alchemy Methodology, s/he hopes to reach some kind of *ideal* (in a Cartesian sense) object (like Aphrodite – or Cupid,
or Dionysius) that will encapsulate an intersubjective answer to the research question about personal experiences.

Neville (2005) points out that archetypal psychology originated mainly from the work of Carl Jung, who used Plato’s ideas of patterns and forms. He puts it this way:

Following Plato, he was inclined to understand archetypes as pre-existent forms which are replicated again and again in nature and in our experience. He wrote of archetypes as “instinctual patterns of behaviour”, which are genetically inherited, as “structures of the collective unconscious” and as “modes of apprehension” which shape our encounter with reality....We can learn something of the nature of these patterns in the “old stories” or myths of ancient cultures” (Neville, 2005, p.22).

In Alchemy Methodology, when an image or metaphor from the “old stories” presents itself, it may well come as a gift from the unconscious in the form of the research outcome. According to Neville (2005), archetypal psychologists suggest that “all behaviour is archetypally constellated” and “Our thinking and behaving is done within one archetypal fantasy or another.” (Neville, 2005, P.24). Alchemy Phenomenology, too, is based in this belief-context. It seems fitting then that researching human behaviour should be done through an archetypal lens.

The Theoretical Perspective of any research design is the philosophy that works within the context of the given epistemology. The Alchemy system is informed by the theoretical perspective of Husserl’s Transcendental Phenomenology. Husserl perfected this authentic phenomenology in his later life, but he was ahead of his time. Twentieth century positivists were not ready to comprehend his notion of intersubjectivity. Husserl’s idea that through one’s most personal and subjective experience we can come to know the most universal and intersubjective phenomena, was somewhat metaphysical and beyond the boundaries of the physical sciences. Husserl explained that intersubjective knowledge can be conceptual - for example, through my fear of spiders, I can come to know your fear of snakes. Although our subjective experiences differ, the intersubjective phenomenon of fear transcends those differences. Husserl writes:

Subjectivism can only be overcome by the most all-embracing and consistent subjectivism (the transcendental). In this (latter) form it is at the same time objectivism (of a deeper sort)..."(Husserl, 1964/1929, p.34).

To summarise, Alchemy Methodology is informed, philosophically, by the epistemology of Objectivism and the theoretical perspective of Transcendental Phenomenology (Husserl, 1964/1929). The research methods, that is, what the researcher does in pursuit of knowledge, align philosophically with the objectivism of the epistemology and Husserl’s Transcendental Phenomenology, which informs the theoretical perspective. This is how the process has unfolded in my experience of trialling the approach. Each method is highlighted to emphasise the sequential nature of the methodology:

Firstly, in keeping with Husserl’s doctrine, I seek first-hand Experience of the phenomenon. At this stage I try to suspend any critical analysis. I allow time for the unconscious to do its work – making patterns of the complex subjective information derived from the experience. I avoid thinking too much at this stage. I allow for a time of incubation – the Epoche.

Later, and in a timely way, an a priori object will present itself. This object may materialise through my related creative pursuits – writing or painting, or perhaps through a dream or meditation. This is the Epiphany. At first I may not recognise my unexpected research object. In my experience, I have found that it will reappear if necessary. At this stage of the research I may write plays or narrative as a form of free-association, and the object will sometimes surface through the dialogue of a character. Other characters in the play or story will discuss and debate the image, and slowly introduce the research object into consciousness. This process is the Elucidation, or the time of clarification. Finally, as this is research and not art, I must explain my research findings. This is the time for scholarly analysis and Explanation. Only now, at the end of the process, should cognition have a voice. At first it must be silent, in order to heed the whisper of the unconscious.
5. An example of Alchemy Methodology in practice.

Let me describe an example of how I have used Alchemy Methodology in research. In 2008 I was working as a research fellow on a project about personal (online) learning environments in Education. I was employed alongside technically gifted workers, but I was not naturally talented in that regard. We used to joke that I was the ‘reality check’, but actually that was probably the case. I was employed to research into the reluctance that some academics have towards using Web 2.0 technology. The research involved acquainting myself with Web 2.0 technology, such as Second Life, Twitter, Facebook, Delicious and other online environments, and mapping my learning process. This was still fairly new in 2007. I kept a blog to record my reflections, frustrations and triumphs (Vallack, 2009). Apart from that there were no restrictions. It was unstructured, and I wrote freely as the thoughts came to mind. In Freud’s terms, I was ‘free-associating’. Without the confines of guidelines, I enjoyed an exciting air of uncertainty and chaos. Those of us who creatively thrive in that environment are well suited to using phenomenology for inquiry. Others, however, will prefer attention to detail and predictable outcomes. They will find the whole-brained approach of Alchemy Phenomenology disconcerting. Many scholars, particularly more positivist researchers, are not be comfortable with the lack of structure, and they should use other research methodologies. This is a methodology for the intuitive researcher. Jung (Jung, 1933) explains intuition as a function of the unconscious and emphasises its importance to one’s accumulation of knowledge.

The Web 2.0 learning process began with my own, subjective experience of the Web 2.0 phenomenon, all the while allowing space for what Husserl calls the “epoche”. This is the magical (Gelber, 1986) period, where the unconscious works below the surface of consciousness. It has been recognised and named by other scholars such as Moustakas, who refers to this time as an ‘incubation’ (Moustakas, 1990) period. During the Epoche the researcher avoids, as much as possible, any inclination to hypothesise, or analyse the experience. When researching the Web 2.0 technology platforms in 2007, at first I just blogged about it as a kind of free-association. This provided a fertile environment through which the unconscious could speak through metaphor and image. Eventually (and this is the unnerving part, as there is no conscious control over when it will happen) I referred unwittingly, through my writing, to the myth of Echo and Narcissus. This was my Epiphany, but at first I did not recognise it. Then, as the Elucidation phase surfaced, and my blog again mentioned the myth of Echo and Narcissus, my conscious mind finally realised it was important. The whole process can seem like a leap of faith, as the researcher waits helplessly and patiently for the unconscious to present its fruits to cognition. For this reason, Alchemy Methodology only suits highly intuitive individuals with the confidence to let the process unfold in its own time. And it does unfold to produce results. And this is always surprising to me.

Once the Elucidation stage is reached, the researcher should engage cognitively with the insights presented. When the legend of Echo and Narcissus emerged, I was ready to allow my cognition to actively contribute to the process, and to explain any archetypal insights. The process began with an analysis of the legend, to understand why it was important. A reader will not understand the example without familiarity with the story. Here is a retelling of the story of Echo and Narcissus (Facinabao):

Echo was a beautiful nymph, fond of the woods and hills, where she devoted herself to woodland sports. She was a favorite of Diana, and attended her in the chase. But Echo had one failing; she was fond of talking, and whether in chat or argument, would have the last word.

One day Juno was seeking her husband, who, she had reason to fear, was amusing himself among the nymphs. Echo by her talk contrived to detain the goddess till the nymphs made their escape. When Juno discovered it, she passed sentence upon Echo in these words: “You shall forfeit the use of that tongue with which you have cheated me, except for that one purpose you are so fond of—reply. You shall still have the last word, but no power to speak first.”

This nymph saw Narcissus, a beautiful youth, as he pursued the chase upon the mountains. She loved him and followed his footsteps. O how she longed to address him in the softest accents, and win him to converse! but (sic) it was not in her power.

She waited with impatience for him to speak first, and had her answer ready. One day the youth, being separated from his companions, shouted aloud, “Who’s here?” Echo replied, “Here.” Narcissus
looked around, but seeing no one, called out, “Come.” Echo answered, “Come.” As no one came, Narcissus called again, “Why do you shun me?” Echo asked the same question. “Let us join one another,” said the youth.

The maid answered with all her heart in the same words, and hastened to the spot, ready to throw her arms about his neck. He started back, exclaiming, “Hands off! I would rather die than you should have me!” “Have me,” said she; but it was all in vain. He left her, and she went to hide her blushes in the recesses of the woods.

From that time forth she lived in caves and among mountain cliffs. Her form faded with grief, till at last all her flesh shrank away. Her bones were changed into rocks and there was nothing left of her but her voice. With that she is still ready to reply to anyone who calls her, and keeps up her old habit of having the last word.

Narcissus’s cruelty in this case was not the only instance. He shunned all the rest of the nymphs, as he had done poor Echo. One day a maiden who had in vain endeavoured to attract him uttered a prayer that he might some time or other feel what it was to love and meet no return of affection. The avenging goddess heard and granted the prayer.

There was a clear fountain, with water like silver, to which the shepherds never drove their flocks, nor the mountain goats resorted, nor any of the beasts of the forests; neither was it defaced with fallen leaves or branches, but the grass grew fresh around it, and the rocks sheltered it from the sun. Hither came one day the youth, fatigued with hunting, heated and thirsty.

He stooped down to drink, and saw his own image in the water; he thought it was some beautiful water-spirit living in the fountain. He stood gazing with admiration at those bright eyes, those locks curled like the locks of Bacchus or Apollo, the rounded cheeks, the ivory neck, the parted lips, and the glow of health and exercise over all. He fell in love with himself. He brought his lips near to take a kiss; he plunged his arms in to embrace the beloved object. It fled at the touch, but returned again after a moment and renewed the fascination.

He could not tear himself away; he lost all thought of food or rest, while he hovered over the brink of the fountain gazing upon his own image. He talked with the supposed spirit: “Why, beautiful being, do you shun me? Surely my face is not one to repel you. The nymphs love me, and you yourself look not indifferent upon me. When I stretch forth my arms you do the same; and you smile upon me and answer my beckonings with the like.”

His tears fell into the water and disturbed the image. As he saw it depart, he exclaimed, “Stay, I entreat you! Let me at least gaze upon you, if I may not touch you.” With this, and much more of the same kind, he cherished the flame that consumed him, so that by degrees he lost his colour, his vigour, and the beauty which formerly had so charmed the nymph Echo.

She kept near him, however, and when he exclaimed, “Alas! alas!” she answered him with the same words. He pined away and died; and when his shade passed the Stygian river, it leaned over the boat to catch a look of itself in the waters. The nymphs mourned for him, especially the water-nymphs; and when they smote their breasts Echo smote hers also. They prepared a funeral pile and would have burned the body, but it was nowhere to be found; but in its place a flower, purple within, and surrounded with white leaves, which bears the name and preserves the memory of Narcissus (Facinabao, retrieved 2017).

So what did my analysis tell me about academics and technology? Certainly my story is neither as glamorous or romantic as the delightful myth, however there are parallel insights to be gleaned through the plot. My blog showed that like Echo, I felt inarticulate when I tried to talk about online environments. I did not know the meaning of the acronyms, and I was unfamiliar with the many websites that seemed to be known to my colleagues. I was not computer-literate, and could not shortcut my way around the keyboard - like Echo, I was relatively mute and only able to follow the lead of others. Most poignantly, however, the technology that I wished to engage with was cold and unfeeling. Like Narcissus, it would not empathise or sympathise. It was self-contained and sufficient unto itself. I did not matter to it at all, even though it mattered to me! In the final
step of the methodology, the explanation, I suggested that some academics, like me, may need to be able to engage socially and emotionally in order to engage with the learning. Was the myth of Echo and Narcissus the key to understanding why some academics struggle with using technology? And if so, perhaps we need to look at the way we are teaching technical literacy in an academic environment?

6. Conclusions

This paper sets out the original research methodology, called Alchemy Methodology. It is an application of pure phenomenology, which mandates that one must experience the phenomenon first-hand. This idea opposes the popular misunderstanding that phenomenology is interview-based research, which is informed by narratives of another’s ‘lived experience’ (Giorgi, 1985).

Our traditional, quantitative and qualitative approaches to research work well when we are able to rationally isolate one question or hypothesis, and deal with it in an isolated way. Cognitively, we deal well with such simple tasks. We even have software to help us do it. However, in an uncontrolled, chaotic research and learning environment, the information overload can be overwhelming for our limited cognition, and the software is limited. I put forward a methodology that champions the unconscious to deal with complexity through arts-based methods. This part of the mind, which is adept at sorting through chaos, can be engaged through Alchemy Methodology. The unconscious recalls experiences and reveals solutions to complicated problems, through dream, art and authorship – if only we attune to the meanings therein. Phenomenology, akin to psychoanalysis, draws on the art of interpreting the language of the unconscious. Arts-inspired researchers may find Alchemy Methodology a useful, step-by-step approach for researching their own, first-person experiences.

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