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The manufacture of the academic accountant

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ABSTRACT

This paper uses observation and semi-structured interviews, informed by limited auto-ethnography, to examine the experiences of accounting doctoral students at a North American business school. Analyzing the findings with a theoretical approach to understanding scientific activity (Knorr-Cetina, 1981), this study investigates the influence of networks of academic supervisors, colloquia facilitators, and other doctoral students on the socialization of developing accounting academics as they learn the research process. The paper demonstrates that these resource-relationships play a key role in the formation of the doctoral student in relation to their respective field. The paper also demonstrates the influence of the particular methodology they are learning, as part of the socialization process. The degree of the field-specific methods' indeterminacy influences the students' perception of limits to their freedom and innovation. Building on previous research, the paper challenges the opposition of interpretive accounting research to a positivist/functionalist mainstream: the paper shows that despite the potential provided by the Inter-disciplinary stream's indeterminacy of what constitutes "good research", such opposition limits innovation and freedom.

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1. Introduction

Don't be afraid of the numbers

This suggestion, made by a leading mainstream accounting researcher to the author, at the AAA Lake Tahoe colloquium, seems to exemplify the assertions made by [Panozzo \(1997\)](#). Contrasting the (then) emerging European accounting research perspective with the US tradition, Panozzo used the context of doctoral education to depict the reproduction of positivist accounting research dominance by the exemplification of "good" research through the AAA doctoral colloquium. [Chua \(1996\)](#) described such mainstream notions of "good" research as NIRD research: "new, innovative, rigorous and defensible" ([Chua, 1996, p. 131](#)). The underlying meaning of this NIRD thesis is that quality research is quantitative, underpinned by economic, psychology and mathematics theories, and adheres to an accepted format.

Panozzo contended that the European context was lacking in such a rigid research tradition, and instead reflected a multi-vocal variety of different ontological bases and approaches for research methodologies. This resulted in an environment more open to different notions of what constitutes good research, where:

"European doctoral students looking for practical guidance are left, at best, with the awareness of both fragmentation and consequent paradigm variety and with doubts concerning the identity and cohesiveness of the academic community they belong to."

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Panozzo suggested that such doubts fostered innovation and freedom in the doctoral students, indicating that the scientific context influences the doctoral students' identity and offers them a range of options. Elements of this context include the scientific methodology that the students are learning, which is part of the role-specific knowledge of science that is distinct within each paradigm, and serves to influence the students as they associate their identity with the identity of their paradigm.

Influenced by this depiction of the European context, this paper takes as a case study a doctoral program in accounting that is a microcosm of Panozzo's European context, as it offers different streams of accounting research, including a Financial Economics (FE) stream, a Judgment and Decision Making (JDM) stream, and an Inter-disciplinary (ID) stream. The doctoral program displays Gendron's (2008) notion of "multi-vocality", which includes research from a variety of ontological and epistemological bases (Gendron, 2008). In this setting, the study examines: 1) the ways in which the context, its resource-relationships and paradigm-specific research methods, influence the development of the academic accountant; and, 2) whether these resource-relationships, and various research methods and practices in a multi-vocal academic accounting environment allow for the innovation and freedom Panozzo (1997) suggests.

Prior studies have demonstrated the influence of mainstream positivist/functionalist research on accounting doctoral education. This is exerted through the American Accounting Association's Deloitte Foundation J. Michael Cook Doctoral Colloquium (Cho, Roberts, & Roberts, 2008; Fogarty, 2011; Fogarty & Jonas, 2010), control of top accounting journals (Fogarty & Jonas, 2010; Schwartz, Williams, & Williams, 2005), faculty supervisors (Fogarty & Jonas, 2010) and the diffusion of a "US model" of doctoral education (Hermanson, 2015; Pelger & Grottke, 2015).

This paper joins recent self-reflections on doctoral education (Pelger & Grottke, 2015; Prasad, 2015; Raineri, 2013, 2015) that bring the analysis back to the doctoral program itself. It adds to the literature by further examining the way in which the AAA doctoral colloquium influences doctoral students, while expanding the view to include other doctoral colloquia in the analysis, and considering these effects in relation to other influences on the student: other doctoral students, colloquia facilitators, and the students' academic supervisors. This web of social relations is intertwined with the structure of the program, and the scientific practices that it teaches, including the methodologies employed, the conduct of research, and the culmination of scientific activity in writing a research paper. This paper makes the argument that there is a connection between the socialization of doctoral students, and the scientific practices they are learning.

To make sense of these myriad influences, and the connection between the socialization process and scientific practices, the paper relies on a constructivist perspective on scientific action (Knorr-Cetina, 1981) that views research work as a series of context-specific selections, guided by indeterminate methods with vague criteria and ambiguous rules, embedded in a web of social relations. This view suggests that scientific action takes place in trans-scientific fields in which resource-relationships abound, where scientists come to view themselves and their work in terms of a future value, a "resource".

The findings are consistent with prior research suggesting that 1) doctoral colloquia are important influences on the development of the students (Fogarty & Jonas, 2010; Panozzo, 1997; Cho et al., 2008); 2) the diffusion of a US model of doctoral education has directed the students to focus on paper-writing skills with a view to publishing in top accounting journals; and 3) academic supervisors figure prominently in these influences.

In addition to providing a case study exemplar of extant research, the findings demonstrate 1) how interacting with faculty facilitators and other doctoral students at the colloquia, and presenting and discussing their ideas, reinforces the stream's scientific practices, which guides the students to change themselves to conform to their stream's identity; 2) the supervisor's position in relation to their university and the greater research field affects the relationship with the student; 3) the students in the streams that lack methodological multi-variety perceive themselves to enjoy freedom to innovate, while the students in the Inter-disciplinary stream, though offered a plethora of methodological options, feel restricted by the stream's opposition to mainstream research. This opposition is conveyed through interactions with faculty facilitators and fellow doctoral students at doctoral colloquia, and academic supervisors at resident institutions. These resource-relationships serve to reinforce stream boundaries, integrating the streams' approach to scientific activity.

Whereas the doctoral program represents a multi-vocal research context, the Inter-disciplinary stream within it is akin to "interpretive accounting research" (Ahrens et al., 2008). This stream is made up of a number of research methodologies, and exhibits an identity similar to interpretive accounting's "polycentric research field held together by its opposition to a variously defined positivistic 'mainstream'" (Ahrens et al., 2008, p. 842). This identity is problematic. Panozzo (1997) suggested that doubts about what constitutes "good research" engender an environment that fosters innovation and freedom. While a polycentric research field is evident of such doubts, the opposition to the 'other' (mainstream accounting research), directs students towards research for 'what it is not' rather than 'what it is'. The findings suggest that this serves to limit possibilities for freedom and innovation.

These results are relevant to those concerned with this "lack of an independent intellectual identity" of "interpretive" accounting research (Ahrens et al., 2008), and those who call for intensification of opposition between "alternative" research and the mainstream (Prasad, 2015). While agreeing with Prasad (2015) in a break with the mainstream, the results imply that perhaps it is not opposition, but scientific independence along the notion of 'a' scientific method (versus 'the' scientific method) (Searcy & Mentzer, 2003), that will further the field of interpretive research. A break with the opposition to the 'other' may bring forth the benefits suggested by Panozzo (1997), help establish the "positive identity" of concern to Ahrens et al. (2008), and engender the innovative freedom suggested by Panozzo (1997).

The following section examines literature that demonstrates various influences on doctoral education. Section 3 considers doctoral education as a socialization process, and establishes the theoretical frame underpinning the analysis. Section 4

discusses the methodological approach to the paper. Section 5 presents and interprets the findings. Section 6 discusses the implications of these findings. The final section, Section 7, offers a conclusion.

2. Influences on doctoral education and students

Studies of doctoral education demonstrate many inter-twined influences on the student: the accounting academy, academic journals, colloquia, the training institution, and the supervisor. One perspective on these influences is the perception of North American mainstream accounting research as being self-perpetuating and dominant (Hopwood, 2007, 2008; Lee, 1995; Lee & Williams, 1999; Williams, Jenkins, & Ingraham, 2006). This view suggests that the mainstream acts on doctoral education and training (Chua, 1996), through its influence over doctoral colloquia (Fogarty & Jonas, 2010; Schwartz et al., 2005) and top tier journals (Gendron, 2008; Heck & Jensen, 2007; Searcy & Mentzer, 2003). The mainstream is also thought to influence PhD training universities and their resident faculty (Fogarty & Jonas, 2010), including doctoral student supervisors.

This influence has produced a “US model” of doctoral education (Hermanson, 2015; Pelger & Grottke, 2015). This model favors a functionalist-positivist worldview (Chua, 1996) based on mathematical and statistical methods (Heck & Jensen, 2007; Kinney, 1986) and neo-classical economic theory (Searcy & Mentzer, 2003). It typically consists of two years of structured coursework, focusing on mainstream accounting research, and related theoretical bases and research methodologies. Significant aspects of this course work are a focus on learning how to write academic papers (Raineri, 2015) for a limited number of journals, research topics, and methods for addressing them (Pelger & Grottke, 2015; Schwartz et al., 2005).

The American Accounting Association promotes this type of research through its annual doctoral consortium (Cho et al., 2008). Panozzo (1997) studied the consortium first-hand, noting the mainstream approach based on the contributions of Watts and Zimmerman (1978, 1990), and suggesting that the message to doctoral students was clear:

“...to support this view of accounting as the objective representation of economic facts, mainstream accounting researchers have to share all the assumptions of neo-classical economics about rational behavior and perfect competition”
 [(Panozzo, 1997, p. 455)]

Fogarty and Jonas (2010) found that the discussions at the consortium stressed publishing in three “top” journals (TAR, JAR, and JAE) putting limitations on the subjects these future scholars can research. Using the program booklets from the consortium for the years 1982–2007, the authors performed an analysis of the faculty facilitators that participated in the event as speakers and session leaders. Their analysis indicates that the faculty facilitators attending the event tend to all get their PhDs from the same schools, work at the same schools, perform financial accounting research, and publish in the same journals. In close and frequent contact with the doctoral students, their influence extends not only to the doctoral students’ topics of research, but also to the style in which they write their papers.

Similarly, Raineri (2015) suggests that the doctoral education process in North America is one of “technicist” training in how to write for top-tier journals. The influence on doctoral students of such a focus is a familiarity with only ‘top’ journals that is even more significant for those students enrolled in the ‘top’ schools (Schwartz et al., 2005).

Lastly, resident faculty at the training institution, “[u]nquestionably, the most powerful socialization agents...” (Fogarty & Jonas, 2010, p. 304) are a significant influence on the students. Indeed, Berger and Luckman (1967) identify “teachers” as “...institutional functionaries with the formal assignment of transmitting specific knowledge” (p. 142). Fogarty and Jonas (2010) also suggest the academy acts on doctoral programs as a way to direct the socialization process along common ground, and influences the student-supervisor relationship through the supervisors’ connections to the field:

“To some extent, those that can credibly speak on behalf of the discipline are able to work as a counter-weight against the dysfunctional ranges of the distribution of university-based socialization.”
 [(Fogarty & Jonas, 2010, p. 304)]

Thus, luminaries from other universities will act on the various influences at the doctoral students’ universities.

In response to these strong influences, however, some studies have identified “reluctance, resistance, and strategizing” (Kornberger, Justesen, & Mouritsen, 2011, p. 515) which “affords agency to those subjects situated at transitory sites” (Raineri, 2015, p.109), suggesting that doctoral students do adapt to and navigate these contexts. Students do enter an accounting doctoral program with an outcome in mind, usually a faculty position in a university business school (Fogarty & Jonas, 2010; Raineri, 2015). Learning to navigate and adapt to the doctoral program, and to integrate successfully into the academic community, is to the students’ advantage.

This suggests that the socialization process of doctoral education is intertwined with many influences. The academic associations, colloquia, universities, and faculty act on the doctoral students’ development, while teaching them a scientific method and directing them towards the ultimate goal of doing research and publishing it in academic journals, while the students learn to navigate these influences with the same goal in mind. The scientific practices the students learn are therefore crucial to their development. In order to make sense out of these scientific practices, this paper uses a social constructivist approach to the study of scientific practices (Knorr-Cetina, 1981), discussed in the next section.

3. Theoretical framing

3.1. Socialization

Socialization is the process that teaches individuals normative values, and conveys role-specific knowledge and beliefs (Berger & Luckman, 1967). Early studies have shown the socializing effect of training in academic and technical professions such as medicine (Becker, Geer, Hughes, & Strauss, 1961), nursing (Ondack, 1975), and policing (Van Maanen, 1973). More recently, Kornberger et al. (2011) studied the socialization of professional accountants, and their progression from manager to partner in public practice, as a process of transition, from one “world” to the next.

Van Maanen (1973) broke down such a transition into phases, suggesting that there are “. . .pre-entry, admittance, change, and continuance phases. . .” (p. 409) of the socialization process. The “change” phase is the period when the student is most susceptible, self-conscious, and in need of direction (Van Maanen, 1973). Described as a “rite of passage” (Panozzo, 1997; Raineri, 2013; Kornberger et al., 2011) this change process helps an individual learn from, add to, and reject some of their pre-existing beliefs, and adopt acceptable behaviors and concepts. In accounting students, Phillips (1998) suggests that the rewards for adopting certain thinking processes begin in undergraduate education. Similarly, Clikeman and Henning (2000) find that undergraduate accounting education changes students’ decision-making between the second and fourth year of their degrees.

Expanding on what is learned in undergraduate accounting, doctoral education is the continuation of this knowledge transmission, a socialization process already in progress. This “secondary socialization” (Berger & Luckman, 1967), where already socialized entrants take on “role-specific knowledge” (p. 138), and gain exposure to standards and rules, and guidelines for this knowledge, shapes students (Chua, 1996; Raineri, 2013, 2015; Cho et al., 2008). Malsch and Tessier (2015) demonstrate the effect of standards and rules, such as research incentive policies, on the formation of academic “identity”. Malsch and Tessier (2015) rely on Giddens (1991, p.53) to define identity as “the self as reflexively understood by the person”. Relatedly, Berger and Luckman (1967) suggest that the body of knowledge doctoral students acquire during this transformation is implicated in their identity formation.

“. . .the same body of knowledge is transmitted to the next generation. It is learned as objective truth in the course of socialization and thus internalized as subjective reality. This reality in turn has the power to shape the individual. It will produce a specific type of person. . .whose identity and biography. . .have meaning only in a universe constituted by the aforementioned body of knowledge.”

[(Berger & Luckman, 1967, p. 67)]

Thus, the context-specific body of knowledge that the students learn contributes to their identity and shapes them within the accounting research field, the “universe” where this identity is the way in which they know themselves. The doctoral program is similar to both professional and undergraduate training programs in that the student is indeed taking on a type of transformation, i.e. towards becoming a scientist. In order to make sense of the “role-specific knowledge” that is acquired in this socializing process of identity formation, I draw on Knorr-Cetina’s (1981) social constructivist examination of scientific knowledge production.

While much of the research on doctoral students portrays students as exploited labor, and conceptualizes the accounting academy as a kind of “scientific community”, Knorr-Cetina conceives of “resource-relationships” that abound within “trans-scientific fields” that influence knowledge construction processes. These knowledge construction processes, or methodologies, are themselves indeterminate, employing vague criteria and abstract rules. This perspective offers the conception of accounting doctoral students as scientists in training, learning and being developed by, and navigating within, these processes.

3.2. Scientific activity and role-specific knowledge

3.2.1. Trans-scientific fields and resource-relationships

In developing her perspective, Knorr-Cetina notes that the unit of analysis of much research on scientific practice is the “scientific community”. Economic theories of scientific production have portrayed scientific communities as capitalist market economies, where different forms of capital are exchanged (Bourdieu, 1975), and scientists are depicted either as capitalist entrepreneurs, or as exploited labor. These economic analogies are problematic for Knorr-Cetina, in that it is hard to define who is the entrepreneur and who is the laborer, a definition that would ultimately depend upon who controls the means of production and provides the capital, which she identifies, typically, as institutions that are beyond the direct control of any one scientist.

Knorr-Cetina’s (1981) examination of economic theories of scientific production, however, rejects both the theories and the limiting notion of a “scientific community”, and requires elaboration of the context in which the scientist produces knowledge. Building on Bourdieu’s concept of fields (Bourdieu, 1975) she conceptualizes a “trans-scientific field” within which exists “networks of symbolic relationships which in principle go beyond the boundaries of a scientific community or scientific field, however broadly defined.” (Knorr-Cetina, 1981, p. 82). Trans-scientific fields are made up mostly of scientists from the same area or discipline, however, they span more than the common notion of a ‘scientific community’

allows, and also include institutional administrators, funding agencies, publishers, governments, and scientists in other disciplines. The relevant aspects of these fields are that they are resource dependent: there is something to be gained by being active in these fields (such as research funding, employment, and prestige) and that they “refer us to a contextuality beyond the immediate site of action” (p. 81), suggesting that they bear on the local sites of action.

Within trans-scientific fields occurs a “. . .struggle for the imposition, expansion, and monopolization of what are best called *resource-relationships*” (p. 83, emphasis in original). Resources, for Knorr-Cetina, refer to both the scientist and the scientist’s work, and she offers the example of an institution filling a vacant research position. A candidate’s value as a resource may be the ability to teach, conduct research, connect to other institutions, or draw research funding. The value of the resource therefore depends upon its ability to be exchanged for other resources. Close to what Bourdieu describes as various forms of capital that can be exchanged (Bourdieu, 1975), the crucial difference is that:

“...resource-relationships are dominated by what could happen in the future and by what has not happened in the past, by resources which are hidden or hold implications for others, by promises and expectancies, rather than a concrete flow of goods.”

[(Knorr-Cetina, 1981, p. 86)]

The benefit it has for the future is what drives the resource-relationship’s value. Based on an uncertain future outcome, these relationships are therefore unstable, and must be constantly renewed, solidified, and expanded. They also appear to be ‘reciprocal’ (p. 86), as opposed to asymmetrical, as they appear in the economic metaphor of scientific production. The relationship results from negotiation and coordination of interests, from conflict and imposition.

Trans-scientific fields transcend the research context, and resource-relationships abound within them. A significant aspect of the resource-relationships is the potential influence they can exert on the production of research knowledge. This stems from the resource opportunities they offer, suggesting the future-oriented nature of the resources’ value. As described by Knorr-Cetina (1981), the pertinent “resources” of this type of relationship differ from such immediate rewards as the “capitals” exchanged per Bourdieu (1975) but are embodied in the potential for what can be gained in the future. There are components of cultural and symbolic capital evident in this complicated topography, but there is also significant prominence of how current successes relate to future successes. Similarly, the accounting academy sees the continuous influence of a similar web of relations on the recruiting, tenure, and promotion decisions of accounting faculty at universities (Fogarty, 2011; Gendron, 2008; Hopwood, 2008).

3.2.2. *Scientific practices and knowledge production*

Knorr-Cetina (1981) suggests that the process of knowledge production is subjective, context dependent, situationally contingent, and a result of simply “making things work” in the lab (Knorr-Cetina, 1981). This process produces ‘facts’ through the activities and interactions which guide and shape what is acceptable as knowledge.

“Scientific results, including empirical data, have been characterized as first and foremost the result of a process of fabrication. Processes of fabrication involve chains of decisions and negotiations through which their outcomes are derived. Phrased differently, they require that selections be made. Selections, in turn, can only be made on the basis of previous selections: they are based on translations into further selections.”

[(Knorr-Cetina, 1981, p. 5)]

Related to the context in which they are made, these selections display an “indexicality”, or “situational contingency and contextual location of scientific action” (p. 33). This notion appreciates the local peculiarities of scientific action, and suggests that research is the result of various choices made and negotiated by scientists in a specific time and place, and influenced by the various scientists’ interests and interpretations. Likening scientists to “tinkerers”, Knorr-Cetina describes the scientific process as opportunistic, where scientists exploit contextual opportunities in the development of research projects. The context of the site of research, that gives rise to ideas, methods, and research products, is anything but irrelevant. To study scientific action is to study the context-linked process of making selections.

Established local research methods that direct scientific work sometimes embody vague criteria, and are ambiguous, and fungible: “[t]he frequent inconsistencies between laboratory selections, the change of criteria, and the often unclear or implicit basis of decisions remind us of the indeterminacy of scientific action. . .” (p. 90). This indeterminacy allows for some maneuvering on the part of the scientists as local criteria are developed and changed.

Not completely isolated, however, scientists make decisions in a field of social relations, and in anticipation of the reactions of others:

“...if we look at the process of knowledge production in sufficient detail, it turns out that scientists constantly relate their decisions and selections to the expected response of specific members of this community of “validators”, or to the dictates of the journal in which they wish to publish. Decisions are made based on what is “hot” and what is “out”, on what one “can” or “cannot” do, on whom they will come up against, and with whom they will have to associate by making a specific point.”

[(P. 7)]

As scientists make their selections, they are aware of the response of others, including other scientists and journal editors. This links resource-relationships to scientific practices within trans-scientific fields. Within trans-scientific fields, resource-relationships influence scientific practices, while the outcomes of scientific methods, i.e. research results and their reports, underpin scientific value in resource-relationships, and are the trade value in trans-scientific fields.

Knorr-Cetina's (1981) perspective is a useful lens through which to view accounting doctoral students as scientists-in-training, learning the process of making context-specific selections within a web of social relations that transcends the learning institution. A doctoral program is a local site of socialization, connected to other fields, in which the students learn the process of knowledge production. Knorr-Cetina cites a number of actors that populate trans-scientific fields, including funding agencies and university administrators. What is of interest here is the notion of 'validators', those within a web of relations in which the students work who they perceive to scrutinize their value, and who influence their development while they learn the process for local research practice.

As Van Maanen (1973) and Berger and Luckman (1967) suggest, this role-specific knowledge can shape the identities of new entrants. For the doctoral students, this identity only makes sense within the "universe" created by that knowledge. While learning this process, however, there also seems to be room for students' resistance to and strategizing within these relationships (Kornberger et al., 2011; Raineri, 2015). How Knorr-Cetina suggests that resource-relationships are managed is similar to the "reluctance, resistance and individual strategizing" that is essential to the socialization processes as suggested by Kornberger et al. (2011, p. 515). Doctoral students are not structural pawns with no incentives or goals. In managing their resource-relationships, rather than simply being exploited labor, doctoral students plan their outcomes in terms of the future reward of academic positions and prestige.

4. Method

The accounting doctoral program setting for this instrumental case study (Stake, 1995) is one of four departments of a relatively large doctor of philosophy program at a major North American university's school of business. This business school is in the top 100 business schools in the world, as ranked by the Financial Times of London. The school organizes the Doctor of Philosophy program under various disciplines of business education: Accounting; Finance and Management Science; Marketing; and Strategic Management. Its accounting faculty is one of the most productive and accomplished in North America (Mathieu & McConomy, 2003).

The investigation of a specific context (Flyvbjerg, 2001) can yield insight that is applicable to similar sites of interest. This paper takes this accounting doctoral program as a microcosm of the diverse research environment that Panozzo (1997) posits of the European context. Panozzo (1997) illustrates a multi-disciplinary space that fosters knowledge creation from diverse perspectives, where "...issues investigated and approaches used are largely incommensurable and the recognition that multiple approaches to accounting research coexist..." (p. 448). Similarly, Gendron notes how an accounting department can be unique amongst North American business schools for its openness to "...the principle of intellectual multi-vocality" (Gendron, 2008, p. 102).

What makes this setting similar to that described by Panozzo is that the Accounting department organizes the program into three 'streams'. The department defines these streams in terms of the research performed in each, according to the theoretical basis and the methodology employed. The Financial Economics (FE) stream, based on economic theory, employs statistical analysis in archival studies and capital markets studies, as well as experimental studies in economic behavior. The Judgment and Decision Making (JDM) stream relies on theories from psychology and economics, and employs experimental methods of investigation. The Inter-disciplinary (ID) stream incorporates theories from sociology, political science, and philosophy. Methodology in the ID stream tends to be qualitative, and approaches include field studies, case studies, and ethnographies employing interview, observation, and qualitative content analysis. The program offers a site in which to study the development of accounting students in a setting similar to the European context described by Panozzo (1997).

In order to address the research questions, I designed a study drawing on observation (Hammersley & Atkinson, 2007; Whyte, 1993) and interviews, informed by a limited approach to auto-ethnography (Anderson, 2006; see for examples Gendron (2008) and Raineri (2015)).

According to Anderson (2006), the role of researcher-subject within effective auto-ethnographical analysis consists in three criteria: 1) full membership in the research group or setting; 2) this membership is apparent in subsequent publications; and, 3) commitment to development of theoretical understandings beyond the immediate context. In this study, I was a member of the doctoral program for the period under study, and present the self-reflections and self-analysis of identity changes that informed the research here for discussion, and as interludes to further data collection and analysis in the interviews. Studying this doctoral program will contribute to the understanding of doctoral education in general and accounting doctoral education in particular, beyond the research site.

While I fit these criteria, and my experience adds to the study's data, my approach is short of a full auto-ethnography, and uses my experience to inform and aid the analysis. The inspiration for this study stemmed from the accounting department's regular Friday research seminars, scheduled throughout the regular term, where invited guest scholars presented their work. The unwritten rule for PhD students in this program is that attendance at these seminars is mandatory. Attempting to be an active participant at these seminars, I spent time reading the papers beforehand, formulating questions, and identifying areas of research. Attending these seminars, I made notes about the questions the faculty asked, how they were addressed, and

what seemed to be important. As I observed the conduct of the seminars, I began to be aware of the way in which my thinking was changing, and how I sought to emulate the other PhD students and faculty attendees. I also started to become aware of the boundaries and conflicts amongst the different faculty, how these were paradigmatic, and how these manifested in the conduct of the seminars. My notes during the seminars turned from observations of others to observations of self. This guided further observation of myself and others.

Beginning in August 2009, through June 2011, I observed seminars and PhD study areas, and documented references to the various relationships and activities at play within these areas. I made hand written notes of personal thoughts and reactions to the activity and conversations occurring therein. This aided the semi-structured interview strategy, discussed below, served as a tool for offering counterfactuals to elicit responses during the interview process, and formed the foreshadowed problem that sparked the initial interest in this research study. Foreshadowed problems (Hammersley & Atkinson, 2007, p. 21) become evident to the researcher as a result of theoretical study, and as the basis for the study lies with Knorr-Cetina's (1981) constructivist notion of scientific production, the research site was chosen as an empirical site to explore how doctoral students learn to be accounting scientists.

To explore this process, in March and April of 2010, I conducted semi-structured interviews with seven of the program's accounting doctoral students. The length of the interviews ranged from thirty minutes to over an hour, averaging close to forty-five minutes and resulting in over six hours of audio data. I subsequently transcribed the audio recordings for analysis and future reference. I used hand written field notes before, during and after the interview, to provide data that was relevant to the interview, but escaped the audio recording. I commenced the interviews with a request for a description of the students' academic and professional background, and then a description of their current position in the PhD program, before proceeding to a semi-structured interview script of questions about their experiences in the program (see Appendix A for initial questions).

Including myself as an auto-ethnographical subject, the data sample comprises eight doctoral students, with an average of 3.75 years in the program (refer to Appendix B). Three of the students were in the JDM stream, three in the ID stream, and two in the FE stream. All held undergraduate degrees, two of them held Bachelor of Arts (BA) degrees, with the remaining six holding Bachelor of Commerce degrees. Five of the eight held Master's level graduate degrees, two of these were thesis-based Master's; two were non-thesis Master's in accounting, and one was an MBA. Four of the eight students were professionally designated accountants, and one of the four held more than one professional designation. Most of the students had an undergraduate field of study in business, with four of the eight in Accounting, one in Finance, and one in International Business. The two remaining students held undergraduate degrees in Political Science and in Public Administration.

In selecting students for interviews, I attempted to obtain a 'multi-vocal' perspective similar to Panozzo's (1997) described characteristics of the European setting that are relevant to this specific case (Cooper & Morgan, 2008), rather than an attempt to obtain a representative statistical sample of a population of all doctoral students. I invited every accounting student in the doctoral program to participate in the study. The seven volunteers result in a convenience sample that does not represent the global population of all accounting doctoral students. The sample provides coverage of all streams, and this method of selection serves the purpose of the current analysis. The aim of the research is to identify qualities of a specific field, which involves interactions of doctoral students within that field. Consequently, for this study, a statistically representative sample is irrelevant, and the convenience sample described is appropriate and desirable.

In performing the analysis of the interview transcripts, the starting point was the categories developed from the foreshadowed problems identified in the auto-ethnographical account, elaborated and/or modified by the emerging themes and surprises that arose from the semi-structured interview strategy. I reaffirmed or refined categories during the reading of the transcripts, where I followed the open coding strategy suggested by Ely and Anzul (1991). This entails the researcher "reading, thinking, trying out tentative categories" (Ely & Anzul, 1991, p. 145) and exhausting possible categories and categorizing all meaningful pieces of data. This resulted in data appropriately categorized data, from an informed start through to a meaningfully contextualized analysis.

5. Findings¹

The findings are organized and presented along four intertwined themes: the students' experiences within, and understanding of, the streams of the doctoral program; the prominence and influence of paper writing; the students' experiences at doctoral colloquia; and, interactions with their academic supervisors. I use representative data slices to exemplify and support the findings, including auto-ethnographical vignettes of observations and interactions with students and faculty, and interview excerpts.

I examine these themes in terms of Knorr-Cetina's concepts of trans-scientific fields, the resource-relationships within them, and the stream-specific research practices. These practices include the methodology the students learn in the conduct of their research leading to the outcome of a published research paper. This analysis highlights the influence of these aspects

¹ All of the interview transcripts were coded in their entirety. Observations and auto-ethnographical experiences were recorded throughout the period under study. Representative interview quotes are presented here. Within these excerpts square brackets [] indicate text removed/replaced to preserve confidentiality. Text in parentheses () is added for explanation and clarification.

of their education, taken together, on the formation of students' identity, the way in which they come to know themselves in relation to the stream.

Within these themes, I find the students' awareness of the delineations of the different streams is based on methodology, yet is diverse and highly subjective. The students perceive the boundaries between them as less rigid than described by the university. I find, however, that generally, the students' perceive the differences between the streams to be methodological, and resident faculty imposes strict boundaries that demonstrate the methodological tensions between mainstream research and interpretive research. This suggests that the tensions between paradigms within the field are significantly methodological. This tension in turn reinforces the pre-eminence of the scientific practices of each paradigm.

The students' experience replicates the focus on paper writing and publishing evident in the greater research field. While all of the themes are intertwined, the students' focus on writing, presenting, and ultimately publishing a research paper runs through them all. The doctoral colloquia reinforce the paper-writing focus, and imbed ways of presenting research in the student experience there. The influence of faculty facilitators at the colloquium is significant; however, exposure to other students is also an important influence on the students. Within these colloquia, the significance of methodology is also reinforced, as the methods that are used by the particular stream serve to define what is acceptable as 'good research' within that stream, influencing the students' identification within it as their ability to internalize the methodology.

The findings demonstrate how the students' experiences at the colloquia influence their development within their own doctoral program, and their future colloquia behavior. Moreover, when I examine the differences between the students, the students in the Inter-disciplinary stream perceive less freedom than those in the mainstream. Freedom seems to be limited by the ID streams' indeterminacy of what constitutes 'good' research, and by a logic of opposition to the "other" that is mainstream research.

I also find that the students' perception of their academic supervisor's position in the institution and in academia influences the students' web of social relations. The relationship with the supervisor at once facilitates and restrains the students' progress. The doctoral program is a strong socializing environment for the students, but the students navigate that environment to their advantage, benefiting from their supervisor's position, while also protecting it.

These findings illustrate how the students develop and navigate their resource-relationships that transcend the doctoral program. They initiate and expand their resource-relationships at the doctoral colloquia, networking with other students and faculty facilitators. The expansion of these relationships offers the potential for developing their research ideas, fostering potential collaborations, and exposing themselves to potential employers. These experiences influence the students to change themselves, to assume the identity of the stream, through learning how to behave, how to present their work, and how to adopt the practices of their stream. The students navigate these relationships, including the important student-supervisor relationship, to their advantage.

5.1. Defining who's "in" and who's "out"

"If you want to learn more about the paper, schedule an office visit"

The program streams are defined in the webpages and documents of the doctoral program and school of business. The students believe that the organization of the doctoral program this way replicates the North American accounting research field, and they describe the basis for delineation as methodological, in terms of method, underpinned by theory.

"I define stream in terms of methodology, how they conduct the research. I totally believe capital market people and behavioral accounting people can have the same research question but they just do it differently. . . yeah."

[(FE Doctoral Student)]

"So, there's a judgment and decision making stream, and there is a more of a econ-capital markets based stream, and then there is more of a social. . . sociological, sociology based stream. And uhm. . . we do that, when you enter you sort of have the option to choose, I guess, what you want your minor to be in, associated with accounting, so one would be in judgment and decision making you do more of a psych minor, uhm. . . in sociology I guess you do more of a sociology or qualitative methods minor, or in the economics based you do an economics based minor."

[(JDM Doctoral Student)]

The streams' importance is evident in the students' experiences starting prior to entry into the program:

". in order to get into the program in the first place I needed to, I needed to identify with one of those approaches to research."

[(JDM Doctoral Student)]

Not only must the students select a certain stream, they "identify" with the stream before they even commence the program. Students perceive that the streams replicate the structure of the greater accounting research field, and they become aware of the streams' identities, as they become aware that the school has not simply invented the stream structure, but that it has some affinity with the greater research field, and indicates their future place within it:

"Of course. Of course, it's a reflection. It doesn't happen out of nowhere. It happens because it. . . for. . . you know for a good reason, right, again, universities want us to publish in certain journals. People who come from capital markets get paid

more. It accentuates, you have to have these distinctions when you come out, you have to know that you are a capital markets researcher, using capital markets approaches. . .”

[(ID Doctoral Student)]

The students attempt to make sense of their place within the stream by calling upon these structures, and they enact them in their understanding of their own identity within the stream. The students perceive that the streams also indicate what future prospects they will enjoy, and determines the type of research they will do, but also what journals are available for their research output, what faculty positions will be available to them, at what universities, and at what income level. The identity is related to the methodology underpinning it, dictating acceptable research within that stream, contributing to the type of researcher the student will become. The students see this as a reflection of the different North American accounting research streams, here described as “traditions”:

“So, we have, not only these institutional backings, right, but so, the university, the department calls them streams, we divide students, you’re going to this stream, you’re going to this stream, you’re going to this stream. So, we have the institutional, and not only are there rules within the institution, but we have these heads. We have kind of, the speakers of these traditions. And, so we have these talking heads for each one of them, that’s pretty much, defenders of the tradition. And each tradition, what also emphasizes it a bit more is we have the journals in each tradition. We have pinnacle journals for these traditions, so that accentuates it, and then we have, we have to be smart about it, right, so we talk about methodological issues, and we talk about, kind of, different ontologies behind it, and different ways we explore the world. And this kind of reinforces it. Yeah, so, and we just use a bunch of things to kind of help with the distinction.”

[(ID Doctoral Student)]

This demonstrates how the trans-scientific field transcends the doctoral program, as it bears on local scientific activity, while reinforcing the importance of local scientific practices in guiding the students’ education. The students seem aware but unrestrained by the boundaries between streams: you can approach the same research question from a different methodology. The streams have implications for the students’ development, however, as they are aware of the relationship between methodology and resources: they understand the streams to indicate what future prospects they will enjoy.

The prominence of publishing, and what journals are important for publishing, becomes evident early on as part of the identity of a certain stream. Further, the “talking heads”, the faculty that represents the different streams in the greater research field as the local representative of that stream, are also prominent, as they are the ‘defenders’ of that stream. These representatives demonstrate the delineations that transcend the local site of education by defending stream boundaries.

One such instance occurred when an emerging interpretive accounting researcher had been invited to present at the accounting department’s regularly scheduled research seminar. These seminars are attended by faculty, and are mandatory for doctoral students. As is the case, the doctoral students assist with the visits of scholars from other universities, serving as guides and lunch companions, and facilitating office visits with the visiting scholar and the school’s faculty. The doctoral students also have the opportunity to schedule an office visit with the guest.

In this instance, I was the student contact for the visitor. As I showed the visiting researcher from office to office, the discussion with resident faculty was amicable; the school’s professors seemed welcoming and interested in the scholar’s work. During the scholar’s research presentation, however, that relationship changed almost immediately. From the outset, some mainstream accounting faculty aggressively challenged the methodology underpinning his research, with some suggesting that all he had done was look at the data that he wanted, and draw a biased conclusion. Some of the main “talking heads” were unrelenting in a hostile attack on the scholar and his work. Responding with equal force, the scholar advanced his slides to what appeared to be a picture of a mock-up airplane sitting in a jungle clearing, which served as a native group’s idol of the cargo gods, and stated ironically, “this is my literature review”.

The content of the presentation was of general interest to faculty and students from the school’s other departments, and many students and professors from outside the accounting department attended the presentation. The accounting faculty’s attack drew an immediate and disdainful response from the non-accounting faculty members, and one could clearly hear an undisguised whisper of “what a bunch of assholes”. Some complained to the dean of the business school about the accounting faculty conduct during the seminar, resulting in the issuance of guidelines for faculty behavior during future research seminars.

Upon discussion of the usefulness of such a display, I expressed to another, more senior, student that “. . . we didn’t learn anything about the paper”. To this, the other doctoral student responded frankly, “Research presentations are an academic ritual. If you want to learn more about the paper, schedule an office visit” (FE Doctoral Student).

This student’s response indicates an understanding of how the boundaries are delimited and defended, sometimes hostilely, and that there is a time and a place for the discussion of research. The research presentation is not that time and place. This incident shows how the faculty aggressively reinforced the division between the streams. The interpretive researcher, in turn, responded by defining his research in opposition to the mainstream, demonstrating the logic of opposition to the “other”. This opposition between streams, with definition in terms of the “other” seemed to be prevalent, as demonstrated by this student’s understanding of the streams and what they include:

“Who’s in and who’s out. Who’s an insider and who’s. . . . No, I feel like there are more...it’s not as well defined, it’s almost like you have mainstream research, then anything that doesn’t fit into that kind of gets dumped into our area.”

[(ID Doctoral Student)]

This statement exemplifies the definition of the Inter-disciplinary stream not in terms of what it is, but in terms of what it is not. What the student means is that “who’s in” are the FE and JDM researchers, and “who’s out” are the ID researchers. This seems to leave this particular stream more open to different research approaches. When we examine this stream, however, this may not be the case as is shown with the students’ perception of the effect of conferences and colloquia on their subsequent behavior.

The interview data indicate that progressive initiation into the stream starts upon entry to the doctoral program. This begins with the introduction of the students into the specific stream of research, and indicates what type of researcher they are, what they will produce, who they will produce it for, and even what kind of salary they can expect. This helps form the students’ expectations in relation to the greater research field, as the students perceive that this organization of streams is a replication of the research field into which they have entered, and what they “have to know” as part of the identity within that field. They recognize the symbolic nature of the field, and the ritual practices that reinforce the methodological boundaries.

The way the students interpret the doctoral program structure suggests the streams transcend the local site of action and demonstrates students’ awareness of the structure of accounting research as a ‘trans-scientific’ field. Further, while the students appear to be unconstrained by the streams, the stream structure directs the students’ view of the type of work they will be doing, and the future rewards they will enjoy. The students are also aware that prominent local faculty reinforce these boundaries, serving as the streams’ ‘defenders’, and provide more evidence of the impact of the trans-scientific field on the doctoral program by the account of these faculty members’ behavior during a research presentation.

5.2. Learning to write for the “validators”

Every student interviewed emphasized the need to write papers of many types, as submissions for classes, as research assistance or collaboration with their supervisor or others, or as sole author projects. The primacy of producing research papers was part of the experience from the outset, and continued throughout the student’s time at the school.

“Well, the department required all PhD students to do a summer project since the first year. And you’re supposed to present your project in the next academic year, in the fall term of the following academic year. So, I do have pressure. And when I came in, previous students told me this is a good approach because you think about it, you have the first paper coming out from your first summer, and then you have the second paper coming out from your second summer, and then on the third year you do your solo paper, so on the fourth year you can successfully graduate. (Laughter.)”

[(FE Doctoral Student)]

The program coursework requirements thus impose the paper writing process on the students, and other students and academic supervisors emphasize its importance. Coursework is prominent; the potential for publication of a paper, however, is where the real value lies. This potential future value makes one project more important than another one, and directs the students to take risks of poor marks in courses, and suffering damage to one relationship over another, as in the case of a student that has joint supervisors:

“...there is one case...uhm...where...I, where one supervisor had different, you know, plans for me, so to speak, right, so, uhm, I was supposed to write a paper for [One Supervisor], and I was writing it, it took me a few months to write it, and, for a class that I took with him. And [Other Supervisor], uhm, I see him a few months later and [He] had other plans, [He] said, why don’t you write this other paper? And so, I dropped [One Supervisor]’s paper to write [Other Supervisor]’s paper, which was for a publication, for a potential...something that could be published. And I saw that as being a more interesting paper, so I went that route.”

[(ID Doctoral Student)]

As this student chose a paper that could be publishable over a paper that was a course requirement, paper-writing here seems to be more important than the classes the students take, providing more value. The class had a paper submission, rather than an examination, as the deliverable, but writing a paper seemed to add value only to the extent that the outcome could result in a something publishable. The risk to the relationship of publishing a paper versus one that was a course requirement seems inconsequential.

The students see the potential to publish these papers as the major benefit of all of the writing that they do, and resource-relationships formed with other doctoral students influence the way towards, hopefully, getting the paper published. Many students stressed the importance of circulating papers for comment by others prior to submission to a journal for consideration.

“And so I sent him (the supervisor) the copy, and you know, it’s like, you know, hold on, right, like, get other people to read it, send it to [PhD Student at other university], all right, before you waste my time with this, pretty much. Right. So I kind of went back at it again, and I sent it to [PhD Student at another university], and she gave me some pointers. And then worked on it and I sent it to [Supervisor], he gave me some feedback, and so on.”

[(ID Doctoral Student)]

Unsurprisingly, the process of writing papers, soliciting feedback, and submitting papers to an academic journal are significant components of the process, a prominent pursuit in the life of a doctoral student. As this relates to resource-relationships, they write with the knowledge that others must validate their work, the “community of validators”, and they know that their future value is based on publications. The process brings the student into contact with other students, the larger research field, and close collaboration with their academic supervisor, and the goal is clear:

“I’ve always made clear to [Supervisor] that when I write a paper this in one way or another builds towards my, for my dissertation, or it’s something that I hope one time to publish, right. Or good practice. To be completely strategic, yeah. And instrumental about it, yeah, that (publishing a paper) is a main goal.”

[(ID Doctoral Student)]

Resource-relationships, based on some future value, facilitate this paper-writing focus, which in turn is related to the criteria for writing within the particular stream, and with the knowledge that one is writing for ‘validators’. These validators include other doctoral students, the supervisor, and as demonstrated in the previous section, academic journals. That paper writing has become an important part of this doctoral program is consistent with prior research (Raineri, 2015). The ability to write within the paradigm demonstrates the student’s consistency with the methodological identity of the paradigm, that is, how well they have internalized the vague, indeterminate criteria, and the students put forth this internalization for validation by others. While internalizing this as an essential part of their doctoral experience, these students also seem to be acting within the process to their own advantage; they are strategic about how they navigate the program requirements, and manage their relationships.

The focus on paper writing, and the students’ internalization of it, is interwoven into the doctoral colloquium experience as well, discussed next.

5.3. *The doctoral colloquium: connections and identity crises*

“You don’t have to justify your methodology here”

Of the eight students, seven had been to doctoral colloquia. The colloquia attended included the American Accounting Association Annual Doctoral Consortium (AAA-Tahoe), the Canadian Academic Accounting Association PhD Workshop, the Inter-disciplinary Perspectives on Accounting Doctoral Colloquium, and the Critical Perspectives on Accounting Doctoral Colloquium (see Appendix C). The AAA-Tahoe colloquium is the longest at three days, with the others lasting either one or two days.

Attending these colloquia had a profound effect on these students. The colloquia influenced the students in how they approached their own doctoral program upon returning from the colloquium, while also serving to shape the student as a researcher within their own research stream. This occurred through the research presentations at the colloquia, and through networking with other students and faculty. These were related to how the students perceived their future prospects, in terms of successfully completing their PhD program, faculty recruiting, and becoming a publishing researcher.

The research presentations influenced the students through the faculty facilitators, but also through interaction with other students. The students’ presentation of their own research also provided a mechanism for shaping their identity, and is demonstrated here in how it influenced subsequent colloquia behavior. The networking with other students and faculty further influenced the students, in terms of how future relationships might turn into research collaborations or faculty positions, and made the students aware of how their behavior at colloquia will “stick” to them, and affect their future successes in their research field.

Figuring prominently in the responses, the AAA Doctoral Consortium was a significant event, provoking strong reactions in the students. The students who attended noted this doctoral colloquium to be the defining moment of their educational experience. At this consortium, the importance of the presence of the faculty facilitators was evident from the doctoral student responses. The other students attending the colloquium, however, seemed as influential as the faculty:

“But I never. . .uhm. . . I never had that much enthusiasm about accounting research until I went there and I saw how other students, especially American PhD students, how they are trained, how they are. . .how they ask these questions at the conference, and how they participate in the discussion, and I was really motivated by that. . .yeah, I just think that, if I want to be a researcher I should be someone like that. Yeah. . .and I think that was what really motivated me to change myself.”

[(FE Doctoral Student)]

The resource-relationships the students develop through colloquia attendance therefore include the other students as well as the faculty facilitators. While the other students in the doctoral program are a strong influence, as noted above, the influence of the students from other universities at the doctoral colloquium help shape the students’ identity, and are what led this student to “change”.

“I think so, and it’s also the. . .change your attitude about research, right? Uh. . .it’s. . .the interesting thing is, when I came in the previous students basically told me all these. . .like, I’ll just name them, [more senior Students], they are my, really, role models, and then they basically told me, oh it’s okay, this course, you don’t have to know anything, you just do this and do that and then you pass. So, everything is more like. . .just to pass the course as a goal. But, there is not much

passion about research involved. Until I went to that consortium and I saw, Wow, it's different. People have passion and that's how you. . . what I think I really need, in order to finish this program."

[(FE Doctoral Student)]

The senior students in the doctoral program are role models, but the "people" that transcend this site, the people at the colloquium, including the faculty facilitators, and the other doctoral students, exhibit the passion that this student needs to cultivate in their own program. The other people at the doctoral colloquia are especially important for the students to cultivate resource-relationships with that will influence their future research collaborations and careers, exemplifying the 'future benefit' aspect of such relationships:

"I think there is a huge opportunity (at the colloquium) to coauthor outside of your university, which gives you again, a different perspective on research. There is an element of face to face, when someone trusts you to work with you, and so if you've talked with them I think it helps. So, when I went to the conference in Tahoe I met some people and have emailed with them since, and generated some ideas, and said, yeah, in the future we'll probably work together. So, I think it opens doors for you as a student if you get your face out there."

[(JDM Doctoral Student)]

The influence of this experience on the burgeoning researcher is profound, and helps initiate the student into the field. As noted above, the importance of conferences became evident from the informants' responses. However, initially portrayed as an opportunity to present current working papers to elicit feedback, the students soon identified this to be an important aspect of networking and cultivation of a presence at the conference that would lead to recognition in the future:

"Yeah. You learn, you present your paper, you hopefully get to learn, you get some good feedback, you get some good comments, but it's a network. It's, you know, can you talk, do you feel comfortable sitting next to. . . whoever. . . and bring up a discussion."

[(ID Doctoral Student)]

The 'paper', for a student presenting a paper at a colloquium, represents a shared sensibility for a certain stream. Presenting research at the colloquium opens the student up to transformation by the faculty at the colloquium: learning how to write and present, and acceptance of the researcher and the research, is validated through the critique of the student's ideas. This critique can have a profound effect on the student:

"So, I came away feeling just sort of. . . really inexperienced, and really overwhelmed. It wasn't the best experience going into my comps. It blew my confidence a bit. And, you know, it was the first conference I had been to so I didn't really know what to expect. The way it was described was just a really informal sort of discussion, and so I treated it like that and, most of the other students were really well prepared, and so, I must have come off like a complete moron. So that was probably. . . it was a bad experience."

[(ID Doctoral Student)]

This student's feeling after the presentation is significant, as there is an awareness amongst the students that how one presents oneself at the workshop tends to stick, having implications for their current and future valued resource-relationships. The students know that their presence is noted, that other students and faculty are assessing their potential, and that this assessment is long lasting:

"[Faculty member] established that some of these students coming out of [Country] were not as, as prepared as he wanted them to be, as he thought they should be, right, and. . . and you know, these folks are in recruit mode, right, there is this kind of recruiting motor inside of them and it's there, its impressions, you know how rumor filled it is, but so, if I make a complete ass of myself, it's there, it doesn't go away."

[(ID Doctoral Student)]

The impressions the students make limit their ability to facilitate resource-relationships, and may have implications for their future collaboration with other students, and their success in the job market.

These interview excerpts reveal that there are relationships with other doctoral students and scholars that transcend the students' university that have an effect on the students' development. Part of this development is tied to the ultimate outcome of preparing a "paper". Related to this are the writing, presentation, and ultimate publication of the paper. And, unsurprisingly, the doctoral colloquium was a key component of the development of the student. This exemplifies the importance of the community of validators, the internalization of research method, and the future benefit aspect of resource-relationships. The students' way of knowing themselves in relation to how they are evaluated by others (in terms of their ability to demonstrate their knowledge of the scientific method of their stream) reveals how they must change themselves in order to assume the identity of that stream. Prominent in this is how well they have internalized the research process in their particular stream.

When the research process is clear, it is a source of comfort and guidance. Students in the streams with more well-defined mainstream structures perceived themselves as enjoying a high degree of freedom, and direction that allowed for autonomy and confidence in a way of knowing. The FE and JDM students enjoyed a certain comfort in relying on the criteria for "good research", and focusing on one methodology that is consistent with those criteria.

“So, if you can say, ‘I’m really good at archival, I’m really good at modeling, I’m really, I’m a great interviewer and I do really great fieldwork based research’... I mean you want to be able to say this is, this is one thing that I, that I excel at, or that I’ve at least mastered. Instead of dabbling at everything, if you can help it.”

[(JDM Doctoral Student)]

As this quote indicates, the student takes comfort in the ability to be good at one thing. This seems to help create stability for this student, rather than ‘dabbling’, which would be confusing. Developing a methodological skill that is consistent with the identity related to the stream seems to offer a perception of autonomy:

“If you think it’s viable you can do it and there is no one, I mean, people will tell you they don’t think it’s viable, but in the end it’s your direction and your career. It’s very autonomous.”

[(JDM Doctoral Student)]

The students in the Inter-disciplinary stream, which ostensibly has a wider range of both theoretical and methodological options, seemed to lack the reassurance provided by having an identity imbedded within the stream:

“I feel almost like as a researcher I don’t have as much of an identity in this area, I have to create it, whereas with them, it’s almost spoon-fed to them from day one. Cause, if you compare, for example, the type of work that you are doing and the type of work that I’m doing, it’s, I mean they’re so completely different, it’s hard to fathom how we’re... both students of the same [ID] program. Whereas I don’t find that there are as many discrepancies if you’re a student of [other stream]. That’s my impression. Maybe the reality is different, but that’s the way I see it.”

[(ID Doctoral Student)]

The ambiguity of methodology posed by this perspective is in contrast to the more certain views of the students in the FE and JDM streams. In examining this student’s subsequent experience, the effect of the first experience is evident:

“How does it compare to the [Next doctoral workshop]? Uhm...so that particular conference, drawing on my experience from [the first workshop] I was obviously much more prepared and...this goes back to what I was saying earlier, I got a lot of negative feedback from [the faculty facilitator], and again from [the other faculty facilitator, which was the same one as at the first colloquium] because they were really, they didn’t take to the idea of [a specific] Theory and how I was approaching it as a very systematic...almost positivistic approach, and so they really, they were pretty critical of what I was doing. And I attributed a lot of that, again, to, yes, we’re working in the same stream, but completely different traditions. I remember telling [Supervisor], and [He] told me to just ignore it, as long as you can explain what you are doing is important, and why the methodology is appropriate. Which, I think I did, I mean, I certainly could have done it better, but, it was frustrating”.

Author: The [workshop] was frustrating?

“The [workshop] was frustrating. Again, I often feel like I’m speaking to an unsympathetic audience, whether it be on Friday, when you’re speaking to these crazy capital markets people. Who just, who can’t relate at all to what I’m doing. But also when I’m speaking to a so-called sympathetic audience because I’m sort of, like I said, more positivistic, they, they don’t...they can’t relate to what I’m doing.”

[(ID Doctoral Student)]

The ID student felt that the research stream holds a position in opposition to the “other”, i.e. mainstream research, to which he does not conform. Whereas the definition of what research “should be” offers comfort to the more mainstream streams, the definition of what research “should not be” resulted in more limits on the ID students. The students in less rigidly defined areas found the lack of direction to be more constraining than Panozzo suggests it should be:

“Yeah, I feel like a real outsider in this community. Uhhh...I think it does have a tendency to...there are fads, that people jump on, like any area. I think, though, our identity is kind of bucking the idea of having an identity, you know. Yeah, but I don’t feel...I don’t feel a part of it.”

[(ID Doctoral Student)]

This idea of ‘bucking’ an identity consists in the idea of defining the stream in opposition to the mainstream, the ‘logic of opposition’. This logic is at once supportive and exclusive. For example, in explaining my doctoral dissertation work to mainstream audiences, I became used to highlighting how a qualitative approach is a useful way of addressing mainstream questions using a case study methodology and a social theory-based analysis (as opposed to a large data sample, statistical analysis, and a financial economics-based theoretical framework). These elicited typical responses, similar to the one at the beginning of section one (“don’t be afraid of the numbers”), suggesting that quantitative analysis should supplement qualitative work in order for it to be valid, and that if one does not do quantitative work it must be due to either fear or lack of training.

In an Inter-disciplinary Perspectives on Accounting doctoral workshop, however, my explanation for how this was useful was moot, as one of the facilitators stated, “you don’t have to justify your methodology here”. However, whereas I was using a methodology that would be considered ‘alternative’ when compared to the mainstream, subsequent explanations of the same methodology to experienced faculty at that, and similar conferences elicited on more than one occasion the question

“so . . . how is that critical?”. This suggests that such an approach is insufficient; it is not enough for it to be alternative; it must also be defined in opposition to the mainstream. Responding that the approach is indeed interpretive without being critical resulted in blank stares, silence, or suggestions for how to make it “critical”.

This suggests that the Inter-disciplinary environment is more ambiguous and indeterminate in its ideals than those specified by a rigid structure of what forms good research. While the mainstream offers a degree of certainty in how to do research, the ambiguity of the Inter-disciplinary stream leads only to the certainty of what it is not. This indeterminacy offers some flexibility, and acceptance of different approaches. This also suggests that a prominent criterion is opposition to the mainstream; what is important is not what the approach is, but what it is not.

The student experiences related in this section further demonstrate the influences on their development that transcend the doctoral program: at the colloquium, faculty facilitators and other doctoral students demonstrate the changes they must make in order to assume the identity of the stream and have themselves and their work validated. Presenting their ideas, and having them critiqued, goes a long way to demonstrating the internalization of the stream’s methodology, and thus the students’ value. The students take these experiences back to the program with them, where they continue to influence their development.

An important mediator in the process, the students’ academic supervisor helps to guide the student through learning the stream’s research practices, and serves as a link to the stream. Another resource-relationship that the students must manage, the supervisor is at once a facilitator and potential constraint on the students’ entry to the field, which relates to the supervisors’ position within the stream. The supervisor can foster the student or hold the student back. In fostering the students’ ideas, the supervisor may constrain them and mold them in relation to their consistency with the streams’ methodology. This is sometimes part of the supervisor’s strategy, but another form of restraint also depends on the supervisor’s position in the field. Whether the supervisor provides a future value to the student depends upon their prominence in the field, and the supervisor’s consistency with the accepted practices of that field. This is discussed next.

5.4. *The academic supervisor: pushing forward/holding back*

“He was like a father to me. An abusive father. . . but a father nonetheless.”

The above quote, from an established academic reflecting upon the student-supervisor experience, describes the complex relationship between student and supervisor. The academic supervisor serves as a mentor, teacher, and a mediator between the students, the PhD program itself, and the greater scientific field (Haggerty, 2010). The supervisor also restrains, in terms of guiding the student through the rites of passage of their particular stream. The students expressed many of those sentiments about their supervisors:

“ . . . really their role is to guide you throughout the stages of the program, and also to involve you in the work that they’re doing, so that you get hands on experience on how to conduct the work of a researcher. And also to make sure that you are progressing along in the program, meeting all the requirements of the program and achieving milestones at appropriate times and then also to make decisions about your progress in the program too. So, you know, make decisions about whether you complete, or uh . . . pass, your comprehensive exam, whether you’re ready to progress to another stage. Helping you to assemble your committee . . . And so, yeah, they have all those roles, really just to ensure that you progress through the program and you achieve all the milestones needed for the degree to be conferred in the end.”

[(JDM Doctoral Student)]

This relationship begins even before the student enters the PhD program: the program assigns all students an academic supervisor before admission to the program. This aligns the interests between the faculty member who will serve as supervisor and the prospective student, and creates a relationship between the student and the supervisor from the outset.

“Before I got into the program, I got an offer letter, and on that letter I was assigned to [Supervisor]. Uhh . . . as [Supervisor]’s student. So . . . that means before I got in I already have someone to supervise me, and also I was assigned a teaching mentor, who is [Teaching Mentor]. But, ah, so, I feel . . . uhm . . . there are good and bad things about this arrangement . . .”

[(FE Doctoral Student)]

The student’s resource-relationship with the supervisor also rests on an imbalance of control over resources, such as extra funding for work performed (research and teaching assistance), but also in terms of discretionary funding for research projects supporting the student’s work, and for attendance at conferences and colloquia. This imbalance has implications for resources distributed between the established scholar and the developing student, and sometimes acts as a restraint on the student.

Author: Have you ever been to a doctoral colloquium?

“No, no, no Never . . . because [Supervisor] doesn’t . . . my supervisor doesn’t allow me to go to any conference without presenting . . . I couldn’t go to any conferences even though [Other Faculty Member] in my fifth year suggested he would send me to a conference out of research funds from the department, but I had to decline.”

[(FE Doctoral Student)]

This control over resources extends to the control over the students' ideas, and their research:

"...and maybe it's because I'm not as adventurous as I thought I was. Because I know there are limitations. I know that if I come up with a crazy idea, or whatever, my supervisors may take a bit of convincing. I know that I have to convince."
 [(ID Doctoral Student)]

During the interviews, the students expressed a high degree of loyalty to, and were very protective of, their supervisors. They demonstrated a reluctance to criticize, and a fear of embarrassing, their supervisor. The students mitigated any of their criticisms by stressing that it was probably their own fault for any problems with the supervisor. While they were aware of the imbalanced relationship, they also believed that it was natural, and that their position was to do well for the supervisor.

More complex aspects of the relationship have an impact on the students' learning, progress, and opportunities. These have to do with the supervisors' position within their own resource-relationships within the trans-scientific field, as the supervisor's relationships with the school and the greater research field play an important part. This also has to do with the supervisor's exemplification of their research methodology in terms of the accepted research method of their stream. To the extent that the supervisor's research is identifiable as a coherent part of a stream, the supervisor seems to enjoy more or less prominence in the school, and the position of the doctoral student is more or less clear and uncomplicated:

"His research is not market oriented. His research is more like in managerial situations. The...if accounting has external users and internal users. His research is more for internal users and my current research and the education as a modeler is for, mostly for internal users. And, I was educated as an empiricist too, in the Financial Economics stream. I had to go through all the empirical seminars in Accounting as well as in Finance. So, I had a really hard time in this school, pursuing my PhD degree, because there is no structured education system for a person like me."
 [(FE Doctoral Student)]

This is similar to the ID students' difficulties within the indeterminacy of their stream: straddling two streams hampers the student's value as a resource for having more than one skill set. This is consistent with the other student's comment about 'dabbling', in Section 5.3, above. This contributes to the student's lack of coherence with the identity of a certain stream, and resulting lack of importance within the school itself:

"It's very rare...most students go to conferences in the first or second years, out of their supervisor's funding or department funding. But this school never paid any attention to my research...my education...I think because my supervisor is not a big...you know...player in this department... What I observed is, in my first year, whenever [Supervisor] made some comment in seminars, people laughed. People just laughed...hahahahaha..."
 [(FE Doctoral Student)]

A further complexity with the student's relationship to the supervisor stems from the supervisor's position within and connection to the greater scientific field. The student's feeling of belonging in their area had much to do with the supervisor's prominence in their research field.

"Yes...so...the...actually, I'm not getting any...my research doesn't draw any attention from any research schools in Canada. Where people...you know...my research methodology is very rare. People in many cases are not willing to read, at all...then the market is...my assessment of my research potential, and the teaching potential are all driven by my supervisor. I mean that the research potential, that unless I have a publication, and unless my supervisor is recognized by the other party, there is no way of conveying what I am doing to the other researchers."
 [(FE Doctoral Student)]

"So [Supervisor] has almost, he knows that's his area, being the quirky researcher, and so I have a little bit of, I don't know, insight? From [Supervisor]? It helps me kind of know how to sell stuff, right. And he gets turned down, right, he tried to do the [a certain paper for a certain journal], and that didn't work out. It's what we're doing...what we're doing is normal science, you know."
 [(ID Doctoral Student)]

Thus, the supervisors' position in their own resource-relationships, in relation to the validators in the field, has implications for the students. This position in relation to the stream serves as a mediator for the student, in terms of the student's position within the school, their initiation into the field, and their prospects for success in both. The supervisor is not simply a mediator by virtue of the supervisor-student relationship; that seems to have limits related to the conditions of the school and the scientific field, which could in turn serve as a restraint.

6. Discussion

This study confirms the findings of previous studies showing that doctoral student development has been profoundly affected by colloquia (Cho et al., 2008; Fogarty & Jonas, 2010), the spread of US-style doctoral education (Cho et al., 2008; Pelger & Grottko, 2015), and doctoral supervisors (Fogarty & Jonas, 2010). Further, it offers a case study exemplar of how these elements affect the students.

Consistent with Fogarty and Jonas (2010) and Cho et al. (2008), the doctoral colloquia are important in these students' development. The students internalized their colloquium experiences and applied them either in their efforts in the doctoral program or in subsequent doctoral workshops, demonstrating the effects on the students, leading them to "change" themselves. Also consistent with extant research (Pelger & Grottke, 2015; Raineri, 2015) the influence of the US model has led the direction of students' efforts towards the paper writing process as a prominent aspect of their doctoral training. Learning how to do, write, and present research is the students' primary focus. The students' supervisors figure prominently in these processes.

To make sense out of, and expand upon these findings, Knorr-Cetina's (1981) constructivist perspective on scientific action and related notions of trans-scientific fields and resource-relationships are used. Starting with the notion that the activities of scientific investigation are context-dependent social processes of negotiation (Knorr-Cetina, 1981, p. 12), the interview responses and auto-ethnographical vignettes indicate that the students are learning a scientific process influenced by a network of relations, and dependent upon future promises. The students navigate this process as they come to view themselves, and their research, in terms of some future value.

6.1. Indeterminacy and indexicality

Viewing research activity as a process of selections based on some context-specific criteria, or "indexicality", highlights the subjectivity of scientific action and identifies the significance of the knowledge construction process. Prior studies have suggested that accounting research is similarly constructive in this sense (Locke & Lowe, 2008; Lukka & Kasanen, 1995). Certainly, the point of doctoral training is that students learn research methods. The students' perception of the streams, and their relation to each other, however, highlights their lack of concern with the differences between the different streams, as they state that different approaches are available to address the same research questions. The students' reference to methodology and theoretical underpinnings, and their identification with a stream, direct the type of research they will do, and in what journals they will publish. This suggests that the students have not only learned a "method", they have learned the identity around it and formed their value, and the value of their research, in relation to that identity. In the case of a student that straddles two streams, while there is a sense of two identities, there is a lack of belonging to one or the other. Additionally, for the students in the ID stream, they see their stream's identity less in terms of methodology, but more in terms of opposition to the mainstream.

The doctoral students in this study are aware of the different streams, yet internalize their own meaning and basis for the streams' boundaries. The derivation of meaning on the part of the socialized subject in itself is not particularly novel (Berger & Luckman, 1967), however, what is important is how the students associate the boundaries between the streams as being somewhat blurry, yet simultaneously divisive, and significant in the formulation of the stream's identity in relation to the other. This comes from their understanding of the streams from the perspective of being within one stream. The context dependent nature of their understanding of their own stream colours their understanding of their stream and the other streams. Even the university-provided definition of the stream does not create as distinct an understanding; it comes from within the stream.

While that structure is somewhat blurry in the students' understanding of the streams of their own program, they do understand it as a replication of the research field, that it holds consequences for their future prospects, and that the research presentation is one ritual within this replication. The students believe that the stream delineations come from the North American accounting research context, which are no less blurry than their own program's delineations, and there are indications of the differences highlighted by the faculty's impositions of the research field. The students are aware of and appreciate the ritual and symbolism of activities like the research presentation to reinforce boundaries, just as they are aware of the implications of these divisions for their future work and prospects, that is, their future value. This highlights the importance of recognizing trans-scientific fields and resource-relationships. These fields and relationships figure prominently in the students' responses regarding the colloquia, their relationships with supervisors, and the paper-writing process.

6.2. Trans-scientific fields, resource-relationships and the "validators"

6.2.1. The colloquium

The importance of the doctoral colloquium was significant amongst all of the students, as an arena for making connections, distinguishing themselves, inspiration, and "rites of passage" (Raineri, 2013). The students' presentation of their research ideas and work offers validation from the facilitators and other attending faculty, including their own supervisors. The students are under scrutiny at the colloquia, and they know it. They are aware that their performance there will "stick" to them, both in terms of how well they conduct and present research, and in how well they interact with others, including faculty and other doctoral student attendees. This influences their conduct at future colloquia, and affects how they value themselves and their work.

This forum seemed more normalizing the more the stream lacked a specific or strong methodology; the Inter-disciplinary students seemed to have more significant reactions to the faculty than did the JDM or FE students. These were through making errors of omission, rather than commission, that is, not by what they did to conform to their own methodology, but by failing not to conform to the "mainstream".

The other students at the colloquia were also important, in terms of how they conducted themselves in relation to the attending faculty, and in their interaction amongst the students. The interviewees' responses suggest that it was seeing how the students demonstrated their passion and commitment to research was what prompted a "change" in themselves when it came to their doctoral studies. They sought to emulate these students. Meeting and getting to know these students were also important for potential future research collaboration.

6.2.2. *The supervisor*

Irrespective of what stream the students are in, the relationship with the supervisor factors prominently in their development. The asymmetry of this resource-relationship was evident by the immediate influence on the students' identification with a stream, the control over resources, and the direction of work. The less obvious aspects have more to do with "promises" for the future success of the student, which in turn relate to the supervisor's position within the school and the greater research field. The more prominent the supervisor within the school and the research field, the more the student perceived a future benefit. This had to do with the coherence of the supervisor's research within an identifiable stream. The clearer the supervisor fit within a determinant stream, the more secure the student in their value.

Within the school, this translates into the student's ability to flourish within the stream structure, and to find a place within it, consistent with an identity that has implications for their academic development. Within the greater research field, this translates into the student's prospects for both publishing success, in developing a paper that is "understood", and for success in the job market.

6.2.3. *Writing for validation – embracing indeterminacy*

The significance of the research paper in doctoral training, and the mechanism of knowledge production in accounting seem to be similar to that of other academic areas. This relates to how accounting knowledge production has been understood as a social process or social construction, involving individuals and groups (Locke & Lowe, 2008; Lukka & Kasanen, 1995):

"The system of knowledge production in accounting reproduces elements common to most academic disciplines. . . It relies on individual and groups of academics to write research papers and subject them to peer consideration through conferences, electronic fora such as SSRN and ultimately through submission and review at academic journals."

[(Locke & Lowe, 2008, p. 162)]

The production and presentation of a research paper serve as a crucial link between the student and the 'validators' in the field: other doctoral students, the supervisor, and the greater research field through established researchers and doctoral colloquia, through significant relationships, inter-twined with the process of paper writing. The findings demonstrate how, within this process, the students learn to navigate various relevant relationships, directing their efforts towards the future benefit of publishing their research.

The notion of indeterminacy of methodology requires revisiting. To some extent, all of the streams' methodologies are indeterminate, that is, that the methodology and its application are vague, subject to local interpretation of accepted criteria. This is reflected in the students' responses that describe the streams on methodological grounds, albeit on different dimensions.

In general, the students' responses indicate a belief in the freedom to address scientific action from different perspectives. The research process (methodology, theory, etc.) seems unproblematic. While this was so for the students in the mainstream streams, as this process was revealed in the Inter-disciplinary stream it was identified as a having a more profound effect. The ID students demonstrate an understanding of their stream in opposition to the other streams, as something "other" than the mainstream, and as lacking in a determinant methodology, as a stream that has everything "dumped" into it.

An awareness of the replication of the greater research field seemed to be a comfort for those in a stream with a well-defined methodology. This was a source of distress for ID students, however, as they found their way through the confusion of how they should conduct themselves and what they should focus on in terms of appropriate theory and methodology.

The findings suggest that in a multi-vocal research environment, in general, the perception of freedom and innovation exists. Within the streams themselves, however, this freedom is prevalent amongst the students with fewer options to exercise that freedom. The students in the Inter-disciplinary stream that ostensibly have more methodological options, and presumably opportunity to enjoy freedom of innovation through methodological exploration, seem to be more constricted and less free. That the divisions between streams are reinforced in such a way that replicates the division between the mainstream and alternative streams of research creates opposition between streams, and engenders a reaction within the stream that stifles the potential for innovation and freedom that Panozzo (1997) suggested could exist in such an environment.

7. Conclusion

This paper builds on prior research investigating the influences on doctoral education. Offering a case exemplar (Flyvbjerg, 2001) of extant research, it expands upon research showing the influence of doctoral colloquia, the "US model", and doctoral supervisors on the development of accounting academics. In addition, the case demonstrates who influences

the doctoral students, and how, and the process that leads them to view themselves and their work as a resource that will realize some future benefit.

The analysis of the resource-relationships that abound in trans-scientific fields demonstrates doctoral education as a process of learning context-specific methods of research, in which networks of influence act on the students as they learn to navigate the program. The findings demonstrate that, in a multi-vocal setting likened to the European context described by Panozzo (1997), the students in the Inter-disciplinary stream, ostensibly freer to enjoy a variety of methodological approaches actually seem constrained by a “logic of opposition” to mainstream research.

The students in the FE and JDM streams, consistent with Panozzo’s (1997) description of the mainstream US context, have the safety and security of being guided through a process of learning how to do research the “right” way. They have the comfort of a methodological base, which reduces the perception of indeterminacy, giving them the belief of flexibility within boundaries. In the Inter-disciplinary stream, there is greater indeterminacy, and what constitutes good research is ambiguous and vague, but guides the students in what not to do. This “logic of opposition” defines what it is not, but the uncertainty associated with not defining what it is, limits the freedom and innovation of new entrants.

This finding has implications for those concerned with guiding the future of interpretive research, as the future of such research is somewhat in the hands of new entrants. The socialization of those new entrants solely along lines of a “logic of opposition” seems to be limiting, and disuniting. Perhaps the opportunity for future research lies in ways of structuring doctoral programs along lines of “a” scientific method, rather than “the” scientific method, or opposition thereto. Perhaps mechanisms that facilitate training for rigorous application of different ontological and epistemological bases will predicate the advancement of research along different traditions, and advance its defensibility in terms of the merits of what it is, rather than what it is not.

The findings represent the perceptions and experiences of the doctoral students in this particular program. While their experiences are important, they are particular to this context, and students in other programs may have different views. Further work could be done to explore these findings in other settings amongst other students, and more definitive solutions to the “lack of an independent identity” (Ahrens et al., 2008) could be provided.

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Appendix A. Interview Questions²

First set – Background

- What is your highest level of education before entering the PhD program?
- What was your area of study?
- What professional designations do you hold?
- What is your work experience?

Second set – The PhD Program

- How do you define the different Streams of research in the PhD program?
- How does this correspond to the different areas of accounting research?
- What stream of research are you in?
- Do you feel that you have a place, that there is a research community to which you belong?
- Describe the experience with the most impact on your development as a PhD student

Third set – The Doctoral Colloquium

- How many doctoral colloquia have you been to?
- Why did you go to this/these colloquium/a?
- Can you relate to me the experience of being at a colloquium?
- Describe the format/settings of the colloquium
- What was good about it/bad about it?
- Did it add to your education? In what ways?

² The broad questions in the interview guide set the initial direction of the semi-structured interviews, allowing pursuit and exploration of interesting themes.

Fourth set – The Supervisor

Describe your relationship with your academic supervisor
What are some of the problems/good things?

Fifth set – The Paper

Have you written an academic paper?
What kind of academic papers have you written?
What was the process you went through to write the paper?
What was the purpose of writing the paper?
Did you present the paper? Where?

Appendix B

Informant	Years in Program	Other Degrees		Designation(s)	Under-graduate Field of Study
Doctoral Student 1	4	BComm	MBA		Accounting
Doctoral Student 2	4	BComm		CA	Accounting
Doctoral Student 3	4	BComm	MAcc	CA	Accounting
Doctoral Student 4	3	BComm		CA	International Business
Doctoral Student 5	3	BA	MA		Political Science
Doctoral Student 6	5	BA	MA		Public Administration
Doctoral Student 7	5	BComm			Finance
Doctoral Student 8	2	BComm	MPAcc	CA, CIA	Accounting

Appendix C. Interview subject attendance at doctoral colloquia

Informant	Stream	AAA – Tahoe	CAAA	IPA	CPA	Alternative Accounts
Student #1	ID			✓	✓	✓
Student #2	JDM	✓	✓			
Student #3	JDM		✓			
Student #4	JDM	✓	✓			
Student #5	ID			✓	✓	
Student #6	FE	✓	✓			
Student #7	FE					
Student #8	ID	✓	✓	✓	✓	✓

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