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An investigation into the context specificity of the epistemological beliefs of South African postgraduate students pursuing a professional accounting qualification

ABSTRACT

The SAICA competency framework requirement that students apply their knowledge in highly contextualised scenarios suggests that the epistemological stance (ways of knowing) that students should assume is that accounting is contextual in nature and requires the exercise of judgement. This is in contrast to the epistemological stance that the nature of the body of knowledge is such that it can merely be learnt or understood.

In this study the Epistemological Reflection Model (ERM) developed by Baxter Magolda (2001a), and reported in matrix form by Lucas and Tan (2001b) in their investigation into the ways of knowing of accounting students, was customised for use as a survey tool and applied to students studying a postgraduate diploma in accounting (PGDA), in order to investigate the epistemological stance of these students.

This study explores the use of the ERM matrix as a short survey tool in order to expose new areas for research that are hinted at but not clearly identifiable through interviews and open ended questions reported in the literature. In a distinct departure from the objective of previous investigations into students' ways of knowing, which seek to identify the general position that the student assumes, students' responses are gathered and analysed at course level in order to investigate the context specificity of students' ways of knowing.

The study finds that students' responses differ significantly between different contexts and, in addition, that students generally assume less contextual ways of knowing for their academic courses than they do for life in general.

Further research is required to investigate the reliability of the ERM as a short survey tool and its applicability to different years of study, and additional surveys are required to confirm, extend and refine these preliminary findings.

Key words: Ways of knowing, Epistemological Reflection Model, epistemological stance, accounting students, context specificity

INTRODUCTION

What is it that makes the professional accountant competent? This is the question that lies at the heart of the education and training model for any professional accounting qualification. Many professional accounting bodies have addressed this question directly.

The IFAC International Education Standards (IES) for Professional Accountants state that life-long learning is essential in maintaining professional competence. The statements go on to state explicitly that surface approaches to learning are not in the long term interests of either the professional accountant, or the profession and that intellectual skills of understanding, application, analysis and evaluation are more important than the personal knowledge base at the point of entry to the profession (IES2, 2003: prgf 5).

The South African Institute of Chartered Accountants (SAICA) shares the same perspective, which is communicated through its competency framework. The introduction to this identifies the epistemological position that underpins the framework: “The nature of accounting knowledge is essentially context bound. Unlike pure mathematics or theoretical physics, every aspect of the discipline of accountancy is grounded in the real world of current business practice” (SAICA Competency Framework, 2009: 8). The implications of these principles for education are set out in the Competency Framework Detailed Guidance to Academic Programs²⁸ which specifies the level of proficiency candidates sitting the SAICA Initial Test of

²⁸ The qualification process in South Africa requires prospective CA(SA)s complete a undergraduate degree in accounting plus a one year post graduate programme, which are offered only through universities. The programmes are accredited by SAICA.

Competence²⁹ (ITC) are required to demonstrate. Proficiency levels are defined not only with respect to the level of technical ability required, but also the ability to integrate and apply knowledge, solve problems, exercise judgment and reflect. All proficiency levels require a “high degree of contextualization”, in recognition that “competence in the field of accounting is ‘grounded in the real world’ ... and that teaching, learning and assessment is most effectively executed through application in ‘real world’ scenarios” (SAICA, 2010).

These requirements raise two related questions for accounting educators to consider:

- E1** How does the educator gauge where their students are in their view of accounting as context bound? and
- E2** How much influence does the educator have, if any? Can the educator realistically hope to influence students’ perspectives significantly within their own discipline, or are these dependent on the student’s own maturity level, life experience and general academic context and so resistant to change?

These questions are pertinent not only because of the introduction of the new framework, but also because of the concerns that have historically been raised consistently since 2003 in the markers’ and umpires’ comments regarding students’ performance in the QE (SAICA, 2003 – 2008). Markers comment that:

*A serious problem experienced throughout the examination was that candidates were unable to **apply** their knowledge to the scenarios described in the questions...*

This is a major concern, because by the time candidates qualify for sitting for these examinations, one would expect them to have assimilated the knowledge, at least to the extent of being able to apply it to simplified facts as set out in an examination question.

Candidates who are unable to identify the correct issues do not do well in the examination. (SAICA, 2008) [Emphasis per original]

²⁹ The ITC (Initial Test of Competence) is written shortly after prospective CA(SA)s complete their post graduate accounting qualification at an accredited university, on commencement of their three year training contract.

The *prima facie* evidence from the professional exams is that, at present, the extent to which students are applying their knowledge and thinking through problems in a contextual way is below that at which both accounting academics and the profession consider desirable, and as expressed in the Competency Framework. These concerns regarding the quality of accounting education are consistent with those raised in numerous reports internationally. Many similar issues have been considered in the accounting and general educational literature, albeit in different contexts.

In particular Baxter-Magolda's Epistemological Reflections Model (ERM) stands out as being particularly pertinent to the question of assessing the extent to which accounting students view the nature of knowledge embodied in their studies as being contextual, or something less than contextual, in nature. The model categorises students' beliefs regarding the nature of knowledge into one of four categories, ranging from an absolute view of knowledge whereby knowledge can merely be rote learnt, to a contextual view of knowledge whereby knowledge is characterized by the need to the exercise of judgment, based on the evidence in context in arriving at a decision (Baxter Magolda, 2001a). The latter is the stated objective of the SAICA exams that require application of knowledge in a contextualized scenario.

This study explores the adaption of Baxter-Magolda's ERM into a survey tool useful for gaining insight into post-graduate accounting students epistemological beliefs regarding their studies, specifically students beliefs regarding the nature of knowledge in each of their core disciplines. The ERM is adapted for use as an exploratory survey tool and applied to a large post-graduate accounting class (CTA class). The findings reported in this study show that students' beliefs regarding the nature of knowledge differ between the disciplines studied in their postgraduate year and that, although exploratory, the Baxter Magolda ERM has potential to be useful as a survey tool for efficiently assessing students beliefs regarding the nature of

knowledge that forms the subject of their academic studies, in the South African context of large student numbers. The findings reported here are part of a broader investigation into the application of the Baxter Magolda ERM as a survey tool useful for providing insight into accounting students ways of knowing and relationship to other influences thereon.

The focus of this study is the Post Graduate Diploma in Accounting (PGDA) offered by one of the SAICA accredited South African universities. The class size is just over 300 students. The PGDA programme consists of four accounting courses that together make up the technical core of the discipline of accounting: External Financial Reporting, Managerial Accounting & Finance, Taxation & Estate Duty and Corporate Governance (Auditing, Internal Control, Governance). The four disciplines regard their papers as being highly contextualized, and that the consequence of memorization, or even understanding without having adequately reflected on the work, would be a fail. In addition to the four core accounting courses, students were (at the time of the study) also required to take a one semester ethics course. The ethics course has no tests and is assessed by way of essays.

Key considerations arising from the literature regarding Approaches to Learning, Reflection and Epistemological Development

The perspective communicated in the IFAC Educational Standards and SAICA Competency Framework and Education Guide reflects three inter-related areas in education literature: approaches to learning, reflection and the development of personal epistemologies.

The approaches to learning literature identifies three main approaches that students adopt: deep, surface and strategic. Accounting education calls for the creation of learning environments that foster deep approaches to learning, as this is needed in order for

knowledge to be applied in different contexts, an ability not supported by rote learning (Byrne, Flood & Willis, 2004; Hall, Ramsay & Raven, 2004). The ability to apply knowledge and compare and contrast evidence across different contexts is necessary for the development of the highest level of reflective thought (Baxter Magolda, 2001a) and critical reflection (Mezirow, 1998). It is necessary for the professional to be a reflective practitioner in order to be able to respond appropriately to the changing environment in which they operate, deal with ill-structured problems that involve uncertainty, not reach hasty conclusions and exercise professional judgment (Lucas & Tan, 2006a; Leung & Kember, 2003; SAICA, 2010). However, the capacity to reflect and exercise professional judgement has been shown to be underpinned, and so affected, by the development of personal epistemologies (Baxter Magolda, 2001b; Lucas & Tan, 2006b).

Baxter Magolda identifies four increasingly complex epistemological beliefs (hereafter referred to as ways of knowing): Absolute, Transformative, Independent and Contextual. The absolute way of knowing assumes that knowledge is either right or wrong, and can just be learnt. The transformative focuses on understanding that knowledge, while the independent perspective reflects the student's awareness of the necessity of thinking for oneself, and that consequently everyone has a right to their own opinion, with all views being equally valid. Finally, the contextual way of knowing recognises that opinions are not as good as any other and it is necessary to exercise judgment, based on the evidence in context in arriving at a decision (Baxter Magolda, 2001a).

Baxter Magolda developed the Epistemological Reflections Model (ERM, refer Appendix 1) which identifies the student's way of knowing, relative to how students perceive five key elements of the learning environment. This model was developed based on extensive interviews with college students and is used by Lucas and Tan (2006b) as a tool to identify

the ways of knowing of a group of accounting students, through a rigorous interview process. While the model assumes that a student's way of knowing is likely to be generally within one main category at any point in time, both Baxter Magolda (2001a) and Lucas & Tan (2006b) indicate that context may have an influence (Lucas & Tan, 2006b). Similarly, whether students' approaches to learning and reflection may be context specific to some extent has also not been explicitly considered, although again there is some suggestion in the literature that this may be the case (Case & Marshall, 2004).

Consideration #1: The relationship between students' approaches to learning, reflection, ways of knowing and the learning environment

A close relationship exists between students' ways of knowing, how they perceive the contextual factors that shape their learning environment, approach their learning and their level of reflective thinking (Biggs, 1996; Bloxham & Boyd, 2007; Lucas & Tan, 2006b; Leung & Kember, 2003). The literature is underpinned by the assumption that "an approach to learning is a student's response to a context and that the student's response may change depending on how the student perceives the context" (Lucas & Mladenovic, 2004). Various studies investigate in detail the relationship between students' approaches to learning and various key aspects of the learning environment, especially assessment (Bloxham & Boyd, 2007; Shepard 2000) which is considered to be particularly influential in shaping students' approaches to learning (Biggs, 1996) and teaching (Leveson, 2004).

The ERM is a matrix that reflects the relationship between students' ways of knowing and the perspectives they hold relating to key aspects of the learning environment (being their view of the role of learner, peers, instructor, assessment and the nature of knowledge) (Baxter Magolda, 2001b; Lucas & Tan, 2006b). Lucas and Tan (2006a&b) find that there is a need for the ERM to be further contextualised within the specific disciplines in order to improve the

reliability of results, and investigation of whether ways of knowing and/or levels of reflective capacity are discipline or domain specific which is the argument made by Bloxham and Boyd (2007) who view students' responses to their learning environment as even module specific.

Consideration #2: Whether a student's learning approaches and level of reflective thinking differ between courses, or are shaped more holistically and consequently a student's learning response is unlikely to differ or be notably influenced at a course level

If a student's response is context specific, this suggests that a student's approach to learning would be different for different courses if those courses were contextualised differently. This is in contrast to the counter-argument that suggests that there is very little individual courses can do to change a student's approach because it is part of a greater institutional mindset. The former suggestion is supported by the findings of Case and Marshall (2004) who noted a change in engineering students' learning approaches in response to course specific content. However, Case and Marshall do not consider whether the institutional mindset of the two respective institutions is the same, and there seems to be an implicit assumption in their work that because the students are studying in the same discipline, they should otherwise be homogeneous, which is why the difference in findings is attributed to course specific factors and not broader contextual factors.

Biggs' (1996) argument that assessment drives the way students approach their learning would imply that where the nature of assessment differs between courses, students will approach their learning differently for those courses.

Consideration #3: Baxter Magolda's holistic approach to the development of ways of knowing

Baxter Magolda (2004) identifies epistemological development as inter-related with, and inextricably linked to, the students' intrapersonal and interpersonal development. She finds that increasingly more complex ways of knowing (Independent and Contextual) were adopted as students, post-college, developed their own identities and became more reliant on themselves to make decisions and decide their own direction in life, a process she describes as "self-authorship" (Baxter Magolda, 2001a). This aspect of students' development post-college is contrasted to the situation she observed during the college phase, where students ways of knowing were more strongly influenced by external factors as they had not yet developed strong self identities or recognised the authority thereof on their own decisions (Baxter Magolda, 2001a).

Table 1. Proportional distribution of a student's ways of knowing across their four years of college and one year post-college

Way of Knowing:	College				1 year post college
	Year 1	Year 2	Year 3	Year 4	
Absolute	68%	46%	11%	2%	-
Transitional	32%	53%	83%	80%	31%
Independent	-	1%	3%	16%	57%
Contextual	-		1%	2%	12% ³⁰

Source: Information extracted from Baxter Magolda, *Making Their Own Way* (2001) and tabularised

While ways of knowing are viewed as constructed for the person as a whole, there is evidence that there may be context specific differences in students while at college, and even between different disciplines (Baxter Magolda, 2001a; Lucas & Tan, 2006b).

Consideration #4: The (in?)compatibility of reflection and development of complex ways of knowing with the education of professional accountants

³⁰ Baxter Magolda (2001) does not explicitly give the percentage of students adopting an Absolute or Contextual way of knowing post-college, but the narrative of the text is interpreted as no ex-students holding this view 1 year out of college.

The literature underpinning this study shares a common premise that reflection and the contextualisation of knowledge are realistic goals in the education of a professional accountant. This premise does not go unchallenged. Gray and Collison (2002) argue that professional education, which is characterised by the technical nature of the discipline, and influence of professional bodies are at odds with critical, independent thinking and that:

“accounting education in universities will produce, it seems, ethically immature, intellectually naïve, ill-educated, non-reflective, uncritical minds who will, by and large, accept what they are given and reproduce what they are given without any critical engagement with it.” (Grey and Collison, 2002)

The limited empirical study that exists does not support Gray and Collison’s contention that professional accounting education will produce non-reflective, uncritical minds. In a comparison of two studies that measured students’ levels of reflective thinking (Lucas & Tan, 2006a; Kember, et al. 2000), the level of reflective thinking for the accounting students (the subject of Lucas’ study) was slightly better than that of health science students (per Kember’s study). This argument is supported by other studies (e.g. Davidson, 2002; Duff, 2004) which find that accounting students that perform better in exams adopt deep, rather than surface approaches to studying (provided the exam questions are not too simple).

Conclusion

The literature suggests some specific avenues of investigation in informing a response to the questions that need to be considered by accounting educators, as they consider their response to the competency framework and the requirement for contextualization of knowledge.

- L1** The development of a short survey tool to provide information to assist the educator in gauging where their students are in their view of accounting as contextual or not would be helpful, as none currently exists; and
- L2** Investigation into whether students' ways of knowing context (and course/discipline) specific or not.

Research questions and objectives

The objective of this study is to identify whether individual courses can expect to have some or even significant effect on influencing their students' belief regarding the nature of knowledge on their own courses, and consequently influence students towards taking a contextualized view of knowledge within that discipline. Alternately a student's response may be developed at a broader institutional level, in which case the effect of individual lecturers and courses would be limited. Furthermore, some factors may be exogenous to the learning environment. The objective of this study is not to investigate the effectiveness or reliability of the ERM as a survey tool, despite the fact that this would be of interest as it would allow educators' with large classes to readily obtain a comprehensive indication of where their students' ways of knowing are, which through the current interview methodology is not practical to obtain. However, the potential to use the ERM as the basis for a short survey tool is also discussed as a byproduct of the study.

The research questions to address this objective draw on the questions that should be on the minds of educators (E1 & 2), and the questions arising out of the literature (L1 & 2). The research questions are as follows:

- 1) What is the distribution of ways of learning of accounting students within each of the four core accounting disciplines of a university's postgraduate professional accounting programme, as well as for ethics and life in general? (**E1, L1**)

- 2) Are PGDA students' ways of knowing different across their four core accounting courses, ethics and their view of life in general? (**E2, L2**)
- 3) Does the ERM have potential to be used as a short survey tool? If so, what? (**E1, L1**)

Given the small amount of research that has been carried out in the area of learning approaches, critical thinking and reflection within the context of professional accounting students internationally (Lucas & Tan, 2006a), inconsistency of results (Byrne, Flood & Willis, 2004), and that no research of this nature has been carried out in South Africa that could be found, it is necessary to conduct an exploratory study in order to investigate these questions within the South African context. Further, eliciting students' responses at the course level, rather than for the programme as a whole, has potential to provide insight into whether students' levels of reflective thought and ways of knowing can be significantly influenced at course level, and whether constructive alignment exists within the programme as a whole.

RESEARCH METHODOLOGY, METHODS AND DESIGN

Up to now students' ways of knowing have been investigated through interviews (Baxter Magolda, 2001a, Lucas & Tan, 2001b) and detailed written responses to open-ended questions (Baxter Magolda, 2001b). Interviews provide the most in-depth means to access and understand epistemological reflection. However, interviewing and analysing the results in accordance with the ERM, or using a paper instrument, the Measure of Epistemological Reflection (MER), which required students to provide long written responses, is not practical for most educators with large classes, particularly if trying to capture the response of the entire class.

Baxter Magolda's ERM presents a crisp view of the four different ways of knowing, and a description of how these manifest in students' perceptions of several aspects of the learning environment. It has been used to interpret the results of interviews with accounting students

(Lucas & Tan, 2001b) and so the presentation of the ERM used by Lucas and Tan (2001b) formed a promising basis for a survey instrument (Appendix 1). The ERM was not developed for use as a survey and has not been used as such. This study consequently had to address the process of customising the ERM for use as a survey tool.

Customising the ERM for use as a survey tool

Firstly, six columns were added to the end of the ERM, one for each of the five academic courses and the sixth for Life in General, so that students could indicate their response for each course separately, rather than just presenting an aggregated response. This was in line with the objective of the study to test how students' responses varied between different contexts.

Secondly, consideration was given to the wording of the descriptions of each option that the student could choose as a response. Descriptions were very terse and there was the possibility that students unfamiliar with the terminology would interpret the brief descriptions differently from what was intended, and from one another. In addition, certain categories contained multiple descriptions, and there was the risk that students may reject a category because they strongly disagreed with one of the statements, despite the category otherwise being the best fit overall. The most contentious descriptions were included in the role of instructor, particularly "student and teacher work toward goal and measure progress" which, given the highly technical nature of the material, intensity, volume and frequent testing thereof places the student under great strain, and they may strongly disagree with that statement for emotive reasons until the course was completed. Further, the role of instructor was described with respect to three different parties (the learner, the instructor and peers) and since the literature indicates that students may not develop at equal pace in all areas, there was a risk

that students would compensate by choosing the option they disagreed with least, rather than the one that best reflected their views.

Consequently, while the original descriptions were retained, a number of changes were made to reduce the number of different interpretations:

1. The role of instructor was split into two categories, with the intention of comparing distributions of responses for these to investigate consistency between them, and Working Together rephrased as a question that students could indicate the extent of their agreement or disagreement with (five point lickert scale).
2. Descriptions were expanded to remove ambiguity where multiple meanings could be construed due to students' own conception of what terms meant. For example, the absolute and transitional perspectives for Role of Learner both describe the role relative to "knowledge". The word "knowledge" does not necessarily exclude understanding, or the ability to contextualise, particularly as the individual's own perspective of what "knowledge" means is dependent on their own epistemological position, circular reasoning. In order to interpret the description correctly, a narrow interpretation of knowledge had to be assumed, and so that was communicated to respondents by including clarification of what was included and excluded from the description.
3. To assist respondents further with interpreting short descriptions where the emphasis of one word rather than another could affect the interpretation, the word that focused the attention on the spirit of what was meant was underlined.
4. Finally, the descriptions for the Nature of Knowledge were particularly brief, especially given the abstract nature of the concept which, unlike the other categories, did not reflect

some tangible reality to which students could relate. Correct interpretation was particularly important here as the category actually described the way of knowing, and if answered accurately, could be the best indication of the student's general predisposition. Baxter Magolda argues that individuals' way of knowing is inextricably linked to where authority for knowledge lies and that, until the individual assumes responsibility for this, they are dependent on external authorities and consequently incapable of assuming an independent or contextual way of knowing (Baxter Magolda, 2001a). William Perry, responsible for much foundational work on the development of personal epistemologies, provides a very human expression of otherwise abstract articulations of the concept (Perry, 1978, as reported by Entwistle & Ramsden, 1983). This was helpful in adding further explanation which students were expected to be able to understand.

A first draft of the survey version of the ERM was given to academic trainees to complete, and their interpretations debated at length. These trainees had completed the PGDA the previous year and were sensitive to words that would be misconstrued as a result of experiences on the programme. For instance, the third bullet of the description for the Role of Instructor relating to the contextual perspective ("Student and teacher critique each other") was interpreted as meaning "criticise or tear down the person", a process the former students found repellent, given their respect for their lecturers and peers. Consequently, none would have chosen option 4 for the role of learner, despite being in strong agreement with the first two bullets. The description was amended to focus the verb (critique) on the object of each other's "argument", rather than on the person (i.e. "Student and teacher critique each other's *argument*"). The final survey version of the ERM is included in Appendix 2.

Application of the survey to the class

Paper copies of the survey were distributed to the class during the last week of lectures for the year and an electronic version was posted onto the programme's internal webpage. Students answered anonymously. 76 completed surveys were received out of a class of approximately 330 students, 1 of which was only partially completed, and was excluded from the sample (22.7% response rate – refer section 3.4.2). 48 were returned as hard copy, the remainder by email with the respondent's identity hidden.

Data analysis

Survey data was captured into Excel, spot checks done to the actual survey to ensure accuracy of capture, and analysed using SPSS³¹. Students responses are described and frequencies calculated per category, and compared between subjects. These are displayed in a bar chart based on percentages (Appendix 3). Medians were calculated to indicate skewness, which is appropriate for non-parametric data. Although the data is non-parametric, the means and standard deviations were also calculated, but this was for descriptive purposes only, and inference is limited. The level of measurement of the data set is ordinal, rather than interval, as a logic progression is presumed to exist between the possible responses as each possible answer increases in sophistication from the bottom to the top end of the scale (Absolute to Contextual). This is despite the fact that the literature acknowledges that students' development in their ways of knowing may not be perfectly linear from a simplistic, rote-learning view of knowledge (option 1), to a more sophisticated, contextualised way of knowing (option 4).

Students' responses to the different contexts (disciplines) were statistically tested in order to ascertain whether they were similarly distributed, or not. The samples to be compared were

³¹ The statistical software used to analyse the data.

related, and not independent of one another in these two instances, as the distributions for each of the six subject areas relate to the same set of students. Consequently, Friedman's test, with pairwise comparison, was selected to compare the distributions of two or more related samples that are non-parametric, but between which some progression exists. Friedman's test indicates whether the students' responses are distributed similarly across all six subject areas, and the pairwise comparison identifies whether the distribution for any two subjects is similar (or different), and can be applied to ordinal data. The significance level was adjusted for the pairwise comparisons (SPSS makes a Bonferroni adjustment for multiple comparisons by adjusting the p-value) in order to avoid type 1 errors.

Limitations

Accuracy of the results

Reliance has been placed on the student's ability to correctly categorise themselves. Additional questions were not added in order to create the potential to test internal accuracy of the survey. This was for two reasons. The first was that the survey would become quite long, especially if students were to respond to each question six times (once for each context) which would lessen its practicality as an efficient instrument. Secondly, the nature of the study is exploratory and the intention was to prompt questions for reflection and identify areas of interest for future research. A further step that could have been taken to investigate the reliability of students' responses in the absence of an internal scale, is corroborative interviews. It is suggested that in every situation that this survey is used, this should be done as different situations may result in students being sensitive to the meanings of certain words, which may be other than what is intended.

Low response rate and response bias

A 22.7% response rate is low. Furthermore, the potential for response bias is a concern, as the survey was administered in the three week study period before the final exams and students who had an absolute view of knowledge may have regarded this as a very short time to learn a large volume of work, and chosen not to respond to the survey as a result. Consequently, responses may be biased towards students who were more capable, or more easily distracted, or more positively disposed towards the program. In order to gauge the extent of possible bias the distribution of marks self-reported by survey respondents was compared to the distribution that would be predicted based on year marks of students eligible to write the final exams. A skewness in actual responses towards stronger academic performance exists, and the students most at risk of failing the year are under represented. The distribution of respondents is however generally representative of the class as regards gender and ethnicity. As a consequence of the low response rate, the fact that the survey was carried out in the study period preceding the final exams and skewness of response towards better performance, the results cannot be generalised as representative of the class as a whole. (Although at points in this study, the results may be referred to in this way, purely to prompt questions for investigation, and not to conclude on the situation for the class as a whole).

RESULTS, FINDINGS AND ANALYSIS

The results are reported under the research question to which they relate. For the sake of brevity in this section, the four ways of knowing are collectively referred to as “categories”, the 4 accounting courses, Ethics and Life in General as “contexts”, and the Role of the Learner, Peers, Instructor, Assessment and the Nature of Knowledge as “aspects” of the learning environment.

Research Question 1: What is the distribution of ways of learning of accounting students within each of the four core accounting disciplines of a university’s postgraduate professional accounting programme, as well as for ethics and life in general?³²

Comparison of responses to Baxter Magolda’s catagorisation of college graduates

The responses of the 76 PGDA students who participated in this study are compared to Baxter Magolda’s (2001a) classification of the 101 college students who participated in her longitudinal study of college students, that was carried through to 1 year beyond graduation, where the graduates were either in the work place, or studying higher degrees. These are presented in table 2, below.

Table 2. Proportional distribution of students’ ways of knowing across their four years of college and one year post-college (Baxter Magolda) compared to PGDA distribution of responses per category

Way of Knowing:	Baxter Magolda: Holistic Student Classification					PGDA: Proportion of responses per category						
	College				1 year post- college	PGDA						
	Year 1	Year 2	Year 3	Year 4		Total per category:	LIFE	FR	MAF	TAX	CG	ETH
Absolute	68%	46%	11%	2%	-	18%	11%	18%	11%	29%	29%	11%
Transitional	32%	53%	83%	80%	31%	31%	17%	40%	37%	43%	38%	12%
Independent	-	1%	3%	16%	57%	19%	26%	11%	19%	9%	12%	39%
Contextual	-		1%	2%	12%	31%	46%	31%	33%	20%	21%	38%

Source: Information extracted from Baxter Magolda, Making Their Own Way (2001) and tabularised

The proportion of PGDA students included in the contextual category is surprisingly high, although the distribution of results is considerably wider in general. It is not surprising that the PGDA responses represent a wider distribution of responses, as the Baxter Magolda

³² The distributions for students’ responses relating to each aspect of the learning environment are presented in Appendix 3 (graphs 1 – 7). These graphs reflect the proportional distribution per subject.

grouping has been classified into the category in which the student generally fell which would have eliminated the extreme positions that were not in line with the student's general position (Magolda, 2001b). However, the difference between the PGDA pattern and the fourth year and graduate patterns is interesting for several reasons.

Firstly, the difference in the proportional distributions is marked and the trend cannot be discounted on the basis of extreme positions, unrepresentative of the student's general orientation. PGDA students are neither working, nor pursuing a higher degree that is research based. Instead they are studying a highly technical body of knowledge full time, and yet their responses are split evenly overall between the lower and upper two categories (18% + 31% compared to 19% + 31%).

Secondly, the tendency towards the contextual response increases further when the non-technical contexts and aspects are considered. Almost half of student responses for Life in General (46%) fall within the contextual category, and 80% of students responses to the Nature of Knowledge as regards Life in General and Ethics is included in the independent and contextual categories (Appendix 3, graph 6). A separate consideration of the non-technical aspects is important, given Lucas & Tan's (2006b) observation that it is possible that any procedural requirements of assessment do require that a large volume of work be learnt and understood, creating an inconsistency between student's beliefs as to the nature of knowledge, and technical requirements. One conclusion that can be drawn is that some aspect(s) of the programme are successfully encouraging students towards a contextualised view of knowledge, in ways other than the traditional (work experience and research).

Thirdly, the bulk of the distributions are included in the transitional and contextual categories, with responses lower than anticipated in the independent category if an even progression

between categories was experienced (the literature emphasises that no specific progression between categories is assumed, and great variety in fact exists). This implies that the independent way of knowing may be either a perspective held briefly, or bypassed altogether, as the technical and financial orientation of the subject matter does not encourage a view that any opinion is as good as any other, as there are financial consequences that will result, making it important that a well-considered decision is made. It could be argued that the tangibility of financial consequences facilitates the realisation of “what it means to commit” that supports a contextual view of knowledge (Perry, 1978 quoted in Entwistle & Ramsden, 1983, and Baxter Magolda, 2001b).

Comparison of perceptions regarding Life in General to academic study

One of the main findings in the approaches to learning literature is that a formal academic environment, which focuses on, emphasises and culminates in marked summative assessment, encourages strategic approaches to learning, which distracts (and can dissuade) students from taking a deep approach to learning (Biggs, 1996). A contextualised way of knowing would require a deep approach to learning. This raises the question of whether students would exhibit less contextualised ways of knowing (less response 3&4) for courses that were very regularly assessed, contained a high volume of content, and were highly technical in nature. In order to gain some insight into whether this may be the case, the survey asked students to respond not only with respect to the four accounting courses which are the focus of their postgraduate programme, but also to a 5th course that they are required to take in their postgraduate year, Ethics and to their view on learning in Life in General. Generally students' views of what knowledge is for Life in General is more contextual than how they view learning across their four accounting courses, while their view for Ethics is similar to life. This result raises the question of whether the formal academic education is

contributing to students' reluctance to "think". The occasional tendency of academic staff to blame the problem on the students is questionable, as the indication here is that the student is more predisposed towards sophisticated and contextualised ways of knowing, than the academic environment allows for. The indication is that some element(s) of the academic environment (which includes the subject matter studied) is discouraging students assuming a more contextual view of the discipline.

Assessment drives student learning

Biggs (1996) and others (e.g. Bloxham & Boyd, 2007) contend that assessment drives how students approach their learning and a deep approach to learning is considered to be necessary to support a contextualised way of knowing (Byrne, Flood & Willis, 2004; Hall et al, 2004). Just over 50% of students perceive assessment for FR and MAF as assessing their ability to contextualise their knowledge, while less than this see contextualisation as descriptive of assessment in Taxation (and less still for Corporate Governance). An important consideration arising out of this study is whether contextualised assessment is a way of overcoming the problems associated with a formal educational environment otherwise discouraging deep approaches to learning, and consequently discouraging contextualised ways of knowing. This is the philosophical principle underpinning the SAICA Competency Framework (SAICA, 2009), and the primary suggestion made in the Detailed Guide to Academic Programmes (SAICA, 2010) as to what a necessary academic response is in order for students to acquire a contextual view of the discipline.

Context Specificity

The difference in distributions that is evident from the graphs suggests that students' ways of knowing at PGDA level may be context specific. Statistical testing is required to investigate whether the distributions are in fact significantly different, and whether many of the above observed relationships are supported statistically or not.

Research Question 2: Are PGDA students' ways of knowing different across their four core accounting courses, ethics and their view of life in general?

The literature indicates that a student's way of knowing falls generally within a particular category, and while some contextual response is noted, it would not differ significantly for different courses, disciplines or learning environments (Baxter Magolda, 2001b). In contrast, the graphic representations of students' responses to different aspects of their learning environment, indicate that a student's ways of knowing differ substantially across subjects. Seven null hypotheses were set to test whether the distributions for each of the seven aspects across the six contexts (the four Accounting courses, Ethics and Life in General) were significantly different, or not:

Null Hypothesis 1: The distributions of Role of Learner for Life in General, Financial Reporting, Managerial Accounting and Finance, Taxation, Corporate Governance and Ethics are the same.

Null Hypothesis 2: The distributions of Role of Peers for Life in General, Financial Reporting, Managerial Accounting and Finance, Taxation, Corporate Governance and Ethics are the same.

Null Hypothesis 3: The distributions of Role of Instructor (i) for Life in General, Financial Reporting, Managerial Accounting and Finance, Taxation, Corporate Governance and Ethics are the same.

Null Hypothesis 4: The distributions of Role of Instructor (ii) for Life in General, Financial Reporting, Managerial Accounting and Finance, Taxation, Corporate Governance and Ethics are the same.

Null Hypothesis 5: The distributions of Assessment for Life in General, Financial Reporting, Managerial Accounting and Finance, Taxation, Corporate Governance and Ethics are the same.

Null Hypothesis 6: The distributions of Nature of Knowledge for Life in General, Financial Reporting, Managerial Accounting and Finance, Taxation, Corporate Governance and Ethics are the same.

Null Hypothesis 7: The distributions of Working Together for Life in General, Financial Reporting, Managerial Accounting and Finance, Taxation, Corporate Governance and Ethics are the same.

Friedman's Analysis of Variance by Ranks, with Pairwise Comparison was used to test the null hypotheses (detailed above) that the distribution of students' responses for each learning environment category was the same across all six contexts.

Results of the Friedman's tests are that all seven null hypotheses are rejected at the 5% level. The differences in distributions of students' responses between courses are significant for every aspect responded to. As it was evident from the graphical representation of students' responses (Appendix 3) that the distributions for Life in General, and Ethics seemed quite different from the distributions of the four accounting subjects, there was then a potential that the null hypothesis above might have been rejected primarily because of the difference between these three very different areas (Life in General, Ethics and Professional Accounting). Consequently, in addition to testing the similarity of the distributions across the six contexts, the similarity of the distributions across only the four accounting subjects was

also tested, and these were also found to be significantly different on each occasion. It is concluded that students' ways of knowing are generally not consistent across different contexts, or even across different subjects within the same broad discipline. The extent of the differences is substantially greater than anticipated from the literature which indicates that "some" contextual influence may be present, and that students' responses are sensitive to differences in their learning environment at a course level.

While students' responses differed significantly across subjects for each learning environment category, these differences were not distributed equally between subject pairs. Certain subject pairs had no differences in distributions in any learning category. In order to identify whether the differences in distribution were distributed equally between subjects, or were concentrated mainly between certain subjects, the results of the pairwise comparison were re-tabulated, and subject pairs ranked according to the number of significant differences in distribution. Where subject pairs were tied, the pairs were ranked according to the sum of differences in the means for that subject pair.

Students regard Financial Reporting and Managerial Accounting and Finance to be similar to one another, regarding knowledge being largely contextual in nature, and similarly regard Taxation and Corporate Reporting as similar to one another, being predominantly about content which needs to be learnt and understood. Predictably then, the subject pairs between which significant differences in distributions occurred most frequently, were the contrary grouping of the subjects i.e. FR-CG, MAF-TAX, etc. This implies that while students' way of knowing may differ between different contexts and subjects, there is some consistency in students' responses to contexts (or subjects) that the student regards as being similar. i.e. students responses share a similar profile in similar contexts.

Research Question 3: Does the ERM have potential to be used as a short survey tool?

If so, what?

The distinct patterns of results indicate that the ERM expressed in its current form has the potential to identify the various perspectives that students hold regarding the Role of Learner, Peers, Instructor, Assessment and the Nature of Knowledge. The fact that responses were significantly different between the different contexts on every occasion suggests that greater information value for follow-up can be gained if responses are solicited by subject, rather than in general. In this way the survey also has the potential to indicate where courses might not be aligned with one another, or share the same view of knowledge.

CONCLUSIONS AND FURTHER RESEARCH

In this study the ERM was customised for use as a survey tool, applied to a group of postgraduate accounting students, and the results analysed and research questions addressed. In so doing, this study has identified an area for further research not easily exposed through detailed interviews. The distinct trends in the course specific responses expose the influence of external factors on students' ways of knowing at this level of academic study. This is a positive result for educators tasked with the responsibility of preparing students for professional exams and practice, both of which require students to assume a contextual way of knowing to be effective.

Furthermore, the close relationship that was found between assessment and the student's perception of their own role in learning not only supports the argument in the literature for the dominant effect of assessment on students' learning practices (Biggs', 1996), but also highlights the importance of appropriate assessment if educational objectives are to be achieved.

The broad trends that emanate from responses at course level are useful in revealing specific areas for reflection. The indication that students are inclined to assume a more contextual way of knowing for life in general, than what they believe is appropriate for their Accounting subjects, warns against an easy dismissal of Grey and Collison's (2002) criticism of professional accounting education.

Further research

This study identifies specific areas for future research predominantly in the areas of further testing the reliability of the data gathered by the tool, the extent to which the descriptions require customisation for different contexts, and the question of the degree to which students' ways of knowing is specific to different contexts.

Firstly, as the ERM has shown potential to be of value as a survey tool, there is a need to investigate the extent to which students categorise themselves appropriately, as well as whether the amended descriptions communicate the meaning of each response adequately. Consequently, there is a need for follow up interviews to investigate both how students interpreted each response option, and why they selected the option that they did.

Secondly, a survey tool that relied on students to correctly reflect on their own views and correctly classify themselves may have shown potential for success for use with post graduate students. However, this strategy may not be effective for a questionnaire for undergraduate students, and requires investigation.

Thirdly, no conclusion could be drawn regarding the ways of knowing assumed by students at this level of academic study overall, due to the low response rate. There is a need to repeat the study to obtain a much higher response rate in order to answer the question of what the current situation actually is and, in so doing, questions regarding the relationship thereof to academic performance may be addressed. In particular, students that were unable to pass the programme who were largely not represented as a group.

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APPENDIX 1

Figure 1 - Baxter Magolda's Epistemological Reflection Model, (amended), (Reported by Lucas & Tan, 2006b)

Domain	Absolute Knowing	Transitional Knowing	Independent Knowing	Contextual Knowing
<i>Role of learner</i>	<ul style="list-style-type: none"> Obtains knowledge from instructor 	<ul style="list-style-type: none"> Understands knowledge 	<ul style="list-style-type: none"> Thinks for self Shares views with others Creates own perspective 	<ul style="list-style-type: none"> Exchanges & compares perspectives Thinks through problems Integrates & applies knowledge
<i>Role of peers</i>	<ul style="list-style-type: none"> Share materials Explain what they have learned to each other 	<ul style="list-style-type: none"> Provide active exchanges 	<ul style="list-style-type: none"> Share views Serve as a source of knowledge 	<ul style="list-style-type: none"> Enhance learning via quality contributions
<i>Role of instructor</i>	<ul style="list-style-type: none"> Communicates knowledge appropriately Ensures that students understand knowledge 	<ul style="list-style-type: none"> Uses methods aimed at understanding Employs methods that help apply knowledge 	<ul style="list-style-type: none"> Promotes independent thinking Promotes exchange of opinions 	<ul style="list-style-type: none"> Promotes application of knowledge in context Promotes evaluative discussion of perspectives Student and teacher critique each other
<i>Assessment</i>	<ul style="list-style-type: none"> Provides vehicle to show instructor what was learned 	<ul style="list-style-type: none"> Measures students' understanding of the material 	<ul style="list-style-type: none"> Rewards independent thinking 	<ul style="list-style-type: none"> Accurately measures competence Student and teacher work toward goal and measure progress
<i>Nature of knowledge</i>	<ul style="list-style-type: none"> Is certain or absolute 	<ul style="list-style-type: none"> Is partially certain and partially uncertain 	<ul style="list-style-type: none"> Is uncertain – everyone has own beliefs 	<ul style="list-style-type: none"> Is contextual – judge on basis of evidence in context

APPENDIX 2

ERM Questionnaire

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INSTRUCTIONS

Columns 1 – 4 below contain descriptions of the role of learner, instructor, peers, assessment (i.e. tests and exams), as well as the nature of knowledge. Some of these descriptions may seem as if they fit into a continuum as you move from column 1 – 4, others might not – don't be concerned by that (it's debatable!). For each of the 5 categories (in italics) below just select the description that best describes of the role of learner, peers, instructor etc for each course, and learning in life-in-general (and fill this in in the empty blocks under the respective courses). The "role of instructor" category contains two sets of descriptions: please answer both. If you believe that the entire category doesn't apply (e.g. role of peers = "none at all" in your view) then just put "0" into the respective block.

#	Category	1	2	3	4	Life in Gen	Fin. Rep 4.	MAF II	Tax II	Corp. Gov.	Ethics
1	<i>Role of learner</i>	Obtains knowledge from instructor (Here "knowledge" refers to the detail of the subject matter. Understanding, application etc are not included in the meaning of "knowledge".)	Understands knowledge (The focus here is on understanding the knowledge that has been gained, not on applying or using that knowledge to solve problems)	Forms <u>own view</u> and creates own perspective	<u>Integrates</u> & applies knowledge <u>Thinks through problems</u> <u>Compares</u> different perspectives / alternatives & <u>evaluates</u> which is more appropriate, useful etc						
2	<i>Role of peers</i>	Share <u>materials</u> with each other Explain <u>what they have learned</u> to each other	Provide active exchanges that <u>increases theoretical and technical understanding</u> of subject matter	Share <u>views</u> with each other Serve as a <u>source</u> of knowledge ("Source" implies that peers themselves have knowledge <u>of their own or their own opinion</u> that they can contribute.)	Exchange & <u>compare</u> perspectives Enhance learning via quality contributions (e.g. arguing/ debating points/ perspectives/ approaches etc)						
3	<i>Role of instructor:</i>	Promotes gaining of knowledge Communicates knowledge clearly	Promotes understanding of knowledge Communicates in a way & uses methods aimed at understanding	Promotes independent thinking Supports the student in establishing their own view	Promotes application of knowledge in context						
		Ensures that students understand knowledge	Employs methods that help apply knowledge	Promotes exchange of views and opinions	Promotes evaluative discussion of perspectives Student & teacher argue/ debate points, critiquing each other's argument						
4	<i>Assessment</i>	Provides vehicle to show instructor what was learned	Measures students' understanding of the material	Rewards independent thinking in creating and expressing your own	Accurately measures competence in the subject area Is not just a retest of technical or theoretical knowledge & understanding. Tests the student's ability to apply knowledge appropriately in context, exercise judgment & use the knowledge meaningfully						
5	<i>Nature of knowledge</i>	Is certain or absolute "Authorities " in the area generally have all the answers (*Authorities" does not have to mean "lecturers"!)	Is partially certain and partially uncertain Uncertainty is usually the result of authorities in the area not having found the answer yet	Is not certain or absolute – The "authorities" don't have all the answers, everyone has their own perspective & anyone's opinion is as good as anyone else's	Is contextual – it is necessary to judge on the basis of evidence in context Not all perspectives or opinions are as good as any other and the context determines the appropriateness thereof						
<p>Please indicate the extent to which you agree or disagree with the following statement, by using a scale of 1 to 5 where 1 = strongly agree, 2 = agree with reservation, 3 = neither agree nor disagree, 4 = disagree with reservation & 5 = strongly disagree:</p>											
6	Statement: "On this course the student and teacher work towards a goal(s) and assessment (test/exams) measures progress towards that"						Fin. Rep 4.	MAF II	Tax II	Corp. Gov.	Ethics

DISTRIBUTIONS OF RESPONSES

APPENDIX 3

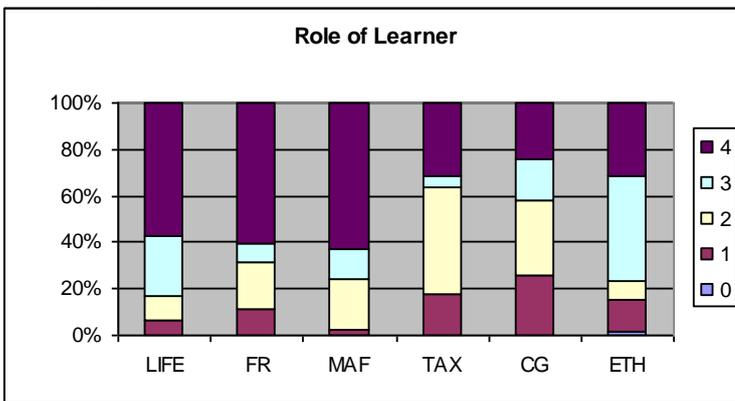
Each graph shows the distributions of responses per subject, and each bar reflects the percentage of respondents that selected each option (1-4). These options represent the following Ways of Knowing:

- 1 Absolute
- 2 Transitional
- 3 Independent
- 4 Contextual

The detailed description of options 1 – 4 that students responded to is included in Appendix 2.

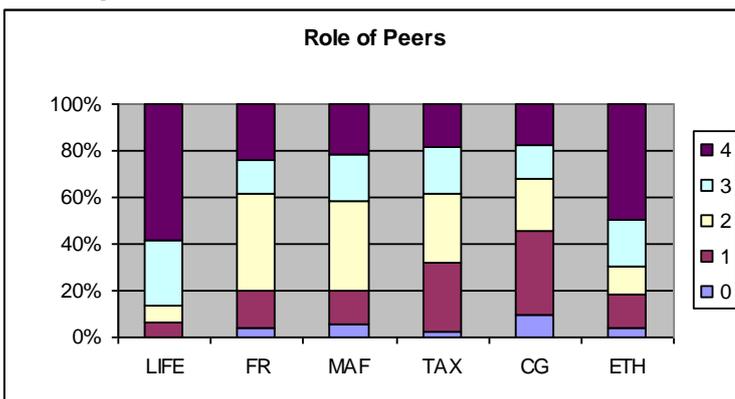
The medians, means and standard deviation for each distribution is included in the table that accompanies each graph.

Graph 1



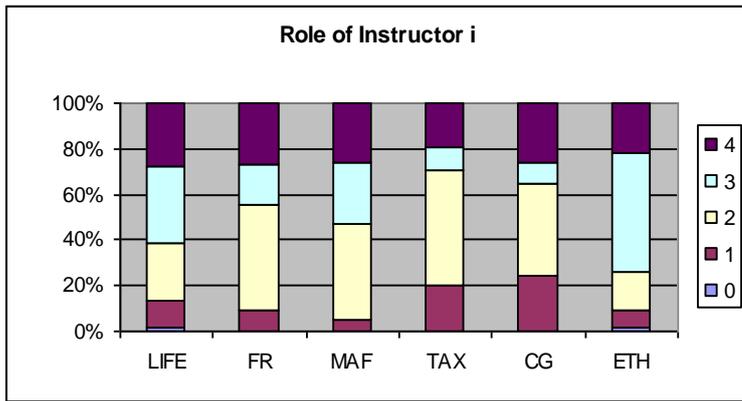
Statistic	LIFE	FR	MAF	TAX	CG	ETH
Median	4	4	4	2	2	3
Mean	3.33	3.18	3.36	2.50	2.41	2.92
Std. Dev.	.92	1.11	.91	1.11	1.12	1.04

Graph 2



Statistic	LIFE	FR	MAF	TAX	CG	ETH
Median	4	2	2	2	2	3
Mean	3.39	2.39	2.37	2.23	1.95	2.96
Std. Dev.	.88	1.14	1.14	1.15	1.26	1.26

Graph 3

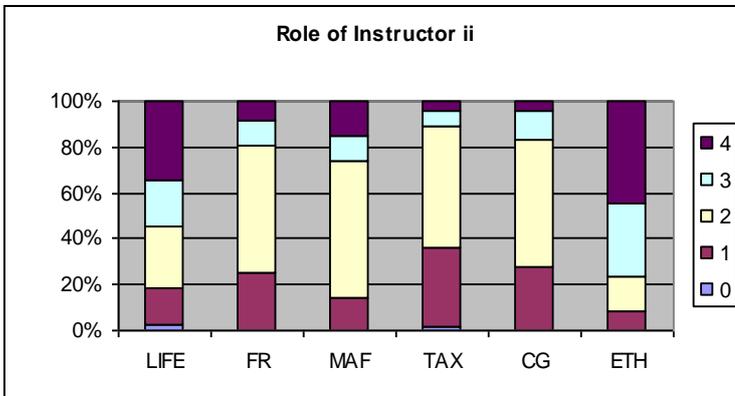


Statistic	LIFE	FR	MAF	TAX	CG	ETH
Median	3	2	3	2	2	3
Mean	2.74	2.62	2.73	2.28	2.36	2.85
Std. Dev.	1.04	.99	.91	1.00	1.12	.90

DISTRIBUTIONS OF RESPONSES (CONTINUED)

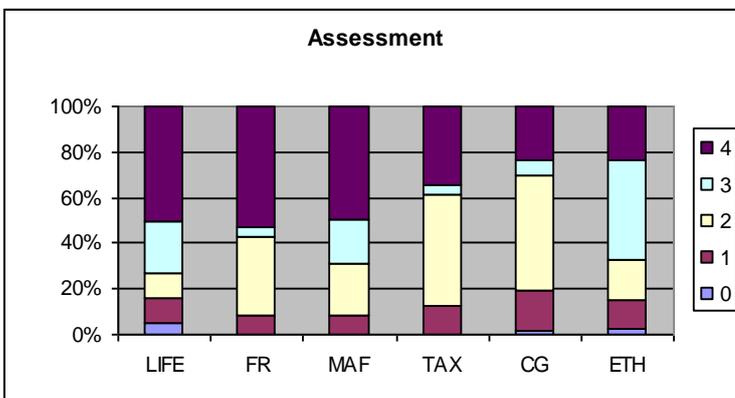
APPENDIX 3 (CONTINUED)

Graph 4



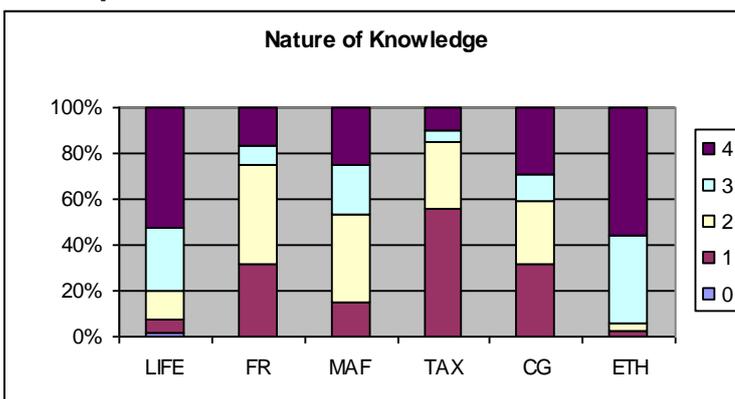
Statistic	LIFE	FR	MAF	TAX	CG	ETH
Median	3	2	2	2	2	3
Mean	2.67	2.03	2.28	1.78	1.93	3.13
Std. Dev.	1.19	.84	.89	.77	.76	.96

Graph 5



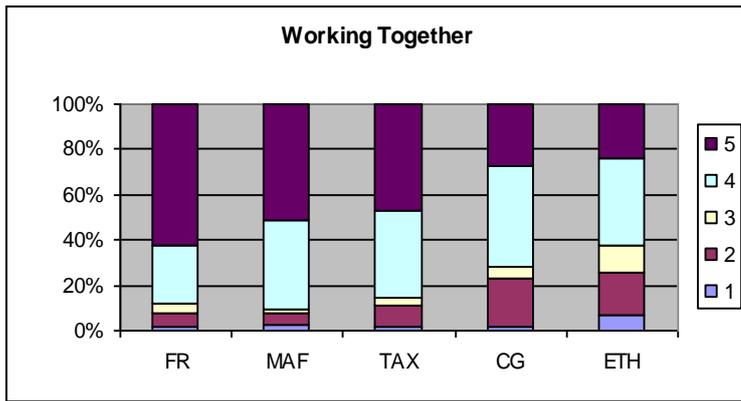
Statistic	LIFE	FR	MAF	TAX	CG	ETH
Median	3	4	3	2	2	3
Mean	2.93	2.97	3.10	2.60	2.33	2.73
Std. Dev.	1.15	1.15	1.03	1.09	1.07	1.04

Graph 6



Statistic	LIFE	FR	MAF	TAX	CG	ETH
Median	4	2	2	1	2	4
Mean	3.23	2.10	2.56	1.68	2.38	3.47
Std. Dev.	.99	1.03	1.03	.96	1.21	.69

Graph 7



Statistic	FR	MAF	TAX	CG	ETH
Median	5	5	4	4	4
Mean	4.41	4.31	4.20	3.74	3.54
Std. Dev.	.95	.95	.99	1.12	1.24