The Qualitative Report Volume 16 Number 5 September 2011 1230-1244
http://www.nova.edu/ssss/QR/QR16-5/dickie.pdf

Winning the PhD Game: Evocative Playing of Snakes and Ladders

Carolyn Dickie
Curtin University of Technology, Perth, Western Australia

The purpose of this paper is to describe a qualitative approach to developing an understanding of the lived experiences of PhD students. Rather than relying on textbook reports and theories about studying a higher degree by research, by allowing the students' voices to be heard, explicit and conscious research can be used to generate appropriate responses to the needs of students as they progress through the PhD process. Thematic analysis focuses on identified themes and patterns of research-learner behaviours. Key Words: Higher Degrees by Research, Post-Graduate Studies, Qualitative Research Methodology, Thematic Analysis.

Achieving academic success and graduating with an earned doctorate can feel like being involved in a game of snakes and ladders. Dedication to research and hard work in designing and implementing a doctoral study program can assist in moving one towards the goal, one laborious rung at a time, provided one is fortunate enough to find a ladder. On the other hand, there are risks with the associated danger of hitting a snake and sliding downwards to where one was weeks or months before. The truth is that opportunities and risks tend to go hand in hand, with the prize going to those who play the higher degree by research (HDR) game evocatively and rely on the effectiveness of personal learning at the same time as they develop strong relationships with supervisors and fellow students. The biggest mistake that can be made is to assume that one can get ahead simply by being good at his/her study.

There is a plethora of information sources that can be accessed to provide guidance on how to progress towards achieving a doctoral degree. Books provide general information about PhDs (Denholm & Evans, 2006; Phillips & Pugh, 2005), specific information on research methods (Bryman & Bell, 2007; Saunders, Lewis, & Thornhill, 2007) and substantial explanations of statistical/non-statistical analysis of data (Cooksey, 2007; Field, 2009). In addition, academic journals and databases available from university libraries contain a myriad of positive suggestions and research evidence regarding the doctoral process.

What is not readily available is information on the ups and downs of being an HDR student; there is an absence of detail related to the substantial pros and cons that affect the progress of students through the PhD process to its successful conclusion. A potential exception to the rule is the *PhD Calendar* (Clark & James, 2002) which is based on students being able to navigate a path to successful completion of their PhD studies. Based on the concept of a racetrack, students and supervisors are asked to think ahead and plan backwards to indicate the major stages and milestones of the 36+ months of their PhD research. A variety of tips, targets, and advice about the process is provided from the university website, books, and brochures to ensure that stepwise advice on

planning items can be placed at the appropriate place on the track. However, students are asked to plan milestones and set their own project tasks, goals, and deadlines onto a blank racetrack.

Given that higher degree by research (HDR) study focuses on the learning about, undertaking, and reporting original research, at the time of enrolment very few students have the academic or practical experience to create a realistic calendar for their PhD studies. Nor does extant literature directly address the matter of issues to be navigated through three or four years of study, perhaps because each person's experiences are idiosyncratic (e.g., according to factors such as the student's skills, research topic, discipline, methodology, supervisor). Nevertheless, studies of PhD completion (or non-completion) have traced the eventual outcomes of the research to planning decisions made, or not, in the early months of the doctoral process (Bryman & Bell, 2007; White, 2002).

Consequently, determining a method for enabling PhD students at various stages of their degree to give voice to their learning experiences seems a natural precursor to providing feedback to university staff charged with improving the delivery, resourcing, and performance of student experiences. The *Bradley Review*, (Bradley, Noonan, Nugent, & Scales, 2008) which highlighted changes that have occurred in the higher education sector in Australia over recent decades, emphasised the current need for improvement and noted "a high quality student experience is central to the future of higher education…. and students are more likely to complete their studies if they are satisfied" (p. 69). Thus, the current concern with determining the students' view of their experiences.

Methodology

The researcher is engaged in supervising higher degree by research students and has an interest in the experience being manageable, meaningful, and minimally stressful for students. In order to make changes to existing practices, it was appropriate to ask the students themselves how they felt about their study.

Participants

After gaining university ethics approval from the IRB (IRB approval number 07/09), the researcher invited 62 full-time doctoral students studying in a university from the business school to participate in the study. All students were provided with study space and facilities in a single building and were all well-known to each other. Of the 62 students invited to participate, 48 responses were received. This signifies a return rate of 77%; a credible response given that a number of students were overseas collecting data and several were absent on parental duties during school vacation.

Of the 48 responses received, 58% were from female students and 42% from male students. Sixty-seven percent of the respondents were international students and 33% were local Australian students.

Data

Data in the form of dot pointed or bulleted, written statements about their higher degree by research experience were gathered from 48 students across four years of doctoral study. The year of research study was not the primary focus of analysis in this study so responses were aggregated into positive, negative, and interesting themes (as explained in subsequent sections). Participation was voluntary and students were provided with a blank sheet headed plus, another headed minus and a third with the heading of interesting. The participants were asked to list those items that, in their experience, fit under each of the themes. No additional cues were provided to students.

Procedure

The approach was to undertake exploratory research, and to gather data from doctoral students without using pre-ordained categories from extant literature or indicating what was, or was not, a relevant or acceptable response. Similarly, because of the preliminary nature of the data, it was considered that the approach to students should not be overly onerous or time-consuming. Therefore, I employed the Plus, Minus, Interesting (PMI) approach, created from de Bono's (1994) lateral and creative thinking strategy.

The PMI strategy was used to allow respondents to answer three questions directly related to their current year of enrolment:

a. What are the positive (*p*luses) features of my current experience?
b. What are the negative (*m*inuses) features of my current experience?
c. What is interesting (*i*nteresting) about my current experience?

The value of the PMI was that doctoral students were able to see both sides of their experiences, look at their different points of view, and make informed decisions about their current position. Another advantage for the participants, and the research analyst, was the invitation to list ideas in a dot-point format under questions placed on a single page rather than consume time unnecessarily on long prose-like responses.

As an experienced higher degree by research supervisor and advisor, the author is often asked for a useful method for analyzing small amounts of qualitative data when young researchers do not feel the need to use sophisticated or complex analytical software. Experience has suggested thematic analysis is a good choice in these circumstances. Theory also suggests that theme coding is a way of reorganizing data according to conceptual themes and forms the central activity of analyzing the content (Bryman & Bell, 2007; Cavana, Delahaye, & Sekaran, 2001).

Analysis

What was sought was a methodology that could be used to study doctoral students in a way that highlights the complexity and uniqueness of their encountered experiences. Normally, there is an institutional expectation that academics will undertake a quantitative approach with an emphasis on the research results being valid, reliable, and

generalizable. However, a qualitative research approach, with its emphasis on individual meaning and participant voice, was more attractive in that it offered an alternative means of collecting data that were credible, dependable, confirmable, and transferable; the latest in line with the concept of *other-settings generalizability*.

Similarly, although all research is bounded by some limitations, a qualitative approach was deemed relevant to meet the constraints, compromises, and choices associated with the project which involved a small population of HDR students within one section of a university, keeping the data collection process simple due to a large number of overseas students with English as a second, third, or more language (ESL), the experience range from less than one to four years of enrolment, and the difficulties of contacting students who worked on individual and independent timetables. Participants' fields of interest varied widely across the general area of the university's business school. Their doctoral research was related specifically to the sub-school in which they were enrolled: accounting, business law, economics and finance, information systems, management, and marketing.

Because there are numerous means of investigating and interpreting the findings of a research project, a decision had to be made as to how the qualitative PMI data on students' voice on experiences could be analysed. There are several very up-to-date strategies that provide holistic measures for analysing impression management (Brennan, Guillamon-Saorin, & Pierce, 2009); however, it was determined that the use of thematic analysis would be appropriate for constructing an interpretation of the data. At the same time, attention was given to the caution from Brennan et al., that positive information is exaggerated while negative information is either ignored or underplayed. Thus, a procedure for the use of thematic analysis was adapted from Aronson's (1994) pragmatic approach to focusing on identifiable themes and patterns of experience; the primary tasks being to identify (tag), combine (link) and catalogue (code) related word patterns into sub-themes, gather sub-themes into a comprehensive view of the information and build a valid argument for choosing the themes. In the following results comments (tags) list the exact words of participants with their de-identification code attached. Links and categories are identified as a result of the researchers' recognition of themes within the actual participants' responses. Decisions about which comments are linked together, and the identification of the most appropriate category are likely to vary among researchers; variation may occur because of the experiences and understanding that the researcher has with the participants and their responses. Consequently, it is neither possible, nor desirable, to be overly prescriptive or dogmatic about the identified themes.

Thematic analysis is a sequential analysis of qualitative data that progresses through identifying items, identifying key words or phrases (sometimes referred to as tags), identifying common links (sometimes referred to as coding) and finally identifying categories among the links (Aronson, 1994). That is, using categorical strategies, thematic analysis reduces an extensive amount of original response data into manageable categories of data for purposes of classification, use in further studies, and allowing qualitative data to be quantified to some extent (Teddlie & Tashakkori, 2009). The specific thematic analysis process can be seen in Tables 2, 4, and 6 where actual student comments have been reduced by the researcher to a number of coded links which then have been grouped into an even smaller number of categories (themes). As an example, the comment (tag) *HDR seminars help in shaping ideas on what needs to be done* has

been coded as *HDR seminars* and the overall concept in the response has been placed into the category of *training*. This method of interpreting the data is in line with the contextualizing strategy suggested by Teddlie and Tashakkori. The author was primarily interested in gaining an understanding of the participants' comments so a three-step process was followed. Firstly, I initially read through of all the comments for each question to gain an overall understanding regarding the feedback for each specific question. Secondly, I re-read the responses to identify the key themes and sub-themes for each question. Thirdly, I read the participants' comments again and allocated the student comments to the applicable key themes and sub-themes. The results of the analysis are presented to match the plus, minus, interesting (PMI) strategy provided to students and the thematic process as described.

Results

Plus – Ladders

As nominated by doctoral students, positive features (*p*lus responses) of the HDR were associated with *ladders* (a reference to the children's game of snakes and ladders) that boosted the advance of the PhD studies. Because the number of participants in the research was relatively small, paper and pencil analysis was undertaken to identify differences that occurred across the four years of enrolment (see Table 1).

Table 1 indicates the responses from participants in each of the four years of higher degree by research study and the number of students in each year. The total number of responses is listed as the number of items and the average number of items per student at each year level. The number of tags indicates the number of different comments that could be identified. Through the analysis process the number of tags was reduced to a number of links indicating common responses and the links placed in a small number of categories (themes). In the pluses, environment included comments from students regarding facilities and buildings because these items were viewed in a similar way as contributing to the overall experience as indicated by the respondent comments in Table 2.

Table 1. *Positive PhD Experiences (pluses)*

Year of Study	No. of Students	No. of Items	Average of Items	No. of Tags	No. of Links	No. of New Categories
1	20	70	3.5	74	16	5
2	9	27	3.0	28	12	1
3	8	21	2.6	22	12	0
4	11	34	3.1	33	14	0

By further collapsing the identified links, it was evident that first year students' responses could be placed into five categories, with the sixth category of *thesis* applicable only to second, third, and fourth years (Table 2).

Table 2. *Positive Experience Categories*

Comments (tags)	**Links (coding)**	**Categories**
HDR seminars help in shaping ideas on what needs to be done (1H)	HDR seminars	Training
English writing classes – what to expect in candidacy (1A)	Writing seminars	
Friendly support and service from staff (1Q)	Support	
Outstanding co-operation from administration staff (1C)	Administration	
Excellent communication to PhD students (1M)	Communication	
Facilities like the lounge and pantry are very convenient (1A)	Facilities room	Environment
Noteworthy that we have a prayer room (1D)	Prayer room	
Handy facilities – fax, printer, phone, personal computer (1J)	Photocopy/Fax/ Computers	
I like the facilities at the university – academic atmosphere (1Q)	Environment	
Outstanding premises (1C)	Building	
Intensive programs on how to make qualified research (1N)	Research skills	Skills
Library enriched with research sources (1J)	Library skills	
Enhancing my horizon and point of view about pursuing a doctorate (1L)	New Knowledge	
Learn from students from many countries (1S)	Peers	Behaviours
I'm learning to be more patient and persevere (1G)	Behaviour	
Valuable feedback from supervisor (1H)	Staff	Supervision
Learning how to overcome difficulty in the data collecting process (2F)	Data	Thesis
Learning to link chapters in my thesis (3F)	Writing	
A sense of achievement felt as I am nearing the destination in a matter of weeks (4H)	Completion	

Comparing the links by placing results of the tags of the four years side by side, it was evident that only in three cases were the positive tags identified in all four years of study; viz., HDR training seminars, PhD students' building, and supervision. However, in

addition to identifying about half the tags nominated by first and second years were concerned with writing conference papers, use of data, specific subject knowledge, research methods, and writing draft thesis chapters; third years added the concepts of the research process, conference presentation, time management, journal writing and the formal literature review; fourth years were positive largely about thesis writing skills, data analysis, self-knowledge, and completing their thesis.

Minus – Snakes

A negative (*m*inus) response to doctoral students' experiences was associated with *snakes* that slowed down, delayed, or hampered the PhD studies. A minus response was recognized by participants as a negative experience or as something that by its absence, reduced the positive experience of PhD study. For example, a minus was captured in a negative experience and indicated by one student as *irrelevant and unhelpful feedback.* Another student identified a minus as *the lack of car parking* (an absence). As with the *plus – ladders*, the analysis of participant comments followed the tag/links/codes system, with result numbers indicated in Table 3.

Table 3. *Negative PhD Experiences (minuses)*

Year of Study	No. of Students	No. of Items	Average of Items	No. of Tags	No. of Links	No. of New Categories
1	20	41	2.0	46	20	5
2	9	21	2.3	22	8	0
3	8	17	2.1	23	16	0
4	11	27	2.5	28	13	0

It was of interest that time management was the only negative issue mentioned by PhD students in all four years of study. Even then, in the first two years the emphasis was on the students' need to become more efficient and effective in their use of time, whereas in the last two years, time was related to the pressure to meet study deadlines and was identified with stress in work-life and home-life. Similarly, changes in *eating* and *reading* habits were indicated as related to the stress created by having to complete the thesis in the fourth year of study.

Prior to examining the *minus categories*, it should be noted that the total number of *minus* tags (i.e., 119) was 38 less than the number of *plus* tags (i.e., 157); a result that confirms the caution of Brennan et al. (2009) mentioned earlier. A similar contraction was evident in the number of categories derived from the minus links; namely,

a. The absence of *training* items reduced the number of categories to five.

b. The mention of *supervision* in only one year reduced the topic from being a category to a link in the *thesis category*, leaving four categories.

c. Skills were barely mentioned and were included in the *behaviour* category, leaving three categories.

d. The increased number of *building* issues warranted separating the topic from *environment* and making a new category; building became the fourth category (Table 4).

In the negative experience component, students more clearly defined the environment and building aspects in their responses. They wrote about the study space and facilities in terms of their environment and issues such as location and car parking in terms of building issues. Therefore, those categories appear as independent of one another in Table 4.

Table 4. *Negative Experience Categories*

Comments (tags)	**Links (coding)**	**Categories**
Study desk is still not available (1P) *We do not have anything for entertainment – TV, etc. (1D)* *Monthly internet quota not enough (3D)* *HDR should have its own library (1K)* *Too many ideas in journals (1F)* *Need to adjust to new environment (3H)* *Teaching and learning not very effective (4K)*	Work spaces Facilities room Internet Library/Computing helpdesk Academic journals Environment Teaching and learning	Environment
Time is moving rapidly – pressures me to work even faster (2F) *Slow at writing chapters – lack focus – easily distracted (2E)* *Too many trivia get in the way (1H)* *Difficulty with academic writing (1N)*	Time management Skills Trivia Academic writing	Behaviours
Lack of car parks at new building (2E) *Difficulty in accessing main campus activities (2C)* *Campus courtesy bus does not run the same*	Parking Distance Bus	Building

hours as the university library (1D) *Move to new building caused distractions to my study (4I)*	New building – move	
Have difficulty coming up with research questions (1A) *Pressure prior to candidacy (1F)* *Difficult to adjust to the ways to do research (1S)* *No party for those who have submitted or had thesis examined (1E)* *Some feedback not relevant - contradicts current literature (2I)*	Research questions Candidacy rules Research process Celebrating completion Supervision	Thesis

In addition to the first year tags, negative aspects raised by second year students included supervision and statistics skills; third years reported pressure on their home and family life as well as concerns about their thesis model, re-writing, reviewing, and analysis; fourth years were concerned about their thesis writing and administration fees. It was noted, across the four years, that students increasingly became focussed on their PhD thesis and less concerned about other categories of experience.

Interesting – Neutral Squares

Interesting experiences are those that are noteworthy or memorable in some way, but they do not advance the PhD process (ladders) or hamper it (snakes), similar to the neutral squares in a game of *Snakes and Ladders*. By simply counting the number of items and tags listed as interesting, and determining the average number of items per participant, it was evident that the interesting aspect of the PMI was the least attractive of the three alternatives (Table 5). Nevertheless, the number of links remained similar to *plus/minus* numbers, suggesting a continuing of the broad range of responses

Table 5. *Interesting PhD Experiences (interesting)*

Year of Study	No. of Students	No. of Items	Average of Items	No. of Tags	No. of Links	No. of New Categories
1	20	30	1.5	30	17	6
2	9	15	1.7	16	10	0
3	8	12	1.5	13	9	1
4	11	18	1.6	18	15	0

In developing categories from the *interesting* experience tags/links (Table 6), it was noted that:

- Multiple aspects of training were reported and the category was re-instated.
- Supervision was re-instated as a category, but was referred to only by second and fourth year students; moreover, all supervision comments related to the standard of feedback provided by supervisors.
- Building was a topic of interest only to third and fourth year students (i.e., those who had spent two to three years in the previous accommodation and, perhaps, were more influenced by being moved to new premises).
- Skills was reinstated as a category, especially as the topic was mentioned across all four years of the HDR experience *and* the type of skills changed from being related to general learning strategies to specific academic, thinking, writing, and research process skills required in producing the PhD document.

Visual scanning of the tags/links of interesting items across the four years of PhD study revealed that, in the third and fourth years, students became more focussed on specific research thesis concerns involving thinking, writing, and research processes such as data analysis, reviewing, editing, and re-writing.

Table 6. *Interesting Experience Categories*

Comments (tags)	**Links (coding)**	**Categories**
Availability of academic advisor is very assuring (4G) *Work in a multi-cultural group (1I)* *Everything here is interesting (1L)*	HDR seminars Developing abilities HDR program	Training
Thanks for the free coffee and tea and sugar(1B) *New office and better facilities (3G)* *To learn and cope with pressure (1F)*	Facilities room Work spaces Pressures of work	Environment
Exciting new place and environment (2H)	Allows concentration	Building
Challenge is to prioritise research work (1A) *I love being exposed to new knowledge every day (1P)* *Links to available, specialized databases (3A)*	Setting priorities New knowledge Library	Skills

Not motivated to work on my thesis – reassuring to know I'm not alone (1E) *First experience of overseas study (1N)* *Meet with people from different backgrounds (1O)* *Relationships among colleagues, staff and supervisors (4A)*	Motivation Overseas experience Varied backgrounds Peers	Behaviours
Feedback from supervisors (4B)		Supervision
Research questions lead to a lot of possibilities/directions (1A) *Interested to find out what my research results will be (1F)* *Research topic links to other sciences (1N)*	Research question/s Results Topic links	Thesis

Discussion

Despite the suggestion that graduate schools have many of the features of a cult (Coates, 2004; Newhouse, 1999), which implies a high degree of programming of individuals, the voices of current PhD students indicate that there is a wide range of PMI experiences associated with undertaking a higher degree by research (HDR) program. Each PhD student brings to the task a unique set of personal, educational, and professional characteristics which are honed by factors that include their chosen research topic, discipline of study, supervisor, school of study, and university of enrolment. Thus, doctoral work can be described as individual professional training.

Nevertheless, what is common to all PhD students is that their training leads to a HDR qualification that attests to their ability to undertake, individually, the doctoral research process; one which is a specific sub-set of research in general, and leads to the publishing of a dissertation that provides evidence of the students' ability to be creative in adding to the established body of knowledge in an academic discipline.

On one hand, the findings strongly indicate that the PMI experiences of HDR students can be subsumed into several categories (viz., behaviours, building, environment, skills, supervision, thesis, and training). On the other hand, within the categories it was evident that the students' emphases changed over the three to four year doctoral study programme. In the first half of the enrolment period there was a concern with behaviours, building, environment and training, whereas in the second half the experiences with supervision, skills, and thesis were paramount. This suggests that as students progress further through their study, the research itself took greater priority over the physical aspects of gaining a higher degree by research.

The findings can be used to formulate more appropriate training and support programmes for students. Further, by understanding the range of actual PMIs experienced by other students, newcomers to the doctoral process can be empowered to be more accurate in planning their progress, more direct in assessing their needs and more cognizant of the value of strong feelings that keep them focussed on their study. Although difficult to generalize from such an exploratory study, the results suggest that

students in the early stages of research are more concerned with environment and experience whereas students in the latter stages are more focussed on the research process and skill development. These outcomes may well apply in other universities and this suggests that further studies are warranted.

Conclusions

As a result of this study, the author offers a deeper understanding of the expectations of higher degree by research students related to the supervision, environment, and learning opportunities. Although this was a single case (limited to a particular context, time, and student cohort) and the insights cannot be blindly extrapolated and generalized to all other contexts, the surfaced information could be used to inform and enable effective management of organizational processes and supervision during times of uncertainty and change for research students.

Feedback from the participants in this study provided three key findings. The first key finding elucidated that the methodology used was appropriate and that students appreciated the opportunity to discuss their individual experiences. Furthermore, responses were based on both internal and external pressures and covered all aspects of the lived experience allowing students to view their situation more holistically and realistically. A second key finding indicated that students experienced a range of emotions and responses from limited to major uncertainty and dissatisfaction, or conversely, a wide range of responses related to a sense of achievement and satisfaction. A third key finding elucidated that students voiced both negative and positive responses regarding the way in which the institution and their supervisor managed and/or supported the student.

Limitations

As with all research, limitations can be identified. In the current research four limitations are identified.

One issue in the current study was the university expectation that students complete the HDR in three years; though some continue during a fourth year; third and fourth year students can be at the same stage of nearing the completion of their research and thesis writing. Consequently, the PhD students' experiences may be described alternatively in terms of early (first two years) or late (last two years) enrolment. Also, the qualitative research used a small number of students in a single division (i.e., Business) of the university. Two further factors could have influenced results; the HDR students had moved to a new building in recent months, and a designated training officer was appointed for the first time to provide doctoral process seminars and academic support. In a qualitative study, because of the intensely personal interaction that can occur between researcher and participant, limitations can be more complex than in a quantitative study that relies on more formal statistical measures.

Secondly, qualitative research fosters much greater expectations on the researcher. A quantitative researcher may be satisfied with research outcomes that influence understanding of current knowledge and models. However, a qualitative researcher is expected to follow the research with operational changes (Hesse-Biber,

2010). For example, in the current case, the use of students' voices to identify actual evidence about their perceptions of their experiences elicited a range of responses from well-known to unknown facts. However, the critical point is not the development of a descriptive model of the research outcomes but changes to the students' experiences that can be effected as a result of the research (i.e., answering the question of what the results mean in relation to students' practices—a concept outside the focus of the current research).

Thirdly, even a very preliminary, small, exploratory study raises issues related to the qualitative research process. Consider the following:

- Rather than limitations being viewed as weakness, in a qualitative study it seems more apt to talk in terms of constraints, compromises, or choices the researcher is required to address in order to maximize outcomes from the study (Teddlie & Tashakkori, 2009).
- Did the researcher achieve the designated aim of the study? It is not unusual in a qualitative study for the aim of the research to become lost in the gathering and analysis of wide-ranging, rich data. In the current study, it is possible to identify a number of aims which, although not necessarily contradictory, suggest that the theoretical and practical outcomes of the research could be confused (Hesse-Biber,2010).
- Although the use of thematic analysis in qualitative analysis is recognised as a standard technique, the use of aggregated numbers and verbal representations of the data does raise the matter of how to best illustrate the data (Aronson, 1994).
- Similarly, the use of numbers and comments is indicative of the challenge to the qualitative researcher to determine the most appropriate type of presentation of results so as to accurately portray the meaning of the data (Creswell & Plano Clark, 2011).
- All research requires a soundly based plan. However, qualitative studies based on a constructivist philosophy require additional attention because of the potential for changes to occur during the research process in response to the involvement of participants (Denzin & Lincoln, 2000).
- Generally, simple and complex statistical techniques of quantitative analysis have been well researched, tested, and written about. However, techniques involving analysis of responses (data) from qualitative research are less formal and require considerable attention from the researcher. In effect, different techniques in a quantitative study tend to be used to confirm results, whereas in a qualitative study the choice of a particular strategy can lead to quite different results being obtained (Lincoln & Guba, 2000).
- Furthermore, in a qualitative study the researcher often has a dilemma about the selection of participants' written or verbal comments; a decision may need to be made about whether to select representative or critical comments, and which comments to ignore (Johnson & Harris, 2002).

Fourthly, and finally, in recent decades discussion of the relative merits of quantitative and qualitative research has given way to the views of mixed methodologists who consider that a large majority of research is a mixture of the two types (i.e., that a

researcher is best served by moving between the perspectives/logics/strategies of qualitative and quantitative research in an iterative manner). Consequently, quantitative and qualitative research is undertaken to achieve the best possible outcomes, depending on where the researcher is on the inductive/deductive continuum.

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Author Note

Dr. Carolyn Dickie is a senior lecturer in Human Resource Management in the School of Management, Curtin Business School, Curtin University where she has been engaged in teaching both under-graduate and post-graduate students in the various Human Resource topics. Carolyn supervises a number of higher degree by research students (both Masters and PhDs) and it was this interest that prompted the current study. Carolyn has published in journals in Australia, South East Asia, and Europe. Correspondence regarding this article can be addressed to: Dr. Carolyn Dickie, Curtin University of Technology, Perth, Western Australia; Phone: +61 8 9266 1367 and Email: carolyn.dickie@cbs.curtin.edu.au

Article Citation

Dickie, C. (2011). Winning the PhD game: Evocative playing of snakes and ladders. *The Qualitative Report, 16*(5), 1230-1244. Retrieved from http://www.nova.edu/ssss/QR/QR16-5/dickie.pdf