Quantitative or Qualitative?  
My Shift from the Study of Numbers to the Study of Humans  

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Introduction  
Educational research is mostly about the study of human action and its implications and consequences within an educational context. Traditionally, researchers within this relatively new social science, just like other social scientists before them, have relied on adopting and adapting the quantitative research methodologies developed over the centuries within the natural sciences. But the increasing understanding that human behaviour, unlike particles in physics and chemicals in chemistry, is conditioned by influential personal and social attributes such as beliefs, attitudes, emotions, health, ambitions and social standing, has given rise in recent decades to serious rethinking about the appropriate manner in which we may gain an understanding into the human mind and actions.

In this paper, I explain the rationale behind my shift away from quantitative research methodologies, which I had previously embraced and enthusiastically practised. I had come to a point where I could no longer keep procrastinating about my growing unease regarding the manner in which quantitative methods brush over the complexity of human behaviour. In reality, my transition from quantitative to qualitative had been brewing for a number of years, but I had never actually bothered to dig deep into the underlying issues until this almost paralysed my PhD studies. The ‘awakening’ process challenged my previous certainties, unfounded as they were, and taught me to live with and appreciate uncertain knowledge. I now understand that knowledge is more valid and useful when it is manifestly fuzzy and limited than when it takes on the baseless guise of certainty and universality.

The Beginnings  
I had been toying with the idea of reading for a PhD ever since my MEd external examiner encouraged me in her report to further my studies. It was however the general ‘commotion’ surrounding the introduction of the Intermediate Level courses in 1995, particularly the Pure Mathematics at Intermediate Level option, that eventually catapulted me into action. Understandably, I ventured into the study full of hope, excitement and expectation. I thought I was embarking on a project that, apart from being an enriching and rewarding experience for myself, would eventually benefit Maltese educational policy and practice, in particular mathematics education. At that point, I was still seeing myself as external to my research, not in the least imagining that the ensuing experience was to affect primarily myself. For although my critical inquiry may or may not lead to improved educational action, it has however strongly challenged, and in the process changed, some of my most deeply held convictions about educational research. What had started as an external ‘crusade’ soon became an inner struggle within me. Because of it, I have widened my horizons, shifted my perspectives and deepened my understandings of educational processes.

Feeling Lost  
The research experience itself was not a smooth, linear path from beginning to end. For certain, my prior experience as a reader of educational literature had not prepared me for the uneven, stumbling and wavering progress that characterizes field research. The difficulties I have had to face emerge clearly from what I wrote at one stage in my fieldwork journal:

After two years at it, I may as well be frank about my ‘ulterior’ motives for doing a PhD. It seemed trendy (many of my friends were doing it); I was bored (I was fed up with watching TV and repeatedly going out to meet the same people in the same places); I thought I could do it (I imagined I had the brains, the time and the money for it); and it seemed like a future investment (it would provide me with alternative career prospects). But I’m afraid I still have to figure out why I’m still doing it!
When I wrote this I was seriously considering whether I should discontinue my studies. I felt then that although time was passing by I was still not making any significant headway. I felt like my dream was slipping through my fingers. Although my head was always brimming with promising ideas, I could never decide which to follow and how. Even my relationship with my supervisors appeared strained at that moment. I felt misunderstood and, at times, I could not really figure out what they were expecting from me. Maybe they were just quietly waiting and hoping for me to find myself. Again, I just could not understand how some other research students who had started with me, seemed to be miles ahead of me. I still had not appreciated how personal doing educational research is in reality. Only later did it sink in that this frustratingly long period of seemingly lack of progress was actually the gestation period I required to move ahead.

**Paradigms and Research**

A paradigm or a 'system of ideas' conditions the thinking patterns of researchers working within it and underpins their research actions. For each paradigm carries its own assumptions about the world and existence (i.e., ontology), about knowledge and learning (i.e., epistemology), and about how knowledge is obtained (i.e., methodology). At any one time, different paradigms compete amongst themselves for acceptance as the paradigm of choice in informing and guiding enquiries aimed at understanding the world. Nowadays, authors normally cluster paradigms under two overarching philosophical positions – the positivist paradigm (with its quantitative methods) and the interpretative paradigm (with its qualitative methods).

I realize with hindsight that my inability to make good progress in the first two years of the study can be largely attributed to my not having considered seriously enough these issues beforehand. I had embarked on the project without having reflected deeply to then decide from a knowledgeable position about my reference paradigm. My unresolved internal philosophical struggle clearly needed to be addressed if I were to register significant progress in the research. I became aware that I could not hope to understand anything that is outside of me without first exploring where I stand on issues in relation to myself as a person and as an educational researcher.

**Statistical Upbringing**

My main research experiences prior to the doctoral project were the BEd and MEd dissertations – both of which reflect my then positivist philosophical outlook that contends that there is a reality out there to be studied, captured and understood. Believing in the existence of an 'objective reality' that exists outside ourselves and is independent of the knower, I used to think that 'reality' can be approximated, and consequently, be better understood, over a number of studies that apply good principles of investigation (read 'quantitative').

Apart from the 'cultural heritage' of positivism, I can think of two main reasons for my previous acceptance of this worldview. First, my overwhelmingly behaviourist-orientated initial teacher-training education at university, and second, my specialization in statistics at undergraduate level mathematics. Still not realizing that even statistics can only result in yet another constructed reality, I erred by confusing the complex mathematical formulae and tests for significance with indicators of importance. So much so that I used to link qualitative methodology to an inferior form of research that suited best those who could not grapple with the sophisticated demands of statistical analysis and inferences.

**First Seeds of Doubt**

The first significant cracks to my positivist outlook on life appeared whilst I was doing the MEd degree. As opposed to my undergraduate experience, here I encountered local people who had actually conducted research within the interpretative paradigm and who spoke enthusiastically, convincingly and competently about it. I grew to appreciate that their work, apart from being well grounded, is a source of...
rich descriptions and explanation of processes in typical local contexts. Moreover, as their work was embedded in everyday constraints, it seemed ‘more real’ than the sterile and clinical world of experiments to which I had been previously exposed.

For the first time I began to wonder if we could actually learn about ourselves, our thoughts and actions in just the same way as we learn about the terrain at our feet and the material world about us. This made me question in turn the validity of using experimental methods, originally developed and employed to study the natural world, to study human consciousness and action. At the very least, I began to realize then that qualitative research offers another worthy facet to educational research – definitely something that should not be dismissed abruptly as had been my custom to do up till then.

But that was as far as I went. For although my ‘interpretative’ side had been stirred, it was still not enough to make me change the traditional methodological direction of my MEd dissertation. Thanks to the persisting influence of my positivist/quantitative ‘upbringing’, I retained at that point an emphasis on the measurement and analysis of causal relationships between variables, not processes. As a result, I came up with a piece of research that did rather well by quantitative criteria, but which left me emotionally unattached. Although I could not readily understand then my almost immediate detachment from this piece of work, I now attribute this to my growing dissatisfaction with the foundations upon which its claim to knowledge was based.

Unsustainable Situation

Years passed between finishing my master’s and beginning my doctoral studies. By that time, I was already understanding better that since human behaviour is not caused in a mechanical way, it is not amenable to the causal analysis and manipulation of variables that are characteristic of the quantitative research inspired by positivism. But my gradual refusal to continue privileging science as universal, superior and final had provoked within me a feeling of losing profound certainties. Even at the technical level, the security that my statistical expertise had previously given me no longer applied.

Ironically, I had embarked on my PhD studies reduced to a novice in need of resocialization from my early and intense exposure to the received view of scientific research. At first, I thought that I could get over my uneasiness by adopting a learning-by-doing approach. My idea was that by doing so I would get quickly into the research project and in the process develop an understanding of it. However, I eventually realized that each time I met a new ‘problem’ – a frequent enough occurrence when reading for a PhD – I was continually falling back on the traditional research model that I knew best. Things had to change.

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Stopping to Move Ahead

At this point I understood that if I was going to swim against all the cultural baggage that I had accumulated over the years of how ‘scientific’ research is done, I needed to entrenched my still embryonic interpretative philosophical position on solid theoretical grounds. Thus, I ‘withdrew’ temporarily from my research proper and concentrated instead on philosophical and methodological readings and reflections. This reconstruction process literally lasted months.

This was to be the final and decisive phase of my ‘interpretative turn’ – my epistemological shift away from positivism and towards interpretivism. Having adequately dealt with this ‘difficulty’, my research took on a new lease of life. I was able from then onwards to adopt research approaches and techniques that complement and demonstrate my underlying philosophical preconceptions. My laborious entry into the qualitative frame of mind, which does not necessarily preclude the judicious use of numbers and statistics, permitted me to start looking ahead with confidence.

I now appreciate that qualitative research, apart from paying due attention to the complexity of human thinking and action, gives the researcher the opportunity to be surprised by his/her own endeavours. For one no longer goes into schools with prepared observation sheets and/or mostly close-ended questions based on predetermined categories that, objective as they may seem, are but the product of the researcher’s biases. Instead of directly seeking to put his/her imprint on the data, the qualitative researcher gives voice to the persons being studied and follows the more interesting leads of the unfolding story.

This methodology, which certainly is not immune to researcher perspective, permitted me to come up with a study that had practically very little to do with what I had initially in mind. The important thing though is that the teachers I worked with emerge as real persons, thinking individuals endowed with their own voice. This makes it possible for the reader to relate to their work context, experiences, practices and expectations. It is this localized understanding that can help us come to terms with complex educational processes with an eye on improvement.

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