

“Ways of Doing,” Learning, Teaching, and Researching

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Abstract

This study of a young learner’s scientific and artistic “sensibilities” in and about a beach place adds to the evidence base about learning in environmental education while contributing to discussions about “emerging genres” of enquiry. The study pays strong attention to the learner’s quest for “coherence” in “coming to know” about the two “ways of knowing” she was expected to compare. It also pays attention to the researcher’s search for “congruence” in investigating and representing her learning experiences. This unique study, therefore, aims for “commensurability” between the learner’s quest for coherence in learning and the researcher’s quest for methodological congruence. The paper concludes with recommendations for pedagogical, curriculum, and research development.

Résumé

Cette étude des « sensibilités » scientifiques et artistiques d’une jeune apprenante au sujet d’une plage ajoute à la base d’évidences en apprentissage en éducation environnementale, tout en contribuant aux discussions sur les « nouveaux genres » d’enquête. L’étude prête très attention à la quête de l’apprenante pour une « cohérence » dans « en venir à connaître », à savoir les deux « façons de connaître » ce qu’elle devait comparer. L’étude prête aussi attention à la quête du chercheur pour une « congruence » en investiguant et en présentant ses expériences d’apprentissage. Cette étude unique, par conséquent, vise une « commensurabilité » entre la quête de l’apprenante pour une cohérence en apprentissage et la quête du chercheur pour une congruence méthodologique. L’article conclut par des recommandations pour un développement de la pédagogie, des programmes d’études et de la recherche.

A 17-year-old, year 12 student, Solana, was required to compare two “ways of knowing” to satisfy the demands of the “Theories of Knowledge” subject she was studying in her International Baccalaureate Diploma Programme. Rather than read books to compare the scientific and artistic ways of knowing, as was expected of her, Solana re-visited a beach setting as an “artist” where, earlier for a different International Baccalaureate Diploma Programme requirement, she had scientifically observed, measured, and recorded particular aspects of the shore, dunes, waves, and wind. This time, she explored, felt, and sketched various beach characteristics and qualities.

Solana's scientific and artistic ways of *experiencing* the beach provided a remarkable opportunity for me, her father, to gain "case study" (Gough, 2004) insights into a learner's learning (Rickinson, 2001) and student thinking (Hart & Nolan, 1999) via the "testing" of an increasingly prominent theoretical concern in environmental education research—the relations of ontology, epistemology and methodology (Robottom & Hart, 1993). Solana's *doing* of science and art at the beach allowed me to investigate how the applied science/positivist and practical/interpretivist "paradigms of knowledge" influenced her *knowing* the beach.¹ For this, I was most interested in the phenomenological aspects of Solana's two experiences, in particular how the scientific and artistic *ways of doing* respectively shaped her changing *perspectives* and *sensibilities* in, about, and toward the beach *place*. There is, therefore, a subtle but significant shift in the focus and intent of this study that departs from earlier discussions in the environmental education research literature about "learning" and learners.

"Evidence" about learners and learning in environmental education has deservedly attracted the attention of researchers (Rickinson, 2001) as has learners' thinking, ideas, and experiences about "nature" and environmental issues (see Hart & Nolan, 1999). Subsequently, critical reflections have been invited and published (Scott, 2003). Mark Rickinson's (2001) important review of published empirical studies (1993-99) on learning and learners in school-based environmental education identified three "well established" and concentrated "nodes" of findings, namely learners' environmental knowledge, attitudes and behaviours, and learning outcomes. Three "emerging" nodes of learning identified by Rickinson were students' perceptions of nature, experiences of learning, and influences on adults. All six nodes, plus other emerging aspects of Solana's *doing*, are considered here in relation to my interest in better understanding her changing perspectives and sensibilities.

There is, therefore, and by necessity given the challenge outlined above, a second purpose to this paper. My interest in Solana's different experiences of the beach presented methodological challenges that are beginning to surface in the environmental education research literature. Paul Hart's (2003) reflections on his own review, and about that of Rickinson, focussed on the diversity of methodological approaches used by environmental education researchers. Hart's and Rickinson's (and others) reflexivity has generated discussion about "emerging genres of enquiry." Of major interest is the quest for coherence in the aims, procedures and methods, and, presumably, consequences of research. At stake are persistent concerns about the representation, legitimation, and politics of knowledge production and claims on "truth."

That said, a cautionary note is offered by way of further introducing the "positioning" of me, the researcher and my quest to gain keener insights into Solana's *doing*, *changing perspectives*, and *sensibilities*. Many environmental educators, like me, have historically privileged the notion of experiential education for many good educational reasons that rarely are supported with

empirical evidence. In my view, the methods of enquiring into the richness of human experience are less than satisfactory, particularly when environmental educators are so rightly concerned with the building and explaining of positive human-environment relations and understandings. Qualitative and interpretive approaches to enquiry still have much to “live up” to if the shift to the qualitative paradigm is to fulfil its initial promise. This “post-phenomenological” case study of Solana’s “experiences and sensibilities” is an attempt to rectify that methodological “lack.” I conclude with some recommendations for teaching and research.

But first. Various commentators on Rickinson’s work address a range of issues too complex to deal with here. Two are worth noting because they help explain my “shift” in studying Solana’s changing perspectives and sensibilities. Justin Dillon’s (2003) critique focused on the lack of commentary about the implicit or explicit theories of learning in the empirical studies Rickinson reviewed. Implicit to Solana’s *doing* the beach place were the *processes* of sensing, perceiving, responding, exploring, interacting, and conceptualizing via the explicit “disciplining” mediums of science and art, the work requirements of her schooling, and the expectations of her teachers. Second, Lucie Sauvé and Tom Berryman’s (2003) critique asks the researcher to clarify the posture he/she adopts in the story(ies) she/he might tell about the “evidence.” With regard to the story(ies) I might tell about the story(ies) Solana did tell about her beach experiences, Hart and Nolan (1999) are, again, instructive. They state, “... anyone can adopt a method, but it takes a thoughtful inquirer to understand the importance of the *perspective* of the knower ...” (p. 32).

So, what were Solana’s perspectives of the learning required explicitly of her by the school and its teachers? How did she implicitly “position” herself in approaching the task of differentiating between two ways of knowing? And, for me, the *insider* researcher, what did Solana’s mix of perspectives and different experiences mean for how I might study and represent her scientific and artistic experiences? Like many learners, Solana knew she had to satisfactorily complete a compulsory task she knew very little about, but intuited as extremely challenging. She *independently* selected (from 10 Theories of Knowledge options) the dualistically “loaded” question, “To what extent may the subjective nature of perception be regarded as an advantage for artists but an obstacle to be overcome by scientists?” Because she needed to research and submit a 1200-1600 word written essay, the “learning” perspective Solana assumed initially, as was expected by her Theories of Knowledge teacher, was the *vicarious* one of getting some books from the library, reading, thinking, and writing.

Reconstructing the Problem

Solana’s perspective changed. She had already visited a remote beach to complete a “scientific” study of its physical characteristics for another work

requirement—an Extended Essay in geography (to be outlined shortly). In returning to the same beach as an artist, she chose not to treat the Theories of Knowledge essay *only* as an abstract, detached, “bookish,” mentalistic, and textual exercise. Nor did she “experience” the contents of the books, or the Theories of Knowledge essay question and her teachers expectations, primarily at home in the study, or at a library, or on the internet. Methodologically, had Solana *done* what was expected, I would have used the usual methods of interviewing Solana, and her Theories of Knowledge teacher, and carrying out a content and discourse analysis of her final essay.

Solana’s *perspective* on completing the Theories of Knowledge essay changed dramatically, as did her sense of “learning” and “experience” of art and science. In planning “real” visits to the beach, Solana actively sought *coherence* in her learning by wanting to experience the beach artistically as a form of doing. She anticipated making additional sense of *knowing* “more” about the two different ways of “knowing.”² The quest for coherence Solana demonstrated in, first, challenging the orthodox approach to learning presumed by her teacher and, second, changing her perspective to artistically experiencing the beach had to be matched by the posture(s) I should adopt as a responsive researcher. I, too, actively sought a heightened level of *congruence* in relation to the unfolding aims, means and ends of enquiry. Crucially, for me, the investigation of her two contrasting but “situated” and “embodied” experiences of the beach demanded an adequate methodology through which such rich experiences might be interpreted, represented and explained, for both Solana and the insider researcher (Payne, 2005). Thus, the “phenomenological/ethnographic” posture employed “experientially” by the researcher/father in this study aspired to a level of *commensurability* with Solana’s experientially-driven quest for “doing” the scientific and artistic ways of knowing.

I felt I should remain “true” to the field’s early promises of “interdisciplinary,” “holistic,” and “experiential” learning via an “ecological” approach to inquiry. My quest for better understandings of the richness of human experience, including the vagueries, presences, absences, and otherness of human (environmental) agency, is more likely to proceed via a “micro” focus on the situated, *contextualized*, and embodied nature of learners’ experiences. Whilst it remains useful for teachers and researchers to use recognized disciplinary means to study the conventional “evidential” outcomes of knowledge acquisition, attitudinal change and so on, it is also time, following Rickinson’s findings about three emerging nodes, to broaden the conceptions and practices of what it might experientially involve and mean for learners (and researchers) to *be*, *do*, and *become* environmentally educated.³

There were, therefore, powerful reasons for adopting a phenomenological/ethnographic case study posture and “assemblage” of methods in partially representing Solana and my experiences of doing, knowing, and re-researching (the beach place). Due to word limitations, for this particular case study, the basic research question was confined to:

- What “sensibilities”⁴ about the beach and its coastal conditions did Solana demonstrate in her two “ways of doing” as “knowing”?

Described in more detail elsewhere (Payne, 2005), the contours of this post-phenomenological approach to enquiry include—participant/observer in conduct, socio-ontological in focus, interpretive of human agency and its material, habitual, social, and symbolic structurations and technological mediations. (In)significant experience is multi-“layered” and “memoried,” has continuity and can be habitual, uses bodies as both site and tool of enquiry, is experientially empathetic between researcher and researched, is generative of co-produced meaning-making via a range of representational mediums indigenous to the experiences of the participants in question, and partially accepting of the limits of rational expression and their presentation. This “tall order” demand for the researcher in re-presenting the “findings” of post-phenomenological enquiry is further limited by the form of publication.

Student, Context/Situation, and Perspectives

At the time of this study, we lived in an inner city suburb in Melbourne in a modest and comfortable three bedroom house. Solana was keen to do well at school, had performed well academically, in sport and in music, read widely, spoke two languages, had a wide and varied friendship group, was keen to enter university possibly to study human geography. She had never demonstrated much interest in drawing and painting. Her year 11 and 12 was stimulating and challenging because of the amount and intensity of work and assessment.

“Theories of Knowledge” was a compulsory year 11 and 12 subject taken by students undertaking the International Baccalaureate Diploma Programme. Offered in many countries around the world, often in schools with a privileged status, the International Baccalaureate is, arguably, an example of the “globalization” of education (Cambridge & Thompson, 2004) and “world citizenship” into which middle/upper class learners and their families are now being ushered. Anecdotal commentary in Melbourne suggests the International Baccalaureate Diploma Programme is more academically inclined than other year 12 options available in the State. In some respects, the International Baccalaureate Diploma Programme is a “re-traditional” version of the western “liberal” education. Six subjects selected from five categories provide for a “balanced” and in-depth study over two years.

Theories of Knowledge is a “core” subject that infiltrates all six subjects. It was presented to Solana as a seminar type series of lectures/workshops and supplemented by pre-selected reading materials. There were three work requirements, one being the 1200-1600 word essay Solana chose to compare the scientific and artistic ways of knowing. International Baccalaureate

Diploma Programme students also participate in 150 hours of community work, the expressive arts, and sport. The Extended Essay is yet another requirement—a 4000 word “mini” thesis. It was completed over a nine month period and develops the knowledge base of one of the six subjects selected from the International Baccalaureate Diploma Programme. Solana chose to study something in geography.

The Scientific Way of Knowing

For the Extended Essay, Solana eventually studied the characteristics and coastal conditions of three neighbouring beaches, facing different directions, in strongly contrasting weather patterns. Earlier Solana and I had discussed her options and arrived at the possibility of mapping how an inner city bayside beach and its low lying surrounds would progressively be inundated in 50 then 100 years time if sea level rises projected by scientists working on the effects of climate change proved true. Solana’s teacher recommended a study that more closely replicated and extended an earlier geography excursion she had participated in during year 11. Subsequently, two separate visits were planned by Solana and I to collect six data types at each of the three beaches. She employed the “scientific” approach to collecting data learned during the year 11 geography excursion. Her aim was to compare the beach energies and coastal conditions of the three beaches. She was enthusiastic and interested.

To complete the Extended Essay over a nine month period, students were required to engage in the methods of “critical research” and “in-depth study of a limited topic within a subject” intended to give students experience of the kind of individual, independent, and sustained research work that is encountered in tertiary institutions. Emphasis was placed on the process of engaging in personal research and on the communication of ideas and information in a logical and coherent manner. The recommended process included defining a topic and formulating a research question, accessing the appropriate resources (people, library, laboratory), using techniques of gathering and analyzing information/evidence/data, documenting the methods and acknowledging sources, developing findings and drawing conclusions. Students are matched with a supervisor, normally a teacher from the subject discipline closest to the student’s proposed topic. The supervisor acted as a “mentor” assisting the research process and advising on the structure and content of the essay.

The initial “learning theory” assumed in planning the Extended Essay was one of “social constructivism” where the learner is placed at the centre of the inquiry and choose, first, a subject and, second, a topic. Solana’s mentor was assigned; some “quick” students chose a supervisor despite having no topic. Resources and previous examples of Extended Essays were supplied by the school and various teachers. The student’s role is then to problem solve

and negotiate directions with the supervisor, who remains a source of knowledge and authority, but in the limited capacity and “restricted” power “relation” expected of a mentor. Solana’s choice of topic and use of data collection methods were clearly based on the previous geography excursion to a bayside beach where, for three hours at one location, her teacher instructed, trained, and helped students practice a range of data collection procedures.

In Solana’s instance, the learning theory underlying the actual planning and conduct of the Extended Essay was, therefore, significantly “governed” by a) her prior “disciplined” experience of scientific procedure in physical geography and b) the authoritative expectation by the teacher, school (and examiner) of the conventional structure of the Extended Essay report.

At the beach, Solana measured or calculated wave frequency and height, wind direction and speed, beach gradient, and sediment size from three different beach types on two occasions six weeks apart when weather conditions were rough and calm. It took approximately 45 minutes to collect the six data types at each beach. A 12-year-old cousin and I assisted in collecting data; Solana directed. I “instructed” Solana on, for example, how to count waves when there was no fixed reference point and advised her on the need to account for variables. Her “semi-experimental” research “design” took into account variables that could be controlled, and used a range of pre-determined measures suggestive of finding change over time at each, and between the three beaches. Our time at each beach was “task driven” given the “variable” constraint of collecting data at low tide only. She used a number of tools to collect data including a stop watch, compass, and clinometer we made at home. Her data were recorded numerically in tables, some of which were verified by accessing Bureau of Meteorology data gained electronically from the internet and from the print media forecasts and records. Findings were developed and conclusions made relevant to her understanding of the (pre)existing body of knowledge about coastal geomorphology searched for in various libraries. I helped her literature search.

The analysis of data, redrafting and final “write up” of the Extended Essay took many hours over a number of months. I reviewed some drafts primarily for editing but also for posing additional questions of her analysis and findings. Solana later described the writing process as “tedious but interesting,” “challenging” in understanding texts on geomorphology, data were “easy to interpret” because “it was based on hands-on-experience,” “felt neutral” in arriving at findings, and “relieved” to submit on the due date. Her mentor/supervisor “didn’t play a major role” but “was helpful” in giving advice and lending books.

The Artistic Way of Knowing

Two months after collecting the “scientific data” Solana returned to one only of the three beaches, this time as “artist” so she could “experience” a response to the Theories of Knowledge question. Solana told me that her Theories of Knowledge teacher was hesitant about her proposed “doing” strategy because of her propensity to write descriptively and not “analytically.” Solana returned to the “wildest” of the three beaches. Initially, “traces” of her previous scientific experience were evident. She returned to the same “spot” and sat down where she measured the beach gradient. Seeing this, I encouraged Solana to explore the area.

We spent about three hours at the beach. We wandered around separately. Following my encouragement to explore, Solana “immersed” herself in various spots. She later explained to me how she initially struggled to “listen,” “feel,” and “taste” the beach. “Looking” and “touching” came easily. Solana spent the last part of her increasingly “cold” stay doing some “realistic” and “imaginative” sketches. Prior to the trip, I had highlighted the importance of “recording” her experience on paper so that she could “compare notes” with her Extended Essay.

The return drive from the beach took about one hour. We talked openly about her experience. She explained some of her journal notes. I asked her to elaborate because I was cautious about “dispossessing” Solana of her “own” experience and “naming” things for her, a problem I have with the tendency in research to (over) “textualize” selves (Payne, 2005). We talked briefly about where the artistic and scientific experiences were similar and what she thought she had learned from their differences that might help her Theories of Knowledge essay. The shorter Theories of Knowledge essay of 1600 words was completed over three afternoons on two weekends and did not use many books, which was noted by her teacher when reviewing her penultimate draft. For assessment purposes, Solana’s “artistic” sketches and “field note” reflections had to be “translated” to the textual form expected literally of her. Solana thought she was unable to submit her sketches of the beach, crashing waves, and cloud formations but explained that writing words would “... help other people understand her feelings but that the sketches mean a great deal more to me” (see also, Alerby, 2000).

Methodological and Representational Asides

Here, to (partially) represent Solana’s scientific and artistic “sensibilities,” I employ a two-tiered strategy. As indicated in Payne (2005), a major interest of my postphenomenological approach is the co-production of the situated meanings of experience. Aspects of intersubjectivity, intercorporeality, and empathic, embodied experiences have been outlined above and focussed primarily on our “on-site” interactions.

Phenomenological enquiries into the *lived experience* (of the beach) lean to reasoned interpretations of subjectivity, give voice to that which is situated in circumstance, and are descriptive. More detailed examples and “outcomes” of this process follow below. Solana chose the illustrations that appear. As a textual “finding” suitable for publication, in constructing the following pages, I aim to move the reader toward Solana’s experiences and invoke some response in the reader to Solana’s sense of experience, perceptions, and sensibilities. This “re”-presentation can only be partial, and strategic from the researcher’s perspective. Later, I offer more “theoretically” developed accounts of Solana’s *experience lived*. They are my broader interpretations of her agency where the subjectivity of her voice is tempered (“objectively” by me) in trying to portray some of the broader historical, material, social, cultural and ecological contexts of her situated and circumstantial agency. Beyond the earlier limited account of the teacher and International Baccalaureate Diploma Programme contexts, I aim to “open” some of the broader considerations in which we found ourselves.

What I, or Solana, cannot account for very satisfactorily here, given the importance I attach to them elsewhere (Payne, 2003), are a number of socio-ontological considerations. They include the enigmatic nature of time, the mobility and fluidity of places and spaces, the compression and extension of time/place/space, and the intensification (and individualization) of a technics of human experience and “nature.” For example, Solana’s experience of time and the beach “place” and ability to express them were “bound” by the “lived” contradiction of “stop watch time” and “wave time.” See also Figure 1b (below) where Solana’s sketch of the beach couldn’t very well “represent” her experience of the continuities of time and place.

Solana’s Lived Experience

An attempt, therefore, is made here to sequentially re-present various sensory, perceptual, conceptual, and rationalized “layers” of Solana’s experiences and judgements about them. The layers reflect a continuum of sensibilities ranging from (almost) an (immediate) prediscursive consciousness to a (delayed) numerical and linguistic “literacy.”

Because of the “direct” nature of Solana’s visits to the beach, extracts from her “at hand” journal are sampled to highlight her “coming to know” the beach qualities and characteristics. For example, following the artistic experience she spoke of:

- *Hearing waves*: constant echoes, a wave-orchestra in unison from left to right, like a man and woman speaking rapidly, communicative.
- *Smelling the air*: salty, cleansing, fresh, pungent, exotic, icy.

Other examples of *metaphors* (basic, space-time, flow-time, movement, and anthropomorphizing) and *terms/expressions* (abstract, technical, literal, analytic, disciplined, functional) used by Solana to characterize or describe the respective experiences, in general, were:

deepen, widen, gather, careful, overcome, enhance, unique, really,

window-into-another-world, a sanctuary showing off, attention seeking, glass/relaxed-rough/wild, roars and whispers, whiplash, perfumed, marshmallow, stress-ball, silky, cheeky, gunshot

systematic, test, collect, measure investigate, classify, treat, accurate, factual, procedures, objects, rational regulations, instruments, standards, reality

surreal, peaceful, eerie, soothing essential, therapeutic, basic, powerful, emotional, nostalgic, unpredictable, deceptive

Figure 1a and b are examples of Solana’s intentional “on-site” scientific and artistic representations of “data collected” and “impressions expressed” about the beach, its characteristics, qualities or conditions. Altogether, she prepared twelve tables or figures for the final Extended Essay report and completed six pencil sketches.

Pt. Phillip Heads Windy/sunny/cloudy Day: 20C. 4.04pm	Pt. Lonsdale Beack beach 3.45pm	Pt. Lonsdale front beach 4.15pm pm	Portarlington 4.45pm	Notes
Gradient of Beach 0m 20m 40m	6 8 11	3 5 6	8 0 1	Measured by a clinometer
Wind Direction Speed	WSW 39km/h	SSE 35km/h	SSE 31 km/h	Data from Bureau of Meteorology
Wave Frequency Height	White tops Average = 9 1.5-2.0m	Average = 5.6 0.5m	Average = 23.3 0.1m	
Sediment collection 0m 20m 40m	Very fine sand Fine sand Fine sand	Very fine sand Very fine sand Very fine sand	Very coarse sand Coarse sand Fine silt	
Vegetation	Vegetation at 40m mark (on sand dunes) consisting of dry thick salt pruned vegetation. A lot of seaweed deposited in large clumps along beach.	Large amounts of seaweed was scattered on all areas of the beach. At 40m mark dense thick shrub.	Rotten seaweed was scattered along the beach particularly at the 20m mark where the gradient becomes 0°.	

Figure 1a. A Sample “Data Collection” Table.



Figure 1b. A Sample “Impression Expressed” Pencil Sketch.

Immediately following the artistic experience, Solana noted the strengths and weaknesses and advantages and disadvantages of “knowing the beach” artistically in relation to the scientific experience. Her entries are summarized by me to identify key subjective judgements:

<p style="text-align: center;"><i>Strengths</i></p> <p><i>Can perceive things that otherwise might not have been noticed.</i></p> <p><i>Free to allow the mind to wander.</i></p> <p><i>No expectations of what I produce.</i></p> <p><i>I am in charge.</i></p>	<p style="text-align: center;">Weaknesses</p> <p>Not refined and tangents can be taken.</p> <p>No sense of certainty.</p> <p>Knowledge may be irrelevant.</p>
<p style="text-align: center;"><i>Advantages</i></p> <p><i>Allows different perspectives that don't adhere to any particular rule/theory.</i></p> <p><i>Allows bigger picture.</i></p>	<p style="text-align: center;">Disadvantages</p> <p>Very broad.</p> <p>Unable to perceive everything.</p> <p>Difficult to depict things in an understandable fashion.</p> <p>Need prompts and expectations.</p>

The following extracts from Solana’s final Theories of Knowledge essay highlight some of the differences and, therefore, “stronger” rational judgements she made about the scientific and artistic ways of knowing the beach:

... as an artist, I gained a wider perspective of the beach and appreciated it in greater detail unlike the extended essay. I didn’t need to concentrate on one

particular area like beach gradient. I was able to feel all aspects of the beach—the changing colours of the water, the moods created by the beach through the silkiness of water and the flexibility of the seaweed. The experience was an aesthetic one that is hard to describe in words, or numbers like I did in the extended essay Artists tend to use a variety of senses to creatively respond to and interpret situations in an aesthetic way ...

There were several strengths in being a beach scientist that were very different to the way I perceived it as an artist I sought factual knowledge about different parts of it ... used reason, following well known procedures ... to explain findings, and systematically building up knowledge according to conventional standards of other researchers A scientist's perception could never depend on intuition (because) intuition could lead to inaccurate or error prone results

Perception is, therefore, used in different ways; but either artistic or scientific ways allow an individual to interpret a situation or object of interest in his or her own unique way.

... practically speaking, by doing this essay and referring back to my extended essay I was able to distinguish the differences As an artist, I was more creative, the experience was therapeutic and the beach was perceived in its entirety. As a scientist, I gained deep knowledge about specific areas. Art doesn't have to adhere to any particular standards but its subjective version of reality or its truth can be challenged. Artistic perception proves an obstacle for scientists as they must adhere to well established methods and procedures if their objective and factual version of reality and truth is to be defended.

Solana's Experience Lived

The 45 minute science experiences in warm but contrasting summer conditions and the artistic experience of about three hours in cool autumn conditions were fleeting episodes only in the life story Solana might eventually tell about her environmental interests, understandings, and commitments. Nonetheless, that Solana's International Baccalaureate Diploma Programme provided a relatively extended opportunity to "study" and "know" the beach and provided an important opportunity for her to "get to know" the beach environment.

The scientific and artistic experiences were enjoyable, fulfilling, and satisfying for both of us, but for different reasons according to our respective tasks. There is evidence Solana learned a great deal about the beach and about these two ways of knowing by *doing* then reflecting upon and "theorizing" them subjectively, with some "book" and teacher support. She demonstrated the scientific ability to observe and measure a range of beach, wave, and wind features. She was able to offer scientifically based conclusions about the relative "energy level" of the beaches according to text book theory. Her experience was planned, ordered, disciplined, and task driven. There was little spontaneity in her approach to and conduct of the experience; her bodily

movements were generally static according to each data collection task while “her” environmental focus was consistently limited and mediated by the tools required for each measurement (stop watch, compass, home made clinometer, maps, newspaper forecasts). Solana was aware of the “technical” manner of her scientific experience. She was comfortable, confident, and reassured in “being” a scientist. Her language-use was consistent with and therefore determined by the discourse of science and revealed numerous positivist assumptions about knowledge, truth, and method.

Artistically and aesthetically, perhaps politically, Solana appreciated the freedom and ownership “enabled” by the three hour experience. She expressed reservations about the lack of facts, structure, and expectations. She was frustrated by her lack of artistic ability and what it might not communicate even if she gained considerable personal meaning about the beach environment from sketching variations of it (Alerby, 2000). Her beach “presence” became more playful, spontaneous, and spatially diverse as time proceeded. She acknowledged and appreciated the “wholeness” of the experience and how she came to sense, perceive, and know many aspects of the environment, including the seaweed, dunes, rock pools, cloud formations, power of the water, and presence of litter, none of which had been cued in the scientific experience. Her rich use of language but acknowledgement of its limits, and ideas about representing emotional and intuitive responses in a sketch, were consistent with what circulates in “aesthetic” type discourses.

Some months later, in reflecting upon the scientific and artistic experiences she maintained a cautious ambivalence about their relative merits. She declared a declining interest in studying physical geography for reasons I am unaware of but might have been linked with the pressure of school and the International Baccalaureate Diploma Programme final examination requirements. She had not done any further artwork, but was showing an interest in photography (of landscapes) and was stopping on her cross country training runs (next to a river) to enjoy some contemplative time. Many months later, Solana and I were disappointed with the “good” result she received for both the Theories of Knowledge and Extended Essays.

Although much more could be written about Solana’s experiences of *doing* and *knowing* the beach and the contexts in which they occurred, there is a sufficient indication of how the scientific and artistic ways of *doing* the beach “entered” into, “created,” or “consolidated” certain sensibilities about the beach, environment, ecology, place, and her self. Undoubtedly, such “knowledge” and “learning” is episodic only and open to other influences. Amongst many findings that can tentatively be offered, particularly by me at this point, a controversial one is worth noting. The intensity, poignancy, and power of her beach experiences “faded” over time as her subjective experiences were rationalized, compared, and converted to texts. This discursive process of abstraction (of knowing and knowledge) certainly contributed to her intellectual development and ability to pass the Theories of Knowledge

subject but, arguably, permitted Solana to “hold to” a fairly neutral position about the relative values of the scientific and artistic ways of knowing.

There is no attempt here to establish a definitive cause and effect relationship between Solana’s educational requirements and any positive (or negative) environmental “outcomes.” Nor is there an attempt to judge one way of learning as superior to the other. Nor has a “fully blown” critique been offered about the situation in which Solana de/reconstructed the academic expectations placed upon her. Some suggestions are offered in the conclusion.

The emphasis here on describing a learner’s perspectives and processes of developing *sensibilities* provides a different vantage point from which the evidence about learners and their learning can be considered in relation to conventional accounts of learning “theory” and measures of “outcomes.” This study, however, seeks to extend that vantage point by investigating the actual experiences of the “subject” *being* “studied” where the subjects are, at the same time, the researched (Solana, in this instance her “embodied” content of the two ways of doing and knowing the beach) and the researcher (me, pursuing a level of *commensurability* in the research posture I experientially pursued).

The Pedagogy of Research: Implications for Curriculum and Pedagogical Development

The conventional view of qualitative inquiry is that its case studied “findings” cannot or should not be generalized. To be sure, Solana’s sensibilities about the beach are specific to both the particular place and the academic requirements expected of her. Furthermore, this study is methodologically individualistic and demands additional studies of other learners and a wider range of learning situations and contexts. There are, however, some general lessons to be learned from this evidential study of the *perspectives* and *sensibilities* of a learner and the *commensurability* pursued by researcher in telling a story about that learner.

First, for learners and teachers the study affirms the value of experiential and interdisciplinary learning in (environmental) education. Both of us learned a lot in “doing” our respective quests at the beach. Second, for schools, the subject “Theories of Knowledge” provided an important opportunity for students/learners to “come to know” about “ways of knowing.” Dillon (2003) is correct in asking researchers to reveal the underlying “theories of learning” evidenced in their inquiries. I wanted to express some of the richness, presences, absences, and otherness of Solana’s experience, something educational researchers are constantly grappling with. In this particular instance, Solana created a *way of doing* and experiencing “theory” in a manner consistent with the educational call for learners to appreciate/understand different “ways of knowing.” Third, for curriculum developers and teachers of “disciplines,”

particularly in higher education and secondary school settings, it is important to “invite” students into different ways of doing/knowing, some aiming to “ground” those conceptual, symbolic, and highly abstract topics that many students too often “fail” to grasp. Geography, environmental science, physical education, and outdoor education teachers can add another hour to a field trip to “allow” students to sketch, sing, mime, or dramatize the topic being studied. Mathematics, Physics, Chemistry, and Biology teachers can move the laboratory to the beach, tree in the school ground, pond in the local park, or even breakfast cereal box that learners have eaten from that morning. Art teachers might invite the environmental science teacher to explain a river’s morphology. And so on. The belated recognition by some mathematics and science teachers of the value of constructivist pedagogies is a small step but needs to be extended. Also, assessment strategies should be “flexible” and “inviting” of epistemological difference rather than “straightjacket” the learner and his/her learning. The challenge remains for teachers to create “lived” experiential engagements and embodied connections with that subject matter which is to be “known.”

Fourth, lessons for the researcher? Postphenomenological research of the type used here might help frame up other “situated” studies of the “lived” *processes* of learners and learning. Researchers (and reflective teachers) might consider the *commensurability* pursued in this study where Solana’s quest for *coherence* in experiencing and knowing about different ways of knowing (the beach) had to be matched by my (or the reflective teacher’s) search for congruence between the purposes, processes, and outcomes of the research (and teaching) in knowing the subject. The post-phenomenological orientation used here “grounded” its focus and content empathetically in Solana’s embodied experiences and sensibilities. But numerous challenges persist is representing and legitimizing “knowledge.” Certainly, reflections on what appears above leads me to conclude that some of Solana’s and my “absences” and “otherness” (incorporating changing perspectives, emerging sensibilities about the beach and its conditions, the “hold” of learning theories and methodological dispositions, to name a few) have been revealed. Clearly, more needs to be done.

Notes

- ¹ The “critical” (ethico-political) paradigm was not really available to the circumstances in which we found ourselves.
- ² As her father, we have often spent extended periods of time in the outdoors where exploration of the “natural,” social, and cultural environments, in Australia and overseas, have been a major shared interest.
- ³ If so, environmental education teachers might concern themselves with the micro processes and practices of how “ecological sensibilities,” “embodied

knowing,” “ecological subjectivities,” and “socio-environmental literacy” are fostered while researchers develop ecological orientations to their work (for example, Pivnick, 2003) in accordance with theoretical/philosophical formulations of, for example, “education for being for the environment” (Payne, 1999).

- 4 Where, more formally than that outlined above in relation to a social ontology and the structuration of experience/agency, the term “sensibility” is used, following the works on perception by Merleau-Ponty (1962), its “affordances” (Gibson, 1986), its mediations including linguistic/textual (Abram, 1996) and technological (Ihde, 1990), to signal the embodied, corporeal, sensuous, intersubjective, and socially constructed nature of the experiencing self in his/her positioning, circumstance, and context. Sensibility requires further elaboration in terms of social structures (Giddens, 1984), the latter of which cannot be explained here apart from brief mention about the learner’s academic and school contexts.

Acknowledgements

Alan Reid and two anonymous reviewers are thanked for their contributions in helping me clarify certain ideas outlined above.

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References

- Abram, D. (1996). *The spell of the sensuous*. New York: Vintage Books.
- Alerby, E. (2000). A way of visualizing children’s and young people’s thoughts about the environment: A study of drawings. *Environmental Education Research*, 6(3), 205-222.
- Cambridge, J. & Thompson, J. (2004). Internationalism and globalization as contexts for international education. *Compare*, 34(2), 157-171.
- Dillon, J. (2003). On learners and learning in environmental education: Missing theories, ignored communities. *Environmental Education Research*, 9(2), 215-226.
- Gibson, J. (1986). *The ecological approach to visual perception*. Hillsdale: Lawrence Erlbaum.
- Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Cambridge: Polity Press.

- Gough, S. (2004). Editorial. *Environmental Education Research*, 10(1), 3-6.
- Hart, P. (2003). Reflections on reviewing educational research: (Re)searching for value in environmental education. *Environmental Education Research*, 9(2), 241-256.
- Hart, P. & Nolan, K. (1999). A critical analysis of research in environmental education. *Studies in Science Education*, 34, 1-69.
- Ihde, D. (1990). *Technology and the lifeworld: From garden to earth*. Bloomington: Indiana University Press.
- Merleau-Ponty, M. (1962). *Phenomenology of perception*. London: Routledge.
- Payne, P. (1999). Postmodern challenges and modern horizons: Education "for being for the environment." *Environmental Education Research*, 5(1), 5-34.
- Payne, P. (2003). Postphenomenological enquiry and living the environmental condition. *Canadian Journal of Environmental Education*, 8, 169-190.
- Payne, P. (2005). Lifeworld and textualism: Reassembling the researcher/ed and "others." *Environmental Education Research*, 11(4), 413-431.
- Pivnick, J. (2003). In search of an ecological approach to research: A mediation on topos. *Canadian Journal of Environmental Education*, 8, 143-154.
- Rickinson, M. (2001). Learners and learning in environmental education: A critical review of the evidence. *Environmental Education Research*, 7(3), 207-320.
- Robottom, I. & Hart, P. (1993). *Research in environmental education*. Geelong: Deakin University Press.
- Sauvé, L. & Berryman, T. (2003). Researchers and research in environmental education: A critical review essay on Mark Rickinson's report on learners and learning. *Environmental Education Research*, 9(2), 167-180.
- Scott, W. (2003). Editorial. *Environmental Education Research*, 9(2), 147-148.
- Weiss, G. & Haber, H.F. (Eds.). (1999). *Perspectives on embodiment: The intersections of nature and culture*. London: Routledge.