REFLECTION

The Spirituality of Fishing: Reflections on assessment

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The context in which I am forming these reflections has had a significant impact on their nature. I have just attended another excellent International Conference on Technology Education Research which is held every two years in Queensland, Australia. After the conference I travelled south along the Australian coast to New South Wales for a beach holiday of swimming and fishing.

While standing on the beach, fishing rod in hand waiting for something exciting to happen at the other end of the line, I unfortunately had too many idle hours to ponder. Some of this pondering included the similarities between fishing and school assessment. At the risk of extending an analogy to its limits, I would like to share some of these ideas.

In the context of the Queensland conference and its theme of Values in Technology Education, I also draw on the spirit of the key note presentation by Steven Petrina: *On Techno-Theology and the Sacred,* to recall the biblical story related to Jesus' appeal to fishermen to become fishers of men, or teachers. With this in mind, here, on the beach fishing, I feel as though my reflections are complete.

Petrina adopted a definition of spirituality to mean "any aspect of humanity's connection to something other than itself. This includes deism (natural revelation), and theism (revealed revelation), yet also expands to include even other human relationships. Spirituality in its broadest sense is the evidence of, or attempt to explain, human transcendence" (2006). Considering this definition, fishing can be a very spiritual experience. The desire to connect with the natural environment, to sense the shifting currents in the wave patterns, to feel the caress of the wind and the pull of the tide, but most of all to connect with a fish is a spiritual experience.

Assessment of success in fishing is very clear – if you have fish you have been successful. This simplicity of outcome belies the complexity of variables that combine to produce the result. The location, type of gear, setting of the rig, type of bait or lure, style of casting, type of fish, how the fish move, what level they swim at, tidal movements, water currents and cloud cover are all relevant variables. When all these factors are at their ideal and integrate together optimally, success is the outcome.

However, there are generally too many variables for them all to be controlled, or to have an absolute knowledge of how they all interact, and yet success is not uncommon. People fish in areas with which they are not familiar and do not understand all the factors, and yet they may be successful. This indicates that knowledge and control over all the relevant variables is not necessary in order to be successful.

The skill of assessing success in fishing has little to do with outcomes – any layperson (non-fisherman) can judge the success of having a few fish in the bag. Success comes from skill in assessing the inputs: making judgements about all the variables based on a range of sources of knowledge: personal and others experiences, TV lifestyle fishing shows, books, magazines and internet research.

Likewise, assessment in Technology Education immediately implies notions of outcomes. The outcomes may be cognitive or manipulative, procedural or conceptual, formative or summative, but still outcomes. There are clear and explicable reasons for this – outcomes assessment is the public and high stakes end of Technology Education, both at an individual and school level.

Less attention is paid to the assessment of the input variables. As with fishing, they are manifold and changeable, and there really are too many to cognitively process them all at any one time. Specific variables are focused on at different times, until eventually a repertoire of skills is developed which to some extent become automatic responses to given situations. In a broad range of contexts that are formed by set combinations of variables, the teacher comes to know what works, and to this stimulus a response, determined by experience, becomes almost automatic. Compared to research about the assessment of outcomes in Technology Education, the research about the assessment of inputs, and teacher's cognitive processing of those input variables, is inadequate.

The more a fisherperson practices, the better they become. If they were to practice for 5-6 hours each day, five days a week, 40 weeks a year for a few years then they would become very good, in fact they would be an expert. They would be able to make judgements about the combinations of variables they are confronted with and take actions that result in successful outcomes. People would naturally respect them for the knowledge they demonstrate and the many successful experiences they have.

Technology teachers must be treated more as experts who know when they are successful, as they do. This is not to deny the need for evidence, but the evidence is partly the outcome of trust. Teachers must also have confidence in themselves – we know when students are developing as they should, and achieving in that big picture kind of way. How we formally assess may be another thing altogether, and in some sense is less important.

Fishing at a fish farm is a way to minimize the variety of variables and so increase the chances of success. For novice fishers, such as children, it provides a way of achieving some success without having to absorb all the knowledge required to deal with the naturally occurring elements in an un-contrived environment. The skills a fisher develops through fishing at a farm have limited transferability to a natural environment because it provides no opportunity to simultaneously deal with a broad range of variables.

There is no comparison between the quality of life for the fish in the farm and those in the natural environment. While the fewer dangers to be encountered when developing to maturity in a farm mean that the early rate of survival is high, conversely, an early demise is predetermined and so there is no chance of a full and rich life through maturity.

The structure of a technology classroom to resemble fish farm characteristics may enhance the chances of student success according to some assessment criteria. The elimination of variables that may distract from specific goals measured by the assessment will enable a focus on only those assessment goals. The elimination of any possibilities of making mistakes, a focus on quality product outcomes and standardization of portfolios through proformas will create the illusion of successful teaching.

The students will also seem to be successful, but their quality of (school) life will be poor and the skills developed in such a contrived environment will not be transferable. I will not extend the analogy to predict an early and inevitable demise!

Assessment of outcomes in fishing is a very tangible exercise because success is obvious. Desirable outcomes in Technology Education are less tangible, and assessment is needed to indicate both success and failure, or in outcomes based terms, the level of success. There is really no failure, just an absence of success, or lack of progress. (If only that were the case with fishing, where the absence of success feels a lot like failure!)

The tendency is common in Technology Education for assessment to determine the goals of education, but this of course is problematic. If this were the case in fishing, then the assessment criteria could be: fish at high tide in the Big Hole, use prawns for bait on a ledger rig late in the day when the sun is low. If you satisfy all these criteria then you have been successful, regardless of whether you actually catch any fish or not. Despite this being obviously silly, it is not uncommon in Technology Education. There is a big picture, an end goal that should drive the educational endeavour, and the assessment criteria must be made to match.

Which brings me to the spiritual dimension of fishing. As I travelled down the New South Wales coast on my surfing and fishing holiday, I noticed a report on a court case in which a number of fishermen were prosecuted by the NSW Fisheries Department for poaching. The eleven accused admitted the allegations against them but argued they were exercising their religious rights. They said that'…they are practising the Aboriginal religion and their religious beliefs dictate the manner in which they do these things'. Their barrister added: "These people believe they have a connection to the land, a connection to the water and anything they do in relation to the taking of produce of the land or water is inherently connected with their religion" (Murphy, 2004). I agreed with the accused, the court case confirmed my personal experience of the spirituality of fishing.

Fish are important to aboriginal people in their daily life, not only as a source of food for basic nutrition, but also in spiritual, social, economic and educational contexts. Spiritual links with specific fish species from birth (totem species) are a significant part of aboriginal culture. The activity of fishing is one medium through which the spirit of the person and the spirit of the environment come together.

In his presentation at the Technology Education conference, Petrina (2006) proposed that technology embodies and generates five sets of values – the existential-spiritual values of technology are as important to recognize as ecological-natural, ethical-personal, socio-political and technical-empirical values. He stated that

> *"None of these interdependent values can be ignored in education lest we offer a compromised curriculum and literacy of technology. Too often in design and technology education we emphasize and prioritize technical-empirical, or rational values", we address to some extent ecological-natural, ethical-personal and socio-political values, but rarely consider the existential-spiritual dimension. "In effect, we are out of balance" (p.2).*

All the Dimensions of Technology are imperative for educational success. Some are susceptible to ease of assessment, others less so. One struggles to imagine examination authorities funding the development of techniques to assess the existential-spiritual aspects of technology. However, the difficulty, or maybe even the impossibility of assessing the existential-spiritual dimensions of technology render them no less important. Best practice is not defined by high assessments.

Likewise, the spirituality of fishing is not determined by assessable outcomes alone – it is the totality of the experience, the blending of all the elements in the environment. Again, teachers know when they are successful in all the Dimensions, and we must trust our feelings on this and ensure that formal assessments do not deliver a picture different from how we feel. We need to trust our spirit – the spirituality of teaching! It's not a dimension of the curriculum that we teach, it is how we feel about the important aspects of our students' development.

Despite the relative novelty of Technology Education and the consequent research deficiencies in a broad range of areas, researchers continue to push the boundaries into new and developing areas. For example, products and emotion (Spendlove, 2006), how we should live (Keirl, 2006), the environment (Elshof, 2006), design for experience (Williams & Wellbourne-Wood, 2006), values (Pavlova, 2006), technicity (Doyle, 2004), wicked problems (Coyne, 2005), democracy (Baynes, 2005) and rights (Petrina, Volk and Kim, 2004).

It is a sign of a vibrant, dynamic and enduring profession that apart from continuing research on the fundamentals of Technology Education, concurrent research is being conducted on innovative, futuristic and pioneering aspects of Technology Education. Thinking and activity about assessment must maintain the same future dynamism. There are trends in this direction, for example in creativity (Stables, 2006), innovation (Bain, 2005) and electronic assessment (Kimbell, 2006). Innovation in assessment research must keep pace with the innovative dynamism of Technology Education research generally.

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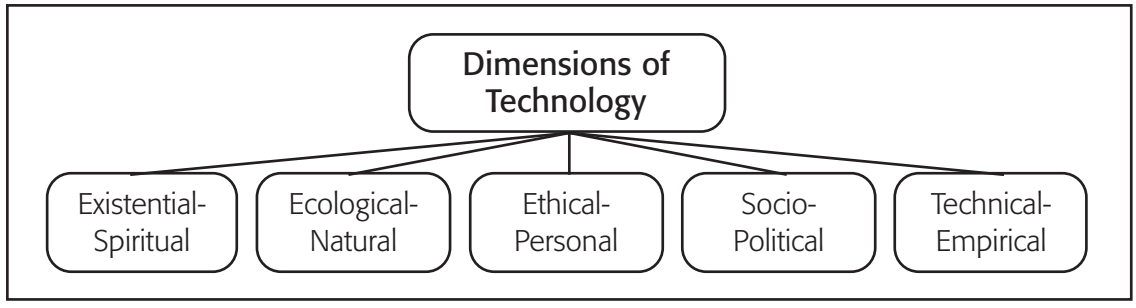

Figure 1. Dimensions of Technology (Petrina, 2006)

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