

Curriculum design at a crossroads: A comparative approach to re-evaluating knowledge frameworks

David Cole and Lawrence Burke

Introduction

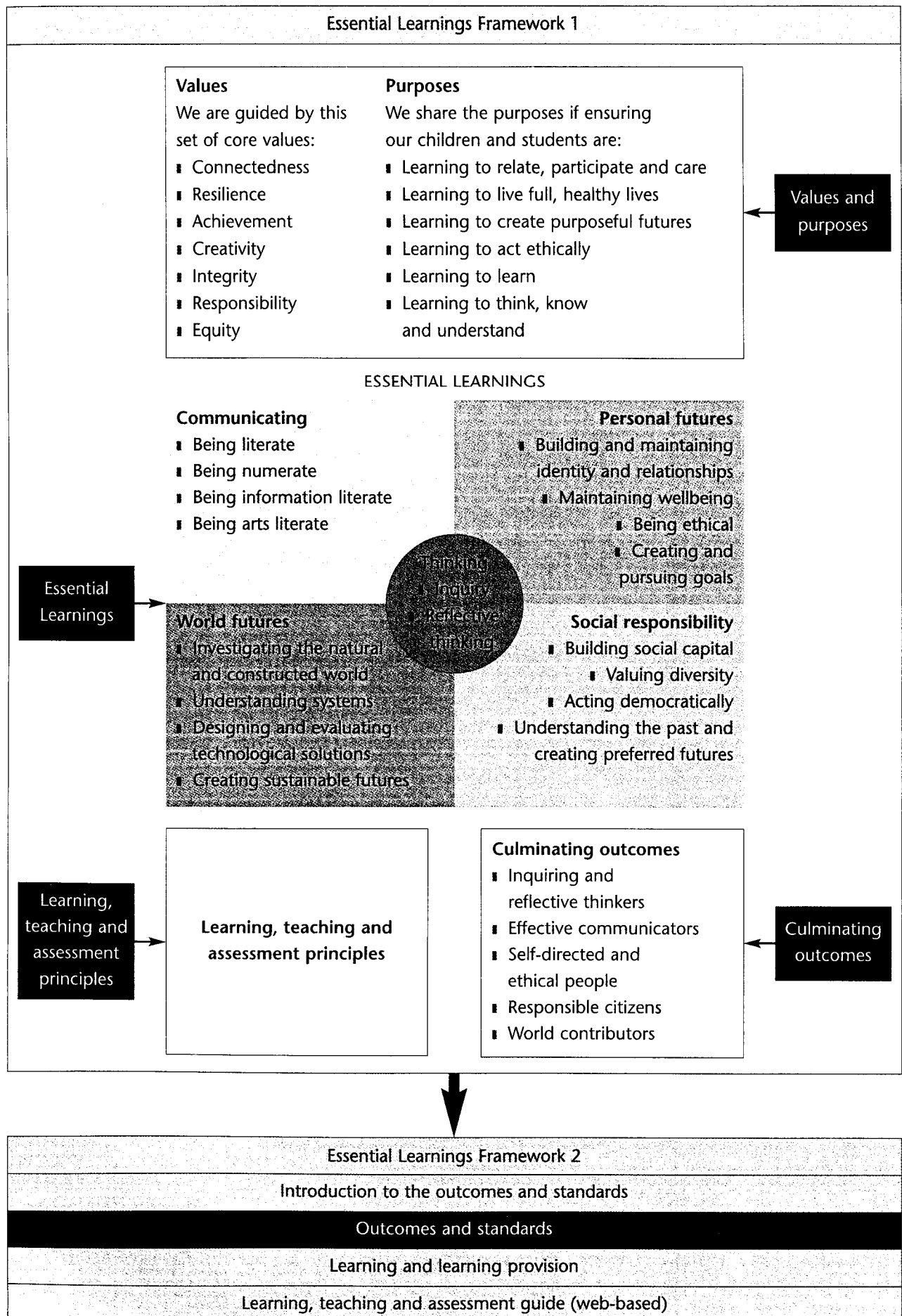
THE NEED FOR CURRICULUM REFORM is often galvanised through recourse to changes in the world of work and society; where new technologies, global movement and economic agendas perennially shift expectations for students and teachers (Stoer & Magalhaes, 2004). It is against this backdrop of globalisation that the Tasmanian Department of Education has initiated curriculum change, based on a model of learning that centralises thinking in the curriculum (Eisner, 1991). This thinking curriculum has resulted from extensive consultation with interested stakeholders, and the publication of many policy documents (Watt, 2005). This curriculum design will be compared to the framework that the International Baccalaureate Organisation (IBO) has proposed for their Middle Years Programme. This programme is becoming increasingly well known in Australia, as educational providers respond to the globalisation of education (Whitehead, 2005) by using a tried and tested international curriculum. The central element of this programme is the personal project, through which students demonstrate their performance in an area of choice and that demands initiative, engagement and a thorough critical evaluation of the product.

This analysis of curriculum frameworks includes asking difficult questions about the implementation of the frameworks, and the realities of classroom interactions that could mediate curriculum design through negative feedback (Kreisberg, 1992). It is worthwhile to note that the Middle Years Programme (MYP) is a 'sandwich' course between the Primary Years Programme (PYP), and the International Baccalaureate Diploma. As such, it serves to lead students from the primary years onto rigorous pre-university training that the IBO have made sure is recognised internationally by leading universities (IBO, 2006). In contrast, the Department of Education in Tasmania are currently going through the process of designing and implementing a specific set of standards in order to assess students following their Essential Learnings curriculum.

1. The Essential Learnings (ELs)

If we examine the ELs diagram (Figure 1), we may perceive that the essential learning of 'thinking' is enclosed by the four areas of: Communicating, Personal futures, World futures and Social

Figure 1. The Essential Learnings framework 1 (DOE Tasmania, 2002)



responsibility. As such, the central thinking requirement of this knowledge framework happens when the students and teachers criss-cross the four essential learning areas. This gives rise to the potential for interdisciplinary work across traditional subject boundaries, which depends upon the teachers and the students constructing a web between the four essential learning areas.

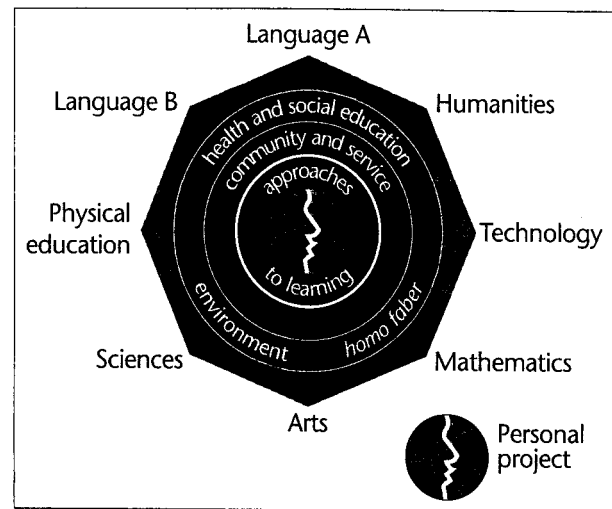
It could be stated that thinking only happens if there is time and space to think (Dreher, 1990). One of the fundamental challenges with the implementation of a thinking curriculum framework is therefore to remove the remnants of curriculum content that may prevent thinking across the curriculum areas. This process of 'clearing away' knowledge structures will impinge upon teaching styles and content values that are held by teachers who have been practising their subjects before the new system was introduced. Teachers may desist from the central thinking element if it throws up the possibility of reconstructing their knowledge area with respect to a perceived lack of subject integrity: for example, the teaching of industrial design might be compromised by understanding the broad principles of environmental impact (Lang, 2005).

Individual performances in the essential learning areas such as 'maintaining wellbeing' or 'acting democratically' are difficult to assess. The central strand of 'thinking' is easier to judge if we take a philosophical approach to thinking and assess the logical connections and relational analyses that students are able to achieve. Yet given that the main consumers of the ELs assessment will be concerned parents and interested employers, this knowledge framework may ultimately be determined by how *they* understand the purpose and value of the ELs assessment results. This process of clarification should involve parents, teachers and all stakeholders in a dialogue about the notion and purpose of assessment (Resnick & Resnick, 1989) in order to make sure that the ELs assessment standards are widely recognised.

2. The Middle Years Programme (MYP)

The second framework that we shall examine is presented by the IBO. It retains eight curriculum subjects, and makes connections between them through: health and social education, environment, *homo faber*, community and service, approaches to learning and the personal project (see Figure 2). There is no recognition of a separate 'essential learning' of

Figure 2. The Middle Years Programme (IBO, 2002)



thinking as we find in the Tasmanian curriculum framework. This places greater emphasis on the subject teacher to make time in the curriculum schedule to explore connections to other subject areas through, for example, health and social education if the chemistry teacher is explaining the production of pharmaceutical products. Therefore, this approach to knowledge relies heavily on the teacher's conceptual abilities and time organisation in order to positively explore and develop holistic knowledge and evoke the principles of social constructivism (Vygotsky, 1978) between subject areas.

This approach to knowledge construction empowers the subject teachers and preserves their knowledge zones. They choose the connections that are made from their areas. These teachers are not asked to change the name of their subjects, in this case from chemistry to 'investigating the natural world' as would happen in the ELs. It could be said that the integrity of the knowledge area will be securely protected, and it is likely that the teacher will explore connections between knowledge areas *after* teaching their established content (Brown, McEvoy & Bishop, 1991).

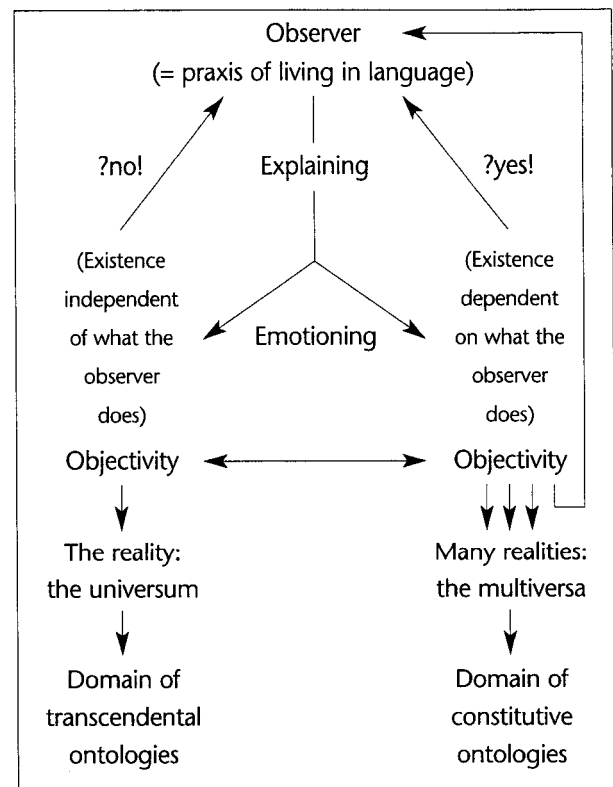
It should be noted that the MYP is an international knowledge framework, designed to be used in fee-paying, international schools; although there is IBO program growth in national educational systems throughout the world. International schools expect high standards, strong academic results and a universally recognised curriculum (IBO, 2006) which guarantees university entrance. In consequence, curriculum innovation per se may be frowned upon, especially if it leads to the valuing of subjective or negotiated knowledge from bottom-up student perspectives.

3. The comparative analysis terms of reference

This comparative analysis requires terms of reference in order to examine the differences and similarities that arise between the two knowledge frameworks. The first aspect of curriculum design to be noted is that knowledge frameworks create realities (Short & Burke, 1991). These realities are pertinent to the ways in which teachers and pupils will be influenced when they are teaching in the classroom; due to the connection between knowledge and power and the discourses that arise due to these realities (Foucault, 1980). Furthermore, the realities that are created through the application of knowledge frameworks define pathways through which the growth of individuals and groups be understood. For example, the teaching of history could potentially create discourses of value and hierarchy that refer back to a culturally specific point of view; and in so doing emphasise the reality of imperialism and colonialism. Alternately, the teaching of history can create discourses that emphasise relative realities between cultures described equally; whereby the cultures may be analysed and compared to empower students and teachers to use discourses that do not strengthen existing hierarchical perspectives (Dale, 1977).

It is with this point in mind that we shall analyse the ELs and MYP knowledge frameworks. We will introduce the work of Humberto Maturana (1988) see Figure 3; because his ideas give us a context through which the terms of reference of the comparative analysis may be understood. These terms of reference produce dichotomies, which help us to separate and analyse the complex realities of the knowledge frameworks. One of the many fascinating aspects of Maturana's work that is directly relevant to curriculum design is that he deals with reality creation through a social lens. The contention of this paper, and the use of Maturana (1988) for our terms of reference; is that the changes in being of the individuals present in the knowledge based realities represent the effects of the curriculum design. According to Maturana (Figure 3), the creation of realities through the application of knowledge frameworks may take two pathways; one suggesting that reality creation is dependent on the observer and the other not. He has set up a thought experiment that we may use to analyse the two curriculum frameworks. If an observer explains

Figure 3. Maturana's ontological diagram



As it appears in Maturana, H. (1988a). Reality: The search for objectivity or the quest for a compelling argument. *Irish Journal of Psychology*, 9(1), pp. 25-82.

and emotes that the existence they find themselves in is independent of what they do; this will lead to a transcendental or ultimate universe. If the observer explains and emotes that the existence that they find themselves in is dependent on what they do; this will lead to many realities or the multiversa (Maturana, 1988). Furthermore, the observer may enter into a questioning mode about the existence of reality, which is represented by the feedback loops from objectivity above.

Maturana's ontological diagram is a thought experiment that routes the 'emotioning' and explaining of the observer in terms of how they create reality. If we apply it to our comparative analysis and understanding of knowledge frameworks; it bridges the gap between the abstract vessels for containing knowledge (Figures 1 & 2), and the realities of the subjects living through these guides to knowledge. At this point it is clear that one could directly associate constructivism (Marshall, 1992) with the ELs framework, because students have to 'think the universe' in terms of making connections between the essential learning areas as defined in Figure 1. In Maturana's terms this is cultural and collective autopoiesis (Varela, Maturana & Uribe,

1974), or the reproduction of the social body. Yet an inherent paradox in Maturana's system, and by degrees constructivism; is highlighted by applying this possibility to an individual in this social body. If, for example, we take a student working to create the universe by using the ELs curriculum framework as a guide; one could say that the universe that this student could create is never wholly dependent on his or her reproduction of it. There will necessarily be much that would lie outside of their experience or research. In this case, the positive vindication of individual constructivism for all students is likely to produce fragmentary and incoherent results that are difficult to assimilate into a unified picture of the universe and could lead to radical subjectivism. On these grounds, the MYP addresses the paradox in Maturana's (1988) ontological system as represented by Figure 3, and educational constructivism; as the MYP student will produce a reality based upon a personal project that is a scaffolded through an overlay of eight knowledge areas run by specialists.

Transcendence

Maturana (1988) suggests that the transcendental pathway comes about due to thinking that the universe is independent of our explanations and emotional proclivities. If we apply this ontological pathway to the two knowledge frameworks, an interesting divergence may be noted. The ELs rejects transcendence in that it is designed to think through connections between the individual and the group, the natural and the man-made, the spiritual and the worldly. This activity makes it unlikely that knowledge will be lodged in the mind as immutable (Dewey, 1933), as long as the thinker of that knowledge demonstrates emergent characteristics in their knowledge construction (Brown & Duguid, 2000). There is, however, the possibility that transcendental thought processes could seep into the ELs through individualism; and in particular, teachers or students making subjective choices that consciously or unconsciously reject the thinking processes between essential learning areas.

Contrariwise, the MYP does leave a space open for transcendental thought. The holistic knowledge aspects of health and social education, community and service, environment, *homo faber* and approaches to learning are predominantly taught through the eight curriculum areas. This arrangement requires that the subject teachers

implant connective elements in their knowledge specialities. As such the knowledge that is taught in the subject areas is prioritised as potentially immutable (Huxley, 1944). This immutability takes as given the moral aspects of the curriculum, and indeed integrates them into what Alec Peterson (1987) has termed as, "a commitment to generate an autonomously accepted set of moral principles and act upon them", (p. 34). These principles are set into place through a holistic approach to knowledge that tends to be divided from the construction of realities by the students; as this holistic knowledge depends upon connective devices in academic subject areas and the teachers that deliver these areas of knowledge. Meanwhile, and quite apart from this activity, the students will share social and cultural resources that create perspectives about the world according to their particular drives and desires (Nietzsche, 1990).

Immanence

The second pathway and type of reality creation that we may draw out from Maturana's dichotomising (1988) ontology is immanent. This is shown in Figure 3 as indicating constitutive ontologies or the *multiversa*. It could be said that 'constitutive being' happens in all schools as students form their own societies with particular outlooks, values and social structures. This immanence is recognised in the MYP through the holistic elements of health and social education, environment, *homo faber* and community and service. Yet recognition does not constitute immanence. Immanence would be achieved through the MYP if the holistic knowledge elements in its construction join together to make a "plane of immanence" (Deleuze & Guattari, 1987, p. 134) between the eight curriculum areas. However, the holistic thinking parts of the MYP are dependent on rigorous curriculum definition and implementation in teaching and learning. If the MYP is to be immanent, holistic knowledge would have to come first, and act as a scaffold upon which teachers and students overlay curriculum areas such as mathematics or language study.

The ELs does prioritise the immanent pathway to create realities. The thinking strand at its heart should not augment individualism or a disconnection with exterior reality, but serves to thread the four essential learning areas through the life patterns of those involved with the process (Bower, 2005). According to this plan, students and teachers

should become weavers of knowledge, working together and dispensing with staid transmission and reception forms of communication. This is a joyous and celebratory notion of curriculum, and one that is dependent on a "middle place between 'interior isolation', in which the mind follows the course of its own idiosyncratic associational paths, and the 'total transparency' of the rational order", (Bertrand, 1983, p. 104). The immanence of the knowledge forms that students and teachers use should simultaneously allow them to create their own worlds and reinforce the social and community aspects of living and learning together.

4. The enactment of the terms of reference

The dichotomous immanent and transcendental pathways that we get from applying Maturana's ontology to the ELs and MYP; have been historically dealt with through different approaches to schooling that highlight the structural aspects of teaching and learning and their relationship with curriculum design. For example, curricula such as those taught in Waldorf and Steiner schools (Iannone & Obenauf, 1999) have consciously incorporated different student developmental pathways and have strived for a "oneness with the universe while experiencing joy, happiness, high mindedness, and a willingness to take risks and to be challenged by the unknown", (Bertrand, 1995, p. 1).

This approach to developmental psychology from a social perspective acts as a backdrop to the curriculum that is taught in these schools. It crosses the divide between transcendental and immanent elements of knowledge reality construction in that it strives to create an 'apart universe' that is unified; and the conditions whereby many separate universes can be created by "curious and imaginative thought processes", (Arnold, 2005, p. 211). In terms of our two knowledge frameworks, this point leads to the question: How do the ELs and MYP enact the pathways as defined through Maturana's dichotomy?

To answer this question requires a core analysis of the two knowledge frameworks. The element that should be extracted through analysis of the different curriculum designs is that of *habit-formation*. Habits may be formed by knowledge frameworks such as the ELs or the MYP by relating the abstract to the concrete. It is the way in which societies have sought to organise the potentially

chaotic rhythms of life into rational patterns (Moffett, 1994, pp. 217–220). The MYP is a programme designed for individuals to be trained and brought forth in eight curriculum areas. This 'bringing forth' includes holistic knowledge, yet this knowledge is organised through the curriculum areas and a personal project. The habit that is therefore enacted through the MYP is one of simultaneous eight-pronged curriculum area development. It is worthwhile to note that the symbol at the heart of the MYP (see Figure 2) and that represents the personal project is the outline of a child that is drawn lightly across the world. It could be said that the MYP has been designed with global subjects in mind; and the pathway that the MYP promotes is consequently global. Its basis in transcendental curriculum knowledge echoes the habits that are enacted by global cultures such as the United Nations and international corporate business.

If we analyse the ELs knowledge framework, we may find a different type of pathway at work. It is not about individuals as such, even though 'Personal futures' is one of the essential learnings of this knowledge and thinking framework. This change in focus alters the habit-formation; as it is not a personal growth schema that is dominated by stable academic knowledge, but it is at heart a social process. This social process involves knitting the essential learnings together through thinking. The habits that will be encouraged through the ELs are situated in the locality of practice, and guided through a rational dialogue between abstract knowledge skills and the application of this knowledge (Kögler, 1996). There is no individual inscribed at the centre of this approach to building knowledge; the pathway of this action is therefore linked to community values and designing a society based on consensus. It is perhaps unclear exactly what these values are; the core values that are listed are universal and positive (see Figure 1), yet they are not linked to specific communities such as Christians, Muslims, Hindus or Atheists. These values may therefore run the risk of being vacuous; the vacuum being filled by traditional religion or the latest consumer lifestyle-craze (Steiner, 1976).

This last point about the ELs is not a matter of speculation about the application of this curriculum, but it depends upon enactment (Bohm, 1994). To understand this argument, it is illuminative to look at how enactment has been defined

through the work of Maturana (1993), and how it relates to the construction of the realities of individuals and groups in knowledge frameworks:

Objectivism makes its focus the first sense of enactment, "to portray, to bring forth something already given and determinant of the present", — there is a pre-given world structuring and regulating the actor. Radical subjectivism takes as its focus the opposite sense of the term, "to specify, to legislate, to bring forth something new and determining of the future", — the existential enactor determines the world. When the actor (enactor) is herself reciprocally enacted, these processes intersect at a nexus which, if reified, might provide an obvious focus for enquiry. However, as Varela et al. (1991) point out, this nexus is ephemeral and groundless — always simultaneously enacting and being enacted. (Whitaker, 1992, p. 109)

The MYP is enacted through objectivism. This is because it produces a set of values and ideals that are by and large left untouched through its particular knowledge provision (Cole, 2005), yet wholly transforming the subject into a formal knowledge recipient. A divide is simultaneously encouraged between the academic and global values of the MYP, and the lifestyle beliefs that are connected to the backgrounds of the students and teachers in the course, unless they themselves wholly absorb globalisation. In contrast, the ELs are enacted through a mixture of radical subjectivism and objectivism. The constructivist paradigm that runs through the ELs suggests that knowledge is built from the bottom-up, therefore allowing for radical subjectivity, yet, as Varela et al. (1991) argue, the construction of the individual by the individual is a groundless exercise. The possibility of radical subjectivism is mitigated by not specifying the individual at the heart of the knowledge framework, but looking to instigate thinking through the contemporary construction of the self (Guattari & Rolink, 1996) in groups.

5. Smooth space

The ELs presents a constructivist framework for the development of a dialogue between the local needs of the students and teachers and available knowledge resources. The MYP gives individual students the opportunity to build their knowledge skills through eight curriculum areas that may be

combined through holistic elements and a personal project. However, both of these knowledge frameworks are useless without implementation on the ground and the consent of students and teachers in schools. The MYP has the advantage of reinforcing the primacy of the curriculum areas and therefore guaranteeing the security of subject specialists. The ELs has the potential disadvantage of introducing new terminology for the organisation of subject areas, and the perceived corruption of subject integrity through making thinking connections between areas and the resultant relativity of knowledge.

A solution to these perturbations of knowledge transformation lies in what has been defined as "smooth space" (Deleuze & Guattari, 1987, pp. 489–492). A smooth space appears when an organisation takes on the aspect of a plane of immanence, or the joining together of individual universes whilst keeping the creativity and imagination of the particular agents in tact (Greene, 1995). In the first place, smooth space may be achieved by improving lines of communication between departments or faculties in that institution. As such, co-operation should be augmented and in the case of schools a collective and shared vision of the curriculum may be created (Freiberg, 1999). However, it is also true that only putting into place a functioning and usable intranet communications system is not enough to promote curriculum change (Goodlad, 1984). The extra measures that should be introduced to enable a smooth space between teachers and any internal management hierarchies include: dedicated and quality time to debate the issues that the new curriculum brings up, resources and support for developing thinking strategies in schools, a quality space where thinking can happen (Burke, 2005a & b), flexible management and team structures that encourage working together in teaching, preparation and assessment.

The MYP does not 'in-itself' require the elements of smooth space to appear across the staff cohort to enhance functionality. This is because subject teachers may work in their specialist areas to design the holistic knowledge connections of their zone, thus creating partial smooth spaces bounded by curriculum divisions. However, if the full implementation of the MYP is to be achieved; i.e. with holistic knowledge working to help the students to develop a rounded understanding of the

eight areas and how they all fit together — smooth spaces should form between the eight curriculum areas. Therefore, similar principles as have been stated for the ELs schools should be in place in MYP schools to help staff to fully develop holistic knowledge resources. These connections between subject areas must be reciprocal so that the smooth spaces between departments serve the purpose of creating a plane of immanence, and not transcendental planes where one knowledge area would be valued in comparison to another or due to economic motives (Associated Press, 2002).

6. Affectivity

The last factor that shall be examined in this comparative approach to knowledge frameworks is affectivity. It has been identified through educational research that the affective elements of teaching and learning embedded in the curriculum relate to and shape the cognitive and developmental outcomes that you want to achieve (Anderson & Sosniak, 1994; Seaton, 2002). Therefore, the knowledge guide that is used to create realities for teachers and students working in schools must have elements of affective capacity building and maintenance in them. The comparative knowledge framework question that we may ask is: How do the ELs and MYP have affective elements programmed into their workings?

The MYP accounts for the affective aspects of schooling through the holistic knowledge areas. In particular, the area of interaction named as 'approaches to learning' would seem to be an opportunity for affective learning patterns to be discussed and debated; the students and teachers engaging in relationship building and explorations of pedagogy. However, the reality of this process may be very different. One obstacle with this area of the MYP is that the 'approaches to learning' sessions may be embedded in the curriculum specialist subjects. If they are, priority will always be handed over to dedicated curriculum time, as the specialist will lead the students through their subject using a master-novice model of knowledge acquisition (Hegel, 1977). If the school organises time for the 'approaches to learning' to sit as a separate subject area, the potential of narrow and insular thought patterns emerging would exist in that the children will examine the approaches from a set perspective. For example, if the approaches to learning are studied by students with the tutorial

teacher — who happens to be a sports teacher — the perspective that will emerge will be dominated by the pedagogic principles and acts of implementation as set out by the physical education department.

In contrast, the ELs have embraced an affective approach to teaching and learning. One of the headline purposes is 'Learning to relate, participate and care', (see Figure 1) which is deeply affective. Furthermore, the essential learning areas of 'Personal futures' and 'Social responsibility' are dominated by affective concerns. Perhaps a criticism could be levelled at the ELs in that it has tilted too far into the provision of affective learning, and that it therefore does not value the beauty or power of abstract knowledge (Kant, 1952). This criticism might be vindicated by pointing to the problems with assessment that the ELs has produced. Affectivity is notoriously difficult to assess (Fiumara, 2001), in that it includes subjective elements; however, educational psychology has explored this area and produced assessment guides in terms of concepts of self, self-determination theory, motivation theories and assessment strategies with respect to the quality of learning (Krause et al., 2003). Still, many parents and teachers would prefer to assess the more clear-cut and abstract mental powers that have been examined in the past such as: calculation skills, language production, memory recall and problem solving. The ELs 'yeah-sayers' would counter that these skills are not excluded from its knowledge provision, but they are in fact enhanced and localised through the inclusion of affective capacities (Greenhalg, 1994) that increase the breadth of assessment opportunities available, and gives assessment relevance and focus for particular communities.

Conclusion

In conclusion, we would like to suggest that educators consider alternative curriculum models that address the issues raised through this comparative study, and extend them in terms of levelling the dichotomies produced through applying the terms of reference. These curriculum models should not be driven to transcendence or pure immanence, objectivism or radical subjectivism, as the core knower could be an implicit part of the curriculum with a chance to build it in a collaborative fashion. He or she will enact their curriculum through

co-construction, which is at once an affective process and a production of 'smooth space' (Cole, 2007). Neither teachers nor students hold the key to understanding a co-constructed curriculum, which is an expression of the local needs of teachers, students and the community within which they live. These needs may well include the skills and knowledge to make the local agents players on a global stage.

As we finish writing this article in 2007, the ELs knowledge and thinking framework is going through a number of changes from that which is represented in Figure 1. The thinking element is still at the heart of the framework, yet the surrounding areas have reverted to more traditional curriculum subjects such as Literacy, Maths, Geography, Science, etc. Whilst it may go down as an interesting historical experiment in curriculum design, it is still useful as a comparative device to contrast global and local education. Even though the ELs and MYP will no longer sit side by side in terms of competing for usage by schools, they do represent a way in which we may understand the future of curriculum design. On one side, local populations demand access to global skills, knowledge and wealth, on the other, global corporations view these populations as potential consumers and users of their products. The MYP shows how a global enterprise may manipulate social capital to build an empire, the ELs suggests a way of resisting such invasive tactics, and propelling local concerns outwards.

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