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HAY01547 RE-THINKING THINKING FOR THE NEW CURRICULA

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Abstract: Recent curriculum reforms, were driven, via Mayer competencies, by industry's demand for school leavers who demonstrated creative initiative in the workplace. However, monitoring student progress in critical thinking, according to McPeck, depends upon domain-specific outcome statements, in which thinking skills are evaluated according to the specific critical features of the discipline. Without these disciplinary structures, he claims, no evaluation of thinking is possible, particularly in newly integrated areas such as Science and the Arts. There has been little research on how outcome statements within learning areas link desired thinking skills to generic outcome statements such as requiring students to think critically and creatively in general, or how they link to embodied disciplinary practices, on an apprenticeship model. This paper presents a rethinking of thinking skills which links physical and social practices, intellectual and rational principles and creative problem-seeking and problem-solving in a tripartite model which demonstrates how thinking skills can be fostered and encouraged in schools. It is a general model which in this paper will make specific reference to the fostering of creativity in integrated arts programmes.

In 1988 the Australian Education Council in Hobart sought to devise a National Curriculum that would make schools more relevant to the workplace and national productivity. It was motivated by trade unions seeking a skilled workforce on one hand and a rightwing government seeking accountability for tax payer expenditure on the other education. Consequent **curriculum reforms** were also fuelled by the changing demographics of societies and families, the rapid pace of technological change, global environmental issues, global economies which demanded that schools adjust curricula to reflect an increasingly dynamic and complex society. The integration of key learning areas, the shift of emphasis from teaching content to student learning, the shift from a centralised bureaucracy to devolved community-based schools and a postmodern recognition of historical hegemonies marked a shift from a hierarchical university-dominated bureaucracy to the formulation of devolved, dynamic and inclusive education systems based on commitment to the open values of individual potential, self-acceptance, respect for others, social and civic responsibility and environmental responsibility, filtered through the Mayer Key Competencies, generic life skills, or 'overarching learning outcomes' to which all learning areas contribute.

Paranoid academics, quietly removed from representation on syllabus committees, reacted by saying that the new framework did not provide adequate preparation for university studies. The majority of students in schools had no intention of pursuing or capacity to

undertake a university degree and therefore such intellectual or discipline-based theory learning was irrelevant to many school students. Curriculum officers tried to persuade academics that incoming university students would however be better equipped to think for themselves, and acquire the necessary knowledge content in a new area of study. The change was minimised because most secondary teachers had been trained in universities in the disciplines that had now been translated into learning areas and many of the traditional values had been retained in the rhetoric of the student outcome statements, for example in Maths where students are required still to plan and undertake data collection and organise, summarise and represent data for effective and valid interpretation and communication (Curriculum Council, 1998 p.189) or in the Sciences where, although the labels of Physics and Chemistry disappear, children are encouraged still to develop a science vocabulary and an exploration of abstract "science concepts such as energy, ecosystem, air pressure and molecule".(p.232) at the same time as they apply 'scientific skills' to "use all of their senses to develop the skills of observing, labelling, comparing, describing and sorting, and to wonder about the differences and changes they observe in their everyday world" (p.231).

Generic or domain specific outcomes?

There is a slippage in these outcomes between generic outcomes and specific student outcome statements. In evaluating the progress of the school student, is the teacher to focus on the criteria of the broad generic skills or the specific ones in the old discipline? The former is clearly favoured in all the framework documentation with its emphasis on integration of learning areas, and continuous cross-referencing to other generic skills. This is most clearly evidenced in the newly integrated Arts key learning area, where one drama teacher, searching for criteria which would mark progress in an "integrated" drama programme, marked only that the student at this level ought "to be able to perform with confidence." This is consonant with the twelfth generic outcome: "Students are selfmotivated and confident in their approach to learning and are able to work individually and collaboratively" or with the core value of self-acceptance and respect of self. But what has self-confidence got to do with dramatic technique, with timing, with voice projection, with awareness of dramatic tension, with symbolic embodiment, markers of the discipline of drama? The generic outcomes assigned to the Arts learning area (Curriculum Council, 1998, pp 74-79), of developing "creative skills, critical appreciation and knowledge of *artistic* techniques and technologies" (my emphasis)...have become completely invisible under developing the "students' sense of personal and cultural identity and equip(ping) them for lifelong involvement in the appreciation of the arts."

In the draft W.A. framework of 1995, the Arts learning area alone organised all of its student outcomes statements hierarchically in the traditional arts "forms" of dance, drama, media, music and visual arts. These provide the structure of key activities, elements, skills and processes and contexts in the arts in the introduction to the 1998 version (Curriculum Council, 1998, 60-61).

This retention of discrete domain-specific forms may have been pragmatic, as most arts teachers had been trained discretely in one of these forms only, but it would be good to think that the curriculum designers were recognising the specificity of arts disciplines and the general inability for a teacher trained in, say visual arts, to be able to recognise creativity across other arts disciplines. However the final Curriculum Framework was divided into four outcomes (Arts Ideas, Arts Skills and Processes, Arts Responses and Arts in Society), with deeply ambivalent guidelines to arts teachers as to how much they were expected to integrate the arts or simply provide combinations of arts forms. The question of **incommensurability of standards across disciplinary forms** has been addressed only indirectly in the form of mapping profiles across learning areas and has not been considered in the context of evaluating student performance in the arts themselves.

For instance, the 1988 framework requires teachers to monitor how

students in early adolescence show increasing capacity for arts activities organised as a series of related and sustained processes: for example, they undertake projects such as a three-colour lino print that involves a design phase followed by the application of skills such as cutting, shaping and printing. Students also envisage the outcomes of their creative processes seeing in the mind's eye how a finished print will look. They have an increasing understanding of the specific conventions of specific arts forms: for example playing Baroque ornamentation on their own instruments. (Curriculum Council, 1998, p.66).

How is the arts teacher to decide what counts as progress in organising arts activities *in general* as a series of related and sustained activities? Is it easier to do in some arts form activities than others? For instance while dance can often be broken down into individual body movements, and then combined into group work, and then combined with music and costume, the process itself is not easily divided into discrete steps and a teacher will be hard pressed to decide how holistic it has become for each student. Is applying the traditional artistry of Hokusai woodcut to a three-colour lino print the same kind of level of difficulty as playing Baroque ornamentation?

The new emphasis on learning *across* learning areas seems on the face of it a healthy move to counteract the effects of the Platonic idealism inherent in Paul Hirst's forms of knowledge. If disciplines are assimilated into a holistic combination of emotions, values, ideas, then they are learnt with understanding, and not just superficially learnt or abstracted from their vernacular but messy world. Too many university-written curriculum aims seem to have been written in "airless places, with closed windows" (Green, 1991, 323). The enforcement of 'relevance' through integration entices real toads into the imaginary garden of the syllabuses, and makes them "real". However toads are dangerous and ugly creatures. Losing sight of the disciplinary structures and assumptions may lead us to lose the standard roses and imported flowers that we have so carefully imported and cultivated to constitute our standards of achievement. The political agenda of the Frameworks required progress of the child to be thenceforward monitored in a context of *life-skills* rather than the context of *disciplines*. Many teachers failed to see the consequences of this de-contextualising process for grading and assessment. Would such a postmodern denial of the essential nature of their Eurocentric forms of knowledge lead them into what R.S. Peters had called "an undifferentiated mush" of curriculum integration where disciplinary areas dissolved into invisibility? This is a call for more research to investigate how any teacher operates with student outcomes in such a way as to consciously guide the student to a generic outcome. Specifically I will engage for the next three years to look at how some arts teachers evaluate student progress in **creativity**, and to what extent such evaluation is necessarily tied to teaching creativity in the arts or in a particular domain.

One of the five core values in the 1998 curriculum framework is a pursuit of knowledge and a commitment to achievement of potential, said to permeate all learning areas. A subheading states that "each person should be encouraged to develop critical thinking, the *creative imagination*, interpersonal and vocational skills and basic competencies in the various forms of disciplined inquiry" (1998, p.325, *emphasis mine*). Yet in the generic outcome targeted primarily at the Arts learning area, (Curriculum Council, 1998, pp 74-79), of developing "creative skills, critical appreciation and knowledge of artistic techniques and technologies," the knowledge of artistic techniques and technologies is discipline-specific, even arts-form-specific, the creative skills and critical appreciation are not. Can we assume that creativity and critical thinking are skills which are common to all learning areas, and

undifferentiated according to context? I would suggest not, and that there needs to be a distinction made between

Creativity as a generic lifeskill/disposition/attitude

Creativity in the workplace – enterprise at work

Creativity in an integrated artform

Creativity in a particular arts domain

and, for the point of this paper primarily, more research done into the way the teacher negotiates the differences between these levels in the classroom

Critical and creative thinking skills

Let me digress a moment to speak a bit about a similar de-contextualising of thinking skills of which I approved. Philosophers of education like Robert Ennis had in the sixties defended the need for philosophers to teach critical thinking skills in schools, based on deductive logic, in which of course they had been trained. It is not difficult in a post-Foucauldian world to see how desperately philosophers of education would hold onto traditional formal logical structures and make all critical thinking, even "informal" logic, founded on the deductive structures to which they had sole access. Ennis was employed, as expert, to construct the Cornell Critical Thinking Tests which are still used to measure thinking skills in many schools. However, like Wittgenstein confronted by a meaningful gesture, when Ennis had to actually trial his "correct" alternative answers, he became aware that his assumptions of a universal logical structure were not confirmed by the answers he received from "lay" students. He acknowledged finally that the Cornell Critical Thinking Tests were accurate only if testing cohorts of students who had received training in deductive logic and did not apply to the broad range of thinking skills used in everyday discourse. He (Ennis, 1981) concluded that thinking skills had to incorporate a broader range of such practical skills as making generalizations and problem-solving, and could better be understood as dispositions to do one's best, seek truth fairly and provide reasons than discrete logical algorithms. His revised list of thinking skills/dispositions is similar to the overarching learning outcomes in my first footnote: in other words, they are evaluated in the broad context of life-skills rather than the narrower context of deductive logic.

In 1995, The Education Department of Western Australia (EDWA) commissioned me to investigate to what extent critical and creative thinking skills were embedded in draft student outcome statements across all key learning areas. They assumed, as I did, that critical and creative thinking skills were so interdependent as to be inseparable, and in many cases specific student outcome statements were rewritten to engage the student in thinking about learning areas, rather than rehearse anticipated answers. For instance Level Three children were required to be able to *discuss* the concept of health, rather than the original draft of describing it.

In 1997, Bruce Haynes and I accepted a contract from the EDWA to monitor development in critical and creative thinking skills across the seven learning areas and through the eight developmental levels. Our task was to map the levels of development towards the generic outcome in specific learning areas. In collaboration with educators and teachers, we constructed a tentative complex map of thinking skills which presumed that judgement of their worth was context-dependent, that is, it presumed intentionality and relevance to purpose in the student. We noted however that such skills did not seem to progress along the linear developmental trajectory proposed in each curriculum framework learning areas,

but were indications of a much more complex and holistic iterative process in which generic thinking and learning skills such as giving reasons, identifying, questioning and justifying assumptions, recognising contradictions, listening actively to others, providing examples and counterexamples, correcting one's own thinking, making distinctions and connections, formulating and using criteria, seeking evidence, asking questions and problem-seeking, developing intellectual courage, having a commitment to truth were continually and appropriately being invoked to support each other.

We did not address the question of this paper of the difference that the context within which the generic critical and creative thinking skills were to be evaluated would make. The framework that resulted (Haynes and Haynes, 2000) was divided into three broad categories of critical analysis, making of meaning and community of inquiry and it was recommended that a battery of testing and evaluation methods be used. The standardised tests would be most appropriate for testing the learning area or disciplined context of learning, as its focus was on meeting existing standards, whether of employers or the learning area. The second area was more closely reliant on the individual's ability to construct personal meaning out of social situations, and *prima facie* seemed more closely aligned to the creative imagination in the making of meaning.

Creative processes involve more than an original way of thinking. Robinson claims (1999, p. 29) that they always involve thinking or behaving imaginatively; this imaginative activity is purposeful, that is, it is directed to achieving an object; these processes must generate something original and the outcome must be of value in relation to the objective. So it not only has to be linked in some positive way to the conventional standards already assimilated by the student, but it must be valued by the teacher, and presumably others in the class. On the face of it, the first evaluation category encouraged normed-responses and learning the "right" way to do things, often defined within a discipline or paradigm; the second was more oriented towards the individual capacity to adapt normed responses creatively. As Robinson (1999, p.29) says "exceptional individual achievement ...is ...more likely to emerge from a system of education which encourages the creative capacities of everyone. Creativity involves a second and reciprocal mode of thought: an evaluative mode."

While a teacher could foster creative thinking, s/he could not teach it in the traditional sense without recognising the equal worth of each student's contribution for consideration and the influence of the whole classroom on the work of each student. To maximise creativity, s/he should guide, offer counterexamples as provocation, indicate contradictions, and possible dangers, but should not belittle or ignore a student's contribution, creating an open **community of inquiry** like that promoted in Splitter and Sharp (1995). The third category proposed by Haynes and Haynes was to evaluate the openness of this community of inquiry, how socially the classroom or school operated and how collaboratively teachers and students worked together on problems. Were all student ideas respected? Were "good reasons" offered for rejecting any ideas? Were all contributions given equal airing? Were there any overt hostilities or put-downs? What use was made of "different" or unusual" ideas in the classroom? To what extent were silent minorities invited to contribute? The practices in the classroom were also to be evaluated as they demonstrate to what extent a student is able to recognise, use and extend the "schemas" of others. The result of this is to make a Vygotskian-type of social inquiry more visible in the evaluation process and recognise the power implicit in language, semiotic and embedded classroom practices. One of the reasons this community of inquiry has often been ignored in class may be that discipline-oriented teachers are still very much concerned to control or at least maintain the standards of their discipline, and would probably rather ignore the possibility of a community evaluating the "real-life" worth of those standards in an ongoing fashion. Classroom discussions of a discipline-oriented topic are usually more concerned to steer agreement to the teacher's preferred answer. The community of inquiry has no such agenda.

This openness of the community of inquiry makes it extremely difficult to draw up a simple linear developmental matrix of learning skills across learning areas and through levels of learning. These apparently discrete categories of **critical thinking, making meaning and community of inquiry** are indicators only of focus, like signposts pointing in a certain direction. You cannot simply align reason under critical thinking, or imagination under meaning making, because the most energetic transformations of thought occur **between** the categories! If you are to measure reason in the critical thinking categories, you will do so only because you are temporarily using the professional standards of a discipline to do it. This model is not the linear one often presumed by constructivist educators and required by the Monitoring Standards in Education (MSE) office. It is dynamic, ecological, using an opensystems model outlined by Ulrich Neisser and Rom Harré in social psychology. Evaluation of critical and creative thinking cannot easily be divided into discrete categories because it is iterative and dynamic rather than linear. Another way of saying this is to indicate that our model reflects critical and creative *judgement*, because it is contextual and always insists on the relevance of the learning or knowledge or skill to the particular person in such and such a situation. However, for the purposes of MSE evaluation, the three categories can be held still for long enough to provide markers for evaluation and they seem as convenient as any.

In my book *The Ethical School*, I proposed the use of Lacan's Borromean knot to indicate a interdependent relationship between the three aspects of ethics – consequences, care and consistency. Each of these ethical "frames" is necessary for a comprehensive ethics, reflecting standard "theories" or models of ethics. While they can operate independently of one another and appear to be logically incompatible, they are so interdependent that to remove any one of them is to have the fabric of ethics fall apart. In this case, the three categories of critical thinking, making meaning and community of inquiry serve as indicators of focus, but critical thinking and making meaning one's evaluation, whether at the lifeskills level or at a focussed disciplinary level takes place continuously within the community of inquiry.

The Hayneses recommended to MSE that a battery of evaluation methods be used consisting of

- External testing through a range of tests, including standardised critical thinking tests.
- Internal performance on those student outcome statements which are relevant to the critical thinking process
- Teacher's reporting both on individual students' progress and on the development of a community of inquiry both in the classroom and in the school.
- Students' self-reporting, through logs, diaries and assignments.

External tests are nearly always standardised to a specific context, even where as broad as intelligence, so that this method of evaluation is more appropriate within an arts form or specific discipline. But in a postmodern spirit, this needs consolidation against a broader spectrum, so that the individual's making of meaning is reflected in a log or diary. The extent to which a student conforms, productively modifies, constantly resists the general will of the group or community of inquiry is measured by the teachers' reporting. The way the individual students adapts, resists, modifies the collective will is part of the socialising process in the responsive and responsible democratic society that seems to be the aim of the Curriculum Framework, so there needs to be a layer of evaluation that looks at the successful modelling

of participatory democracy in the microcosm of the classroom. And these lifeskills may well feedback to influence the standards of the particular discipline within which the inquiry was formulated.

The Haynes' thinking model was not a permissive or progressive child-centred one but emphasised that the making of meaning was both a personal and a social event, which required the acceptance of culturally acceptable rules to be communicable and valued, even where those rules were modified. In the arts world, as in the scientific world and world of work, students have to learn to exercise their individual imagination in the context of possible disagreement over values, and the exigencies of the physical constraints, even when modelling a clay pot or holding a dance pose. The ongoing dialectic between publicly normed and private standards breaks up standard binaries such as Arts/science, reason/imagination, critical/creative thinking, calculative thinking/poetic thinking (Bonnett, 1994, Splitter and Sharp, 1995). In practical tasks, even in the Arts, considerable calculative thinking is required to stop a pot from exploding in the kiln or a sculpture from unbalancing. Considerable creativity might be required to solve an environmental issue such as salinity in the Sciences, but its creative worth must be recognised by others aware, even implicitly, of the conventional standards of healthy soil.

The Haynes' K-10 map of thinking showed that the construction of generic thinking skills was a dynamic, complex and iterative process, which could be more easily measured by observing the classroom progress as a whole community of inquiry over a lengthy period of time, than by simply measuring any individual's progress against standardised norms. Even in creative tasks there is a need to evaluate and re-evaluate which is a negotiating process with other people and with physical constraints. Advocates of action learning affirm both the moral purpose and content of working together in diversity, modelling a democratic and inclusive society, and the efficacy and efficiency of working as a member of a team, which encourage participatory citizenship.

While a theoretical model of generic thinking skills has been drafted (Haynes and Haynes, 2000), there was no attempt to discover whether this bore any relation to student and teacher perceptions of the development of thinking skills in a learning specific domain. Most research on transfer of learning skills indicates that domain specific skills have little impact on "lifeskills", and research (i.e. the work of McCurry and Bryce at ACER) on the relationship between 'generic' competencies, some domain skills and conceptual understandings has been undertaken in post-compulsory education only. There is a need for further research into how teachers evaluate a generic "disposition" like critical thinking or creative imagination, and how much their evaluation focuses on specific classroom activities at a domain-specific level.

Focussing on a subject-specific outcome for creativity on the critical thinking category alone may miss the point. Neil Brown (1996, 2000a) argues that most school assessment of the arts implies that the student has "authentically" created the artwork only when the student fulfils the teacher's value prescriptions. In that sense the artwork is not "authentic" but done mainly to fulfil the teacher's requirements.

Cannatella (2001, 92-3) gives the following simple illustration of how complex the evaluation of creativity even in a domain can be. In a drama class for five year olds the teacher says to the group "Let us all now act as a key."

There are at least three important initial aspects to this: (1) the students will have to know what a key is, (2) how a key is used and (3) its representation. The students clearly need a conceptual grasp of what a key is, but this conceptual grasp is limited and extended by how a key is used and how it can

be represented, because without knowing how a key is used and how it can be represented, the students cannot act as a key.

What the student must be able to do is to visualise this object in different ways, one that involves specifically performance. Similarly the qualities of a key evidently will vary in size and shape and the students will have to interpret these factors when acting. The focus is on the acting as a key and not what a key is conceptually in abstraction, emphasising the issue of acting as a performance, where the performance arouses acting as a key. The acting as a key has to be done expressively, partly because the conventions of drama demand the development of this skill. A presence must be created using three-dimensional space, time, silence, voice and movement, a way of carrying and organising the representation of the performance of a key holistically, creating an individual character, a personality. The student is the key and must feel that they have become a key. Movement and posture have to combine to form a convincing presentation and to do this well, the students identification of a key and their understanding of performance have to meaningfully coalesce and will not stand apart as separate traits.

No worthy creative act disembowels itself from social identification but the image-making and acting has an intricacy, a play of form which the teachers wants to see portrayed. Such creativity rules out the possibility that one can crudely copy and leave it at that, forging a socially inane performance. Much more is demanded that attempts to cultivate a personal subtle statement, a demeanour that throws a certain brilliance upon the key, manifesting a deep reflection of the students' intellectual-aesthetic awareness.

Awesome Arts Ltd was established in Perth in 1996 to provide an integrated arts-based cross-curricular programme. It provides stimulating projects, professional development and specialist artists to participating schools to assist in the development of a professionally curated exhibition at the annual Awesome Festival. Believing that focus on the construction of artworks alone does not help foster a positive attitude to meaning-making, or understanding of what an artwork is, Awesome's intention is inspirational, attempting to form positive dispositions to the Arts and a genuine understanding of the artsworld which will endure beyond school years. The Awesome programme encourages integrity and authenticity, skills deemed desirable by employers, by making each student accountable for creating their own artwork even where it is done in collaboration with others.

Ross (1980, 1993) contends that one way of avoiding "teacher-loaded" evaluation (most often identified in our critical thinking category) is to have the students talk individually with the teacher about their reasons for doing it THAT way rather than another way. This discussion is the sort of conscious reflection on reasons for acting which takes place in the community of inquiry, consolidating cognitive schema which are building up guiding and enduring ideas of artist, artwork, audience.

AWESOME projects, as arts-based cross-curricular projects, use language, classroom organisation and power relationships in their local context to feed into future practices. Teachers find it difficult to focus on the bigger picture in the exigencies of the arts lesson, though they volunteer to engage Awesome in full knowledge of their focus on generic life-skills. I have requested funding to monitor the relationship between the generic learning skills reflected in the Overarching Learning Outcomes, as they occur in the process of teaching learning outcomes in the Arts, and in so doing, consistent with action research, direct their practices to make them more aware of the long term and more subtle implications of their teaching. In the research we will question the students themselves as to

what they think they have learnt at different stages of the year, providing them with an open map of thinking skills which they may continually reconstruct in order to gain a metacognitive apparatus which makes them better able to recognize, monitor, use and value their own creative thinking in other contexts.

But we also wish to see if averting teacher attention to life-skills results in the students actually acquiring less knowledge of and skills in the art-form itself. There is a very real danger that is focussing on generic creative competencies, competence in the visual arts, or in music will disappear. The authors of Curriculum Frameworks were not quite explicit in their de-valuing of disciplines, but it was certainly one of the consequences of the competency movement. Wim Westera (2001, p. 86) outlines the American and European experience:

While the term 'competency' has become more and more widely used as a 'new' entity to explain certain behaviours in certain situations, the causal law that relates 'competence' to 'competent performance' constitutes a tautology that lacks any explanatory power... In other words, the assessment of competences and the predictive value of such assessment for future performances is highly questionable.

Why is this important?

Robinson (1999, p.19) indicates that in the United States, the 'intellectual property' sectors, those whose value depends on their ability to generate new ideas rather than to manufacture commodities, are now the most powerful element in the US economy. A subset of the intellectual property sector are what have been called the 'creative industries' which include: advertising, architecture, arts and antiques, crafts, design, designer fashion, film, leisure software, music, performing arts, publishing, software and computer services, television and radio. He claims that "The creative industries continue to benefit from high growth rates in part because they build on, and interact with, innovations in science and technology (and) are fields of significant opportunity for the creative abilities of young people."

The inverse of this is also true. Robinson (1998, p. 31) concludes "the education system has to develop a new emphasis on creativity and discovery to give pupils the tools they will need to cope with the fast and continuing changes in the nature of work, employment and growth in the world economy that lie ahead." The Senate Inquiry into Arts Education (1995) noted that audiences for the Arts were declining and few students graduating from schools had a conceptual understanding of an artwork was. There is little evidence that arts instruction in schools engaged or engages students in an abstracted theorizing of the arts, their excitement, intellectual challenge and meaning-making capacity.

This research is a hardnosed investigation to see what economic and educational benefits could in principle and practice be provided to the education sector, the arts industry and the wider community through a focus on teacher efforts to create a generic creative disposition in an integrated Arts programme. It asks to what extent the Australian economy and Australian society can benefit from meeting employers' demands for enterprising and creative school-leavers, who have been empowered to think for themselves, work well as a team, engage in creative partnerships, and negotiate social differences to solve the artistic and practical problems posed by the Awesome programme. On the other hands it is alert to the possible cost of meeting employers' demands - that traditional standards in the various arts forms themselves will change and may disappear completely in an integrated curriculum.

REFERENCES:

Amabile, Teresa M. (1996) *Creativity in Context*, California:Westview Press.

Brown, N.M., (1997), The meta-representation of standards, outcomes, and profiles in visual arts education, *Australian Art Education*. 20, 1&2: 34-43

Brown, N.C.M.. (2002), The imputation of authenticity in the assessment of student performances in art, *Educational Philosophy and Theory*, 32, 1, (in press).

Brown, N.C.M. (2001), *Bibliography, Youth and the Arts Framework: Arts and Education Research Project*, Australia Council for the Arts (in press).

Brown, N.C.M. and Thomas, K. (1999) *Creativity as collective misrecognition in the relationships between art teachers and their students*, unpublished paper presented at the International Society for Education in the Arts Annual Conference, Brisbane, September.

Bryce, Jennifer and McCurry Doug (1999) *Cross-Curricular Competencies: An Australian Perspective*, paper presented at the British Educational Research Annual Conference, The University of Sussex at Brighton 2-5 September 1999

Cannatella, Howard (2001) Creativity and Education in Richard Davies (Ed) *Philosophy of Education Society of Great Britain Annual Conference 2001* pp.85-93

Carlson R.A. (1997). *Experienced Cognition*. Mahwah, NJ: Erlbaum

Curriculum Council (1998) *Curriculum Framework for Kindergarten to Year 12 Education in Western Australia* Osborne Park: Curriculum Council

Ennis, R. H. (1982) "A Concept of Critical Thinking" *Harvard Educational Review* 32:1 83-111.

Ennis, R (1990) "Critical Thinking and Subject Specificity: Verification and Needed Research" *Educational Researcher* 18:3 4-10.

Gardner H. (1983) *Frames of Mind--The Theory of Multiple Intelligences*. New York: Basic Books

Gazzaniga MS, Ivry RB, Mangun GR. (1998). *Cognitive Neuroscience: The Biology of The Mind*. New York: Norton

Haynes, F.A. (1991) "Towards an Archaeology of Critical Thinking" *Educational Philosophy and Theory* vol 23:1 pp121-140

Haynes, F.A. (1993) "Teaching Children to Think for Themselves" *Creative and Critical Thinking* vol 1:1 pp 23-27.

Haynes, F.A. (1998) *The Ethical School*, New York, London: Routledge.

- Haynes, F.A. and Bruce Haynes (2000) The development of a conceptual framework for critical thinking and problem solving K-10. *Creative and Critical Thinking* Vol 8 no1 (March)pp .1-9, Vol 8 No 2 (Oct) pp.71-76.
- Lam, Alice, (2000) Tacit Knowledge, Organizational Learning and Societal Institutions: An Integrated Framework *Organization Studies* May, 2000
- McPeck, J. (1992) "Thoughts on subject Specificity" in Stephen P. Norris (ed) *The Generalizability of Critical Thinking* pp 198 -206.
- Neisser U. (1983). Toward a skillful psychology. In *Acquisition of Symbolic Skill*, ed. DR Rogers, JA Sloboda, pp. 1-17. New York: Plenum
- Norris, S. R. (Ed) (1992) *The Generalizability of Critical Thinking* New York: Teachers' College Press.
- Paul, Richard. (1990) *Critical Thinking: What every person needs to survive in a rapidly changing world*. Rohnert Park: Calif: Centre for Critical Thinking and Moral Critique.
- Perruchet P, Gallego J, Savy I. (1990). A critical reappraisal of the evidence for unconscious abstraction of deterministic rules in complex experimental situations. *Cognitive Psychology*. 22:493-516
- Robinson, Ken: (1998) *All Our Futures: Creativity, Culture & Education* National Advisory Committee on Creative and Cultural Education Report to UK Ministers for Education & Employment, and for Culture, Media and Sport.
- Rosenbaum, David A. (2001) Acquisition of Intellectual and Perceptual-Motor Skills. *Annual Review of Psychology Annual*
- Ross, Malcolm (ed) (1980) *The Arts and personal growth* Oxford ; New York : Pergamon Press.
- Ross, Malcolm [et al.](1993) *Assessing achievement in the arts* Buckingham [England] ; Philadelphia : Open University Press.
- Schön, D. (1983) *The Reflective Practitioner: How professionals think in action* New York: Basic Books.
- Shaw, . R , J. Bransford,(Eds.) (1997) *Perceiving, Acting, and Knowing: Toward an Ecological Psychology*, Hillsdale, NJ: Erlbaum
- Splitter, L.J. and Sharp, A.M. (1995) *Teaching for Better Thinking: The Classroom Community of Inquiry*, Melbourne: ACER Press.
- Singley K, Anderson JR. (1989) *The Transfer of Cognitive Skill*. Cambridge, MA: Harvard University Press.
- Sternberg, Robert J. and Todd I. Lubart, (1995) *Defying the Crowd: Cultivating Creativity in a Culture of Conformity*, New York: The Free Press

Weimer WB. (1977) A conceptual framework for cognitive psychology: motor theories of the mind. In *Perceiving, Acting, and Knowing: Toward an Ecological Psychology*, ed. R Shaw, J. Bransford, pp. 267-311. Hillsdale, NJ: Erlbaum

Westera, Wim (2001) Competences in education: A confusion of tongues *Journal of Curriculum Studies* vol 33:1 pp 75-88

1. Students use language to understand, develop and communicate ideas and information and interact with others.
2. Students select, integrate and apply numerical and spatial concepts and techniques.
3. Students recognise when and what information is needed, locate and obtain it from a range of sources and evaluate, use, and share it with others.
4. Students select, use and adapt technologies.
5. Students describe and reason about patterns, structures and relationships in order to understand, interpret, justify and make predictions.
6. Students visualise consequences, think laterally, recognise opportunity and potential and are prepared to test options.
8. Students understand their culture, geographic and historical contexts and have the knowledge, skills and values necessary for active participation in Australian life.
9. Students interact with people and cultures other than their own and are equipped to contribute to the global community.
10. Students participate in creative activity of their own and understand and engage with the artistic, cultural and intellectual work of others.
11. Students value and implement practices that promote personal growth and well-being.
12. Students are selfmotivated and confident in their approach to learning and are able to work individually and collaboratively.
13. Students recognise that everyone has the right to feel valued and be safe, and in this regard, understand their rights and obligations and behave responsibly (DEWA 1998)

Creativity as a generic lifeskill/disposition/attitude

Creativity in the workplace – enterprise at work

Creativity in an integrated artform

Creativity in a particular arts domain