112 Values Based Education, Assessment, Hermeneutics and Pedagogy: the case for a meaningful 21st Century assessment paradigm

Abstract
At all stages of education the development of Character, Citizenship, Inter-personal skills, Employability and similar attributes are of increasing international importance. The aim of this paper is to present the case for assessment paradigms that recognise learner achievements in these areas that are authentic, robust and meaningful for learners, educators, parents and education providers. Three issues are identified as important: Parental, political and teacher attitudes; Types of Educational and Assessment Activity; and Choice and Relevance of Interpretative Paradigm. These form the context for discussing hermeneutical considerations, the implications of these, and issues relating to the credibility of values, achievements and the reporting of results. Existing forms of assessment, evaluation, examination and measurement are critically reviewed in the context of Values Based Education expectations and curricula. The relevance of these to the teaching and assessment of affective and conative understandings in varying cultural contexts is explored in the form of a meta-narrative; using examples drawn from Singapore, and from which conclusions are drawn and issues for research, particularly in relation to the hermeneutics of assessment put forward for further consideration.

Author and presenter: Dr. Jonathan H Robbins PhD FRSA FRPS FCIEA
Director, Research & Development, International Graded Qualifications Ltd, Singapore
email: jhr@intlgq.org

"What's the point of school?" is the title of a recent article by Graeme Paton, Education Editor, in the Daily Telegraph Newspaper[1] (11 Feb 2014). The question posed is not answered but the article provides a succinct summary of the increasing importance now being placed on character and affective attributes in British education. Noting that: "In 1947, Dr Martin Luther King gave a lecture entitled The Purpose of Education in which he told his audience that the goal of true education was, "intelligence plus character", the author went on to quote from a recent report by the British All-Party Parliamentary Group (APPG) on social mobility that:

> *"along with history and maths, teaching 'character and resilience' should be an essential part of every school's ambition ... Even though our education system is designed and assessed upon its ability to get lots of children through state exams, very few people seriously argue that the fundamental point of schools is ensuring pupils pass tests"*

"What's the point of school?" is a question that will not go away. It is the 'elephant in the room' in any discussion of the role of values, character, citizenship, inter-personal skills, and employability in school, college or university curricula. Decisions about values based education beg further questions about 'whose values and why'; about shared purposes; the orientation of a curriculum; the nature of judgements and in particular about the meaning of results arising from assessments and examinations. This paper asks questions about values based education, assessment, hermeneutics and pedagogy. Before exploring these a definition

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[1] See: http://www.telegraph.co.uk/education/educationnews/10629319/Pupils-should-be-issued-with-school-leaving-certificates.html

of the term *Hermeneutics* as used in this paper is given below. This is because meanings are governed by the paradigms to which they belong and those of our own, in which (wittingly or not) we are operating. These paradigms shape our thinking, frame our selection of meanings, our choice of operating procedures and the way that judgements may be formed and interpreted. For the sake of clarity, the working definition of the term "Hermeneutics of Educational Assessment" as used in this paper is: "The philosophy, theory and art of interpretation as applied to the practices of assessment including (inter-alia) evaluations, examinations and testing; in order to interrogate:

1. interactions of social and cultural determinants, values and perceptions giving rise to the meanings we attach to the results of assessments;
2. interactions and the nature of relationships between actors, contexts, purposes, outcomes and judgements.

Interpretation is the basis for all forms of judgement as to the meaning of something. It does not matter if it is assessment for learning, summative assessment, educational measurement or evaluations, the core action is interpretation and a judgement about meaning. The same applies to judgements about the content and orientation of curricula. As interpretation plays such an important role it is curious that there is such a paucity of publications relating to the hermeneutics of assessment. The old adage that 'Beneath every criteria lurks norm-referenced assumptions' should alert us to the need to address related issues and not just in written examinations but in psychometric testing, multiple choice questions, observations of competency, performance indicators and targets. Departments of Education, researchers and politicians seem to spend a lot of time and energy trying to prove that the results of examinations are 'reliable' or 'accurate' but there is little evidence of informed public debate about shared purposes, the orientation of a curriculum, the nature of judgements and in particular about the meaning of results arising from assessments and examinations. Clearly articulated and shared purposes are one of the keys to interpreting what results mean as well as to progressively implementing informed responses to social and working practices that are necessary in a period of rapid change. Asking questions like "What is our orientation to the curriculum?" and "What is our purpose in doing that which do?" together with questions about intent, meaning, credibility and value; forms the context for, and the beginning of, conversations about purpose and interpretations. It is of little benefit to spend time and energy trying to prove the reliability of tests, or develop Multiple Choice Questions, Educational Metrics or Criterion Referencing unless clearly articulated and shared purposes have been agreed by all concerned first. It does not matter if all sorts of statistical techniques are applied and reported on, international comparisons made, targets set, schools and countries ranked by performance if purposes are not explicitly shared and understood by all involved.

The way education has been organised and delivered since the 1950's has changed dramatically in most respects and may be regarded as still being in a process of transition in many countries. However the rate of change in examination and assessment processes has not changed to the same extent although what has changed in the last fifty or so years is the way examination results are interpreted, valued and used. Ten years ago two highly respected United Kingdom academics[i] called for a new paradigm for assessment. The call has not been answered by educators or the assessment community in ways that might question our traditional and deeply embedded assumptions. It is perverse to keep doing the same things and expect a different result. It is even more perverse to change the orientation of a curriculum towards values and character and away from a narrow focus on academic results without addressing the related issues of purpose, consensus, pedagogy and assessment.

Three issues are identified as important in arriving at assessment paradigms for the recognition of learner achievements in Values Based Education that are authentic, robust, and meaningful for learners, educators, parents and education providers.

1. Parental, Political and Teacher Attitudes

The education sector in general and schools in particular operate in a climate of conflicting and often irreconcilable demands. Ministers of Education and others in authority promote aspirational policies but rarely provide the resources needed for delivery. Sweeping changes are introduced and then abandoned as unworkable for political or practical reasons. Schools are asked to do more as further subjects or responsibilities are added to overcrowded timetables. In the midst of this Government Ministries set targets, performance indicators, monitor, control and direct schools, principals and teachers and also apply sanctions or pressures that limit the innovation and change that is publically proclaimed to be necessary. In places like Singapore, Korea or Japan the pressure to achieve good results in Primary School in order to get entry to the 'best' secondary education is relentless and well documented. The desires of parents to ensure their children succeed are fed by a private tutors and tuition companies which feed on the fears and aspirations of parents. The starting point for responding to this must be a commitment to changing the existing assessment paradigm rather than the curriculum, its content or expressions of desire for greater community involvement. Some possible actions to achieve these changes in Singapore are described by Hogan et al (2013)[ii] of which the first is:

> *Our sense is that this might be accomplished in four ways: (1) by improving the quality of the assessment tasks in the national high stakes assessment system, and doing so in a way that prioritizes extended, elaborated, authentic, multidimensional twenty-first century knowledge building tasks (including tasks that are both collaborative and ICT-mediated) that will drive instructional improvement, given the strong proclivity of teachers to teach to the test; ...*

Strategies for the implementation of an alternative assessment paradigm capable of meeting the requirements illustrated above have been described elsewhere by the author[iii]. Because leaving things to the market or to schools without taking action to address 'Folk Pedagogy' and pressures on schools and teachers to maintain the status quo is not an option; it seems likely that in all the places where moves towards emphasising values, character, citizenship and similar aspirations are being promoted, the sort of shift in attitudes that appears necessary will have to be catalysed by government actions such as mandating minimum levels of achievement in values based education for entry into the civil service and related jobs.

2. Types of Educational and Assessment Activity

In Singapore and in the United Kingdom the dominant assessment paradigm is derived from traditional written examinations and related tests such as the General Certificate of Education Ordinary and Advanced Levels. Alongside this dominant assessment paradigm sits another that applies the term 'measurement' to the purposes of assessment. This measurement paradigm and its association with the purposes of 'evaluation' lead to a focus on two notions, both of which are sources of fundamental difficulties in any consideration of how to assess the affective and conative outcomes of Values Driven Education. The first of these notions constrains choices of methods of assessment because of spurious concerns with 'accuracy'. The second of these notions is the need to choose metrics as the basis for making judgements and decisions about qualities and attributes, which are not amenable to measurement in the context of education or of the interactions that are a necessary part of authentic performance. An obsession with measuring everything or even the idea that it is possible leads to the adoption of proxy measures or forms of testing that constrain learning and distort the declared purposes of an education which promotes a sense of values and appropriate behaviours.

The Acland Report (1911)[2] discussed the way that the purpose and the nature of competitive examinations and the emphasis placed upon them were distorting the (English) national education system stated that it was necessary to have:

> *a sensible regard to those sides of school life which no written examination can ever test, and for which purely intellectual discipline is not in itself a substitute. p.28*

That part of the last sentence starting: "by a sensible regard to those sides of school life which no written examination can ever test, and for which purely intellectual discipline is not in itself a substitute"; provides a prescient reminder of the contemporary need to rethink the meanings of pedagogy, assessment and examinations in Singapore as well as in contemporary Britain, where to quote Broadfoot & Black (2004)[iv]:

> *"The importance of teacher's knowledge of their students has become increasingly marginalized as we strive for national comparators and reliability which is illusory at best, and subversive at worst, as a whole generation of young people and their families have been duped into believing and being confident in summative test data without understanding its 'technical limitations' (Broadfoot & Black, 2004, p.16) nor understanding what these writers describe as the 'modernist assumptions' (p.20) of the purposes and nature of educational assessment (ibid.). We have what can be described as a 'factory' model of assessment where one size fits all and we push as many people through as we can. ... objections to this model of assessment are readily apparent in assessment literature where the focus is on valuing the formative purposes of education and of learner's successes...despite numerous initiatives to focus on the formative purposes of education ... most have been nothing more than initiatives with a short lifespan, as they are perceived to be secondary in importance to the 'hard' testing of summative, high stakes qualifications"*

3.   Choice and Relevance of Interpretative Paradigm

In general educational practice is very conservative, reluctant to change or adapt and reluctant to incorporate insights and practices from other disciplines; preferring instead to stay with what it knows or to bend new practices to conform to that which is institutionally acceptable. That there are benefits in doing so is obvious as examples of well intentioned change gone wrong clearly show; but that there are significant risks in failing to change and adapt, especially in times of rapid technological, social and cultural change is also clear. Choice rests on knowing and understanding what is happening as well as what is available or if not currently available then possible to design and deliver. Side-stepping the need to change the paradigm by presenting technological solutions is not a feasible choice as technology is a simply a tool, the use of which is conditioned by purposes. Technology may provide different or faster ways of 'doing' but it does not alter the nature of being, or the fundamental nature of the paradigms that govern our actions. These paradigms form contextual frameworks for the self validating theories we espouse and act upon; which in turn form the lenses and filters through which we make interpretations, form judgements and make choices. A few moments thought reveals that it is not possible for us to form judgements and make choices without interpreting what we are doing, observing, hearing or reading. Even apparently simple acts like shopping, driving a car or choosing a holiday involve interpretations and assumptions that rest on norms and perceptions which are usually forms of tacit 'knowing'. Writing an examination question paper or any kind of test, marking it, or standardising, moderating and

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[2] The Acland Report (1911) Report of the Consultative Committee on Examinations in Secondary Schools, London: HM Stationery Office

awarding also involves interpretations and assumptions but these acts operate at a higher level of criticality than those of a personal nature. That being the case we should be appropriately critical in inspecting not just the interpretations and assumptions but the paradigms within which they are formed and operate. Acts of Interpretation are woven into the fabric of pedagogy, curricula, examinations and assessment. For these Acts of Interpretation to function they must create a *Community of Interpreters*[v] that explicitly share a consensus of agreement about purposes, orientations and meanings. This Community of Interpreters forms one part of a larger set of overlapping communities of allegiance, interest and practice that incorporate all those involved whether explicitly or implicitly or as recipients (e.g. learners, parents, employers) or as providers (e.g. the State, Community, School, Teachers). It is this explicitly shared consensus of agreement about purposes, orientations and meanings that makes the choice of an interpretative paradigm possible and ensures the authenticity and acceptance of both curricula and assessments. *Where a shared consensus about purposes, orientations and meanings is not made explicit and is not explicitly accepted by the wider community a re-orientation of the curriculum is unlikely to succeed.* This problem is further compounded by trying to assess or measure the achievement in values, character and citizenship education using means of doubtful validity, reliability or relevance[vi] and also by failing to engage with hermeneutical considerations, their implications and issues relating to the credibility of values based education, achievements and the reporting of results. These issues are neither new nor unknown. For example in the same year that Broadfoot and Black[vii] were stating the case for a new paradigm for assessment, Wiliam[viii] wrote:

> *There is therefore no such thing as an 'objective' test. Any item, and certainly any selection of items, entails subjectivity, involving assumptions about purpose and values that are absolutely inescapable. Value-free construct validation is quite impossible ... The fact that construct validation has for so long been taken to be value-free testifies to the power of the discourse in which it has been conducted. Indeed, Gramsci's notion of 'hegemony', as a situation in which any failure to embrace whole-heartedly the prevailing orthodoxy is regarded as irrational or even insane, seems to describe the situation rather well. Since construct validation is the process by which we establish that particular inferences from assessment results are warranted, the absence of any single 'best' interpretation reduces validation to an aspect of hermeneutics (the study of interpretation and meaning).*

'Best' is in itself a concept that relies on interpretation, an interpretation that depends on agreed notions of purpose that in their turn rely on contexts, cultures, socially derived meanings and personal beliefs to name but a few of the variables involved. To pretend otherwise is to undermine the probity and credibility of educational assessment. As educational professionals with particular interests in assessment, or examination, or evaluation, or testing, or measurement, we have a particular responsibility and duty of care to engage with the hermeneutics of assessment.

Hermeneutics
Hermeneutics is commonly associated with the interpretation of religious texts and theology but this association unnecessarily constrains the role of hermeneutics and the interpretive process. It is axiomatic that all judgements, valuations, appraisals and opinions involve acts of interpretation; whether of evidence, observation, actions or texts. In the context of education, of pedagogy and of assessment; visualising the process of interpretation as a circle that is a 'closed circuit' needs to be replaced by the image of a spiral[ix] because each interpretation subsumes that which has been known, experienced and understood previously and in doing so moves both the assessor and the outcome to a new place. Even if the purposes

and interpretations of a curriculum and its associated examination or assessment practices are explicitly shared and understood, every participant brings a different perspective and differing forms of interpretation to it by virtue of their experience, knowledge, expectations and perceptions. The concept of optical lenses and/or filters is one way to understand this as the choice of lens affects our viewpoint and our perspective, may be selective or distorting or cause a differential focus that modifies what we perceive; in the same way the filters we adopt 'colour' and change that which we see. The importance of differing forms of interpretation in the processes of examinations and assessments cannot be overstated. Consequently, any new assessment paradigm must ensure that __*all participants*__, whether providers or recipients share a consensus of agreement about purposes, meanings, expectations and outcomes. The concepts of criticality and levelness may provide a useful starting point for creating such a consensus of expectations and the creation of a Community of Interpreters. A tabulated version of a critical review of existing forms of assessment, evaluation, examination and measurement in the context of Values Based Education is presented in Appendix 1; with the purpose of forming a starting point for the consideration of the pedagogical and assessment paradigms that we work in.

This paper has highlighted issues and raised questions about the inter-relationships between values based education, assessment, pedagogy and the interpretative paradigms that govern how these are perceived and acted upon. These complex and multi-variable inter-relationships cannot be ignored in any consideration of the hermeneutics of assessment and this is why the concept of a Community of Interpreters is important, as it enables interpretive lenses and filters to be selected and applied so as to build a composite view of how the meanings attached to outcomes are created and received. The term assessment is derived from the Latin assidere meaning to *'sit and value together'*. At its simplest this only involves teacher and learner, however the contexts within which teaching, learning and assessments take place must also be taken into account, as the act of *valuing together* requires a consensus about what value is to be attached to the *results* of assessment by all involved. Such a consensus goes beyond an espoused[x] agreement that a change in curriculum content, emphasis or assessment practice is desirable; to an actual and explicit *'agreement in action'* that creates a supportive context for substantive change. This is an area that deserves further research into both the hermeneutical processes involved and their role in facilitating changes in pedagogy and assessment.

At present it is sufficient to say that unless what is being taught and assessed is *recognised* and understood as being valuable to parents and other stakeholders, it is unlikely that it will be taught or assessed adequately, however desirable or necessary educators and government ministers may consider it to be. This is why the implementation of any meaningful 21st Century assessment paradigm must start by:

1. creating explicitly shared interpretations of the value, purpose and applications of new forms of assessment;
2. considering the relevance and fitness for purpose of existing assessment paradigms;
3. the orientation of the curriculum and the types of pedagogy implied by them;
4. designing, testing and implementing new forms of assessment and reporting that are appropriate to current needs.

In an interview conducted at a school in Singapore with a senior teacher working in a catchment area described by the interviewee as: "The New York of the Singapore educational landscape" implementation issues were described as:

Much of the assessment expected has not been thought through and developed ... key focus is 'student-centric, this requires a holistic approach to begin at the beginning of school life, it is a process of gradual metamorphosis as the child goes through school life. ... Structure for delivery is still being set-up and is dependent on the mission and values of each school. [Our] Perception is of a steep learning curve that requires strong leadership and a high level of awareness of need for strong courses so teachers understand that values based education is important. They [teachers] are not sure what approach to take, what are norms, how to impart values to students; not in a vacuum but the context of the wider community, this requires parental support for education in general. This is a source of friction and constraints – need to look at the current state of a school and what it has to do that supports values based education, depends on resources – parental involvement to [help] understanding the needs of students. To be successful [teachers] must know the children. ... [there is] Not enough time because of curricular time restraints – need to work with, look at, what children are doing so as to make more effective use of teaching time. ... Current emphasis is on how to measure effectiveness of programme.

Trying to change minds, attitudes and practices whilst maintaining the status quo creates what Hogan et al (2013)[xi] describe as:

"a very considerable tension, if not outright contradiction, between the teaching for understanding and twenty-first century learning objectives of recent policy statements (especially Teach less, Learn more) and the continuing commitment of the government to its national high stakes assessment regime"

These difficulties are reinforced by:

"... the single-minded performative orientation of instructional practices generally—and instructional strategies specifically —in Singaporean classrooms that ... partly reflects the influence of underlying cultural assumptions and institutional rules about education, teaching and learning—what Jerome Bruner (1996) and David Cohen (1988) have separately termed a 'folk pedagogy' ... the accountability system renders teachers unusually susceptible to parent credentialing anxieties. ... (and a) ... non-sectarian pragmatism and hybridity (that) is neither culturally or institutionally innocent but reflects the play of powerful vernacular discourses". p.59

The authors also note that teachers repeatedly retreated from innovative pedagogy and fell back to the default position of an examination-driven instructional regime in order that their students are properly prepared for school-based and national high stakes assessments. This forms the context for the conclusions drawn in this paper.

Conclusions
- Whatever pressures to maintain the status quo a vernacular folk pedagogy may exert, rapid alterations in economics, shifts in power and the emergence of new technologies cannot be ignored and neither can the need for character, citizenship, leadership and similar attributes associated with Values Based Education to be given parity of esteem with traditional academic subjects.
- Fifty years ago we did not suffer from Grade Inflation, Diploma Disease or different forms of Folk Pedagogy. The way education has been organised and delivered since the 1950's has changed dramatically in most respects and may be regarded as still being in a process of transition in many countries. However the rate of change in examination and assessment processes has not changed to the same extent.

- What has changed in the last fifty or so years is the way examination results are interpreted, valued and used. At its most simple this can be thought of as what the results mean to the people who receive and use them. Meanings change over time and so do the ways examiners interpret the responses of candidate's, parents interpret results and employers or others interpret the success or otherwise of schools.
- Acts of Interpretation are woven into the fabric of pedagogy, curricula, examinations and assessment. For these Acts of Interpretation to function they must create a Community of Interpreters that explicitly share a consensus of agreement about purposes, orientations and meanings.
- An internationally accepted agreement about the meaning of key terms and the ways they are used in educational assessment is desirable so as to promote a consistency in their use and avoid confusions arising from the careless and interchangeable usage of terms based on different interpretative paradigms and improve the quality of dialogue and understanding amongst users.

Issues for further research

1. A meta-analysis of the international literature on the application of hermeneutics to education in general and pedagogy and assessment in particular.
2. The role of hermeneutics in values based education, character and citizenship education and similar formulations because these are highly dependent on perceptions of what terms mean, who decides how they are interpreted and how they are promoted in different social contexts, cultures and orientations to the curriculum.
3. Applications of Hermeneutical and Phenomenological methods to understanding the interactions of Pedagogy and Assessment (in the broadest sense of including examinations, metrics &etc), curricula orientations and the meanings of these to the different actors involved.
4. Investigations into the practicality and value of creating Communities of Interpretation and the effect of these on the acceptance of change in educational and assessment practices.

Selected Readings

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Appendix 1

TYPE	Lens/Filter	Process	Intended Application	Intended Outcomes	Probable Orientation of Curriculum	Relevance to Values Based Education
Assessment FOR Learning	Feedback, Encouragement, Correction, Formation	Observation, Discussion, Recording	Internal Records	Internally generated results derived from statements of intended outcomes	N/A	High
Assessment OF Learning	Periodic Summation and Reporting	Assessment & Evaluation of gathered information (e.g. scores, results) leading to synoptic reporting	Internal and External Reporting	Internal generated statements for the assessment of intended outcomes leading to periodic forms of internal and external reporting and / or certification	N/A	High
Assessment of Performance	Mastery of expectations e.g. repertoire, communication, affective and conative abilities	Synoptic & Holistic Observation of specified forms of performance and interactive discussion e.g. Show & Tell	Certification at different levels of demand	Externally generated statements for the assessment of intended outcomes leading to forms of external reporting and certification at different levels of demand and criticality	Liberal, Neo-Classical and /or Neo Vocational	High
Assessment of Capacity	Mastery of Cognitive, Affective and Conative attributes contextualised by demand, criticality and application	Assessment & Evaluation of gathered information together with Synoptic & Holistic Observation of specified forms of contextualised behaviour and interactive discussion	Certification at different levels of demand and Criticality of Application	Externally generated statements for the assessment of Cognitive, Affective and Conative attributes in Applied Contexts leading to forms of external reporting and certification at different levels of demand and criticality	Liberal and Neo-Vocational	High
Evaluation	Comparative worth of the outcome of (e.g. test product, action) in relation to specified level and coverage of course content and explicit, tacit or inferred standards	Comparison of relative worth or value in relation to	Rating or Rank-Ordering	Certification and / or Ranking of Mastery in relation to a group of learners and / or specified content at different levels of demand and criticality	Neo-Classical	Moderate
Criterion Referenced Testing and Observation	Task, Occupation, Technique, Skill	Observation, Scoring, Pass/Fail	Statement of Acquired Competence	Certification of Competence in relation to a specified context and / or content at different levels of demand and criticality	Neo-Vocational	Low
Weak Criterion Referencing	Subject knowledge, understanding, application	Predominately Written Examinations, Coursework, some Oral / Practical tests	Certification and / or Rank Ordering	Certification at different levels of demand, criticality and application	Liberal and Neo-Classical	Low
Skills Based Competency Testing and Observation	Criterion and Weak Criterion Referencing, Skill Tests, Observation of Practice, Assessment of Outcomes e.g. product	Written Examinations, Coursework, Oral and Practical tests	Observation and Rank Ordering of levels of competency in specified contexts and applications at different levels of demand	Certification at different levels of demand, criticality and application	Neo-Vocational	Low

Examination	Weak Criterion Referencing for Tests, Assignment(s), Dissertation(s), Long and Short Answer papers	Written Examinations, Coursework, and other tests of knowledge, understanding and ability.	Certification and Rank Ordering	Certification at different levels of demand, criticality and (frequently) pre-determined distributions of awards	Liberal and Neo-Classical	Low
Oral, Aural, Visual and Practical Examination	Tests of Skill, Techniques, Knowledge, Understanding and the ability to apply the same	Tests of Knowledge, Understanding and Application	Certification and Rank Ordering often as part of other forms of examination	Certification at different levels of demand, criticality and application	Liberal, Neo-Classical and Neo-Vocational	Moderate to High depending on purpose
Multiple Choice Questions (MCQ's)	Tests of knowledge and understanding (usually within specified contexts)	Completion and scoring of pre-defined question papers using pre-trialed sets of questions comprising a correct answer and multiple distracters. Use of scoring templates or similar instruments	Certification and / or Rank Ordering	Certification at different levels of demand, criticality and application	Liberal and Neo-Vocational	Low
Computerised Testing	Tests of knowledge and understanding (usually within specified contexts)	Completion and scoring of pre-defined question papers using pre-trialed sets (e.g. of MCQ's, written questions and tasks). May be scored using scoring templates or similar instruments using software or live markers.	Certification and / or Rank Ordering	Certification at different levels of demand, criticality and application	Liberal and Neo-Vocational	Low to Moderate depending on purpose
Metrics	Evaluative rank ordering in relation to pre-tested norms/standards	Various forms of psychometric testing and appraisal, profiling and / or proxy measures and / or MCQ's or questionnaires	Certification and / or Rank Ordering	Certification at different levels of demand, criticality and application	Liberal and Neo-Vocational	Low

[i] Broadfoot, P. & Black, P. (2004) The First Ten Years of Assessment in Education, in Assessment in Education, 11 (1), pp. 7-27.

[ii] c.f. Hogan, D., Chan, M., Rahim, R., Maung, A. K., Chen, L. S., Zhe, S. Y. and Wenshu, L. (2013) Context and Implications Document for: Assessment And The Logic Of Instructional Practice In Secondary 3 English and Mathematics Classrooms In Singapore. Review of Education, 1: 122–123. doi: 10.1002/rev3.3009

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[iv] op cit

[v] I am indebted to Dickhaut, Walter R. (2013-07-02). Building a Community of Interpreters: Readers and Hearers as Interpreters, Cascade Book - An Imprint of Wipf and Stock Publishers. Kindle Edition for the concepts expressed here and elsewhere in this paper.

[vi] Wiliam, D. Towards a philosophy for educational assessment Accessed on 10/03/2014 at 1215 from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.196.1052&rep=rep1&type=pdf

[vii] op cit.

[viii] op cit.

[ix] c.f. Dickhaut, Walter R.

[x] Argyris, C., & Schön, D. (1978) Organizational learning: A theory of action perspective, Reading, Mass: Addison Wesley.

[xi] op cit.